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ARTS IIIE Computer System Operator's Manual/Software User's Manual (CSOM/SUM)

Common ARTS Mosaic Display Mode

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CHANGE CONTROL PAGE

The following pages were affected in the May 2001 delivery of the ARTS IIIE Computer System Operator's Manual/Software User's Manual (CSOM/SUM), ATC 61097, Final, Revision G (Mosaic).

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CHANGE HISTORY

Change levels and applicable dates are indicated below:

Level	*Date*	*Version/Change*
Draft	8 November 1996	
Update	13 June 1997	
Final	8 December 1997	
Final	9 June 1998	Revision A
Final	13 October 1998	Revision B
Final	11 January 1999	Revision B, Change 1
Final	5 November 1999	Revision C
Final	22 November 1999	Revision C, Change 1
Final	22 February 2000	Revision D (ACD Updates)
Final	*4* May 2000	Revision E (RGW Updates)
Final	22 November 2000	Revision F (Revision 24,25 Updates)
Final	**May2001**	Revision G (Mosaic Updates)

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1.0 INTRODUCTION

1.1 PURPOSE

The Computer Systems Operator's/Software User's Manual provides the automation specialist, airway facility technician, and system program specialist with information and detailed procedures required to initialize, operate, and monitor the ARTS IIIE system.

1.2 SCOPE

The ARTS IIIE Upgrade system utilizes a family of Versa Module Eurocard (VME)-based processors, configured with common hardware to accomplish the necessary system functions. Common operational software is scaleable and site-adaptable to support any size configuration at ARTS IIE or ARTS IIIE sites. The purpose of the processors is to perform general purpose ARTS IIIE processing functions that are related to the specific subsystem functions. The operational subsystems of the ARTS IIIE system include Common Processing (CP) Subsystem, Subsystem Interface (SSI) Subsystem, Display Processing (DP) Subsystem, System Monitor Console (SMC) Subsystem, ARTS Radar Gateway (RGW) Subsystem, and Track Processing (TP) Subsystem. This manual is written assuming that the user is familiar with the use of the hardware equipment, computer terminals, and Personal Computers (PCs). It also assumes familiarity with MS-DOS and Microsoft Windows software, and the general use of both of these systems.

1.3 DOCUMENT OVERVIEW

The organization of the Computer System Operators Manual/Software Users Manual and the conventions used for presenting information to the user are described in the following paragraphs.

1.3.1 Document Organization

This document is arranged into 10 sections. This section, Section 1 .O, Introduction, contains a brief overview of the ARTS IIIE system and document conventions.

Section 2.0, System Initialization and Load Procedures, contains the procedures required to power up, power down, and bring the ARTS IIIE equipment to an operating state.

Section 3.0, SMC-PC Graphical User interface (GUI) Description, contains a description of the use of the pictographic user interface on the SMC.

Section 4.0, SMC-PC User Interface Description, contains the procedures that permit the use of the SMC in order to monitor and control the ARTS IIIE equipment and software.

Section 5.0, Display Keyboard Entries, contains a list of all display keyboard entries (normal, implied, and supervisory).

Section 6.0, On-Line Programs and Associated Printouts, describes the use of the various support tools available to the user.

Section 7.0, Test Support Programs, describes the keyboard entries for the Test Support Programs.

Section 8.0, Off-Line Programs, describes the tests and the execution requirements used for Off-Line Programs.

Section 9.0, Debug Aids, describes the microprocessor-based aids used for software performance analysis, error detection, and limited correction capability.

Section 10.0, Sensor Alignment Verification and Registration Procedures, contains procedures for site personnel to analyze sensor alignment and registration.

The document also contains several appendices.

Appendix A contains a list of allowed SMC-PC keyboard entries.

Appendix B contains a list of SMC-PC functions, their system host and under what state or condition of the SMC-PC they may be executed.

Appendix C contains a list of all ARTS functions and traces their origin to previous systems.

Appendix D contains a cross-reference list of ARTS IIA to A6.0-5/A2.09 interfaces.

Appendix E contains a cross-reference list of A6.04 ARTS system functions to A6.05/A2.09 interfaces.

Appendix F contains a list of SMC-PC parameters that may be edited by the user via the Registry Editor.

Appendix G contains a list of Alphanumeric Keyboard Recording messages.

Appendix H contains a list of Internal Failure, Alarm, and Informative messages.

Appendix I contains a list of Configuration Status Request messages.

Appendix J contains a list of System Monitor Station messages.

Appendix K contains a list of CDR Editor Printouts.

Appendix L contains a list of CDR Editor Software Status and Error messages.

Appendix M contains a brief description for each type of performance data.

Appendix N contains a list of Acronyms and Abbreviations.

1.3.2 Document Conventions

The Computer System Operators Manual/Software Users Manual, ATC 60097, Final, December 1995, was used as a basis for this document. Modifications based on system configurations, functions, and capabilities were implemented in this document.

Several conventions are employed in this manual when presenting procedures for operating either the ARTS IIIE hardware or software components. These conventions are as follows:

1. Procedures are presented as numbered lists. Each numbered item represents a single step or a related series of steps.

2. When several actions are possible during a single step, they are presented as an indented outline.

3. Specific keys on a keyboard device are presented within angle brackets. An example of this convention would be the instruction press the <Enter> key.

4. Numbers-Three number systems are used: octal, decimal, and hexadecimal. Octal numbers are preceded by a zero (e.g., 077 is octal 77). Hexadecimal numbers are specified as a "hex". Decimal and hexadecimal numbers do not have a leading zero.

1.4 GOVERNMENT DOCUMENTS

The following documents of the exact issue shown form a part of this document to the extent described herein. In the event of conflict between the documents referenced herein and the contents of this document, the contents of this document shall be considered a superseding requirement.

Documents:

ARTS IIIE System Operator's Manual, Stage 2, Final, December 1990.

Automated Radar Terminal System (ARTS IIIA) and En Route Automated Terminal System (EARTS) Reference Manual, September 1983.

NAS-MD-634 A6.05/A2.09 System Description and Specified Series

NAS-MD-636 A6.05/A2.09 Beacon/Radar Input Processing

NAS-MD-638 A6.05/A2.09 Keyboard

NAS-MD-639 A6.05/A2.09 Display Output Processing and Converging Runway Display Aid (CRDA)

NAS-MD-640 A6.05/A2.09 Inter-facility Data Transfer and Traffic Management System

NAS-MD-642 A6.05/A2.09 Error and Status Messages

NAS-MD-645 A6.05/A2.09 Enhanced Target Generator

NAS-MD-646 A6.05/A2.09 CDR Editor, Retrack, and Disk/File Utilities

NAS-MD-648 A6.05/A2.09 Continuous Data Recording and Performance Monitoring

NAS-MD-651 A6.05/A2.09 System Console

Standards:

Federal: None

1.5 NON-GOVERNMENT DOCUMENTS

The following documents of the exact issue shown form a part of this document to the extent described herein. In the event of conflict between the documents referenced herein and the contents of this document, the contents of this document shall be considered a superseding requirement.

Specifications: None

Standards: None

Drawings: None

Other Publications:

ATC 60097	Computer System Operators/Software Users Manual (CSOM/SUM), Final, Change 2, 26 July 1996.
ATC 61007	Software Requirements Specification (SRS), Final, 1 May 1995.
ATC 61246	Software Product Specification, System Monitor Console Software (SMON), CSCI #1, Final, June 1998.
ATC 61247	Software Product Specification, Display Processing Software (DPS), CSCI #2, Final, June 1998.
ATC 61248	Software Product Specification, Stroke Display Controller Software (SDCS), CSCI #3, Final, June 1998.
ATC 61249	Software Product Specification, Subsystem Software (SSS), CSCI #4, Final, June 1998.
ATC 61250	Software Product Specification, System Console Software (SCS), CSCI #5, Final, June 1998.
ATC 61251	Software Product Specification, Maintenance Software (MAINT), CSCI #5, Final, June 1998.
ATC 61252	Software Product Specification, Track Processing Software (TPS), CSCI #7, Final, June 1998.
ATC 61253	Software Product Specification, Common Processing Software (CPS), CSCI #8, Final, June 1998.
ATC 61254	Software Product Specification, Site Adaptation Software (SADS), CSCI #9, Final, June 1998.
ATC 61255	Software Product Specification, Engineering Environment Software (EES), CSCI #10, Final, June 1998.
ATC 61256	Software Product Specification, Sensor Interface Software (SIFS), CSCI #11 , Final, June 1998.
ATC 61257	Software Product Specification, Continuous Data Recording Editor Software (CDRES), CSCI #12, Final, June 1998.
ATC 61375	Interface Design Document (IDD), Final, June 1998.
ATC 61041	Hardware Detail Design Document (HDDD). See 61291, Hardware Product Specification, Appendix II, 15 April 1998.
ATC 61065	Instruction Book for Common ARTS (IIIE) System Configuration and Interface Data
ATC 61066	Instruction Book for Common ARTS (IIIE) System Monitor Console (SMC) Subsystem
ATC 61067	Instruction Book for Common ARTS (IIIE) Display Processing (DP) Subsystem

ATC 61068	Instruction Book for Common ARTS (IIIE) Common Processing (CP) Subsystem
ATC 61069	Instruction Book for Common ARTS (IIIE) Track Processing (TP) Subsystem
ATC 61098	Computer System Diagnostic Manual

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2.0 SYSTEM INITIALIZATION AND LOAD PROCEDURES

This section contains all the procedures for initialization of the ARTS IIIE system. The equipment is grouped in subsections according to the subsystem that contains it.

2.1 SYSTEM UTILIZATION

2.1.1 Track Processing (TP) Subsystem

2.1.1.1 Sensor Receiver and Processor (SRAP)

1. At each SRAP rack power control panel:
   a. Set both the 35 AMP and 15 AMP circuit breakers to ON.
   b. Verify that the SYSTEM POWER and BLOWER indicators are lit.
2. At the maintenance panels of all modules:
   a. Ensure that the POWER toggle switch is in the OFF position.
   b. Set the VIDEO DISPLAY rotary switch to 0.
   c. Set the ENBL/DSBL toggle switch to ENBL.
   d. Set the VOLTAGE CHECK rotary switch to OFF.
   e. Set the OPER/DIAG toggle switch to OPER.
   f. Set the FLAG and BRANCH 1 and 2 toggle switches to the down position.
   g. Set the POWER toggle switch to the ON (up) position.
   h. While ensuring that the uCONT RUN/STOP/STEP toggle switch is in the STOP position, depress the momentary contact MACLR toggle switch.
   i. Set the uCONT RUN/STOP/STEP toggle switch to RUN, first at the Beacon Data Acquisition Subsystem (BDAS) and then at the Radar Data Acquisition Subsystem (RDAS).
3. Set the CHANNEL SELECT toggle switches on the BDAS modules to the DUP position.

2.1.1.2 Sensor Gateway (SG)

At each SG:

1. Set the three-position TEMPERATURE ALARM switch to ALARM ENABLE.
2. Set all FSO and FS1 toggle switches on all boards in the chassis down.
3. Set the WRPROT toggle switch to ON.

4. Press the AC POWER switch ON.

5. Press the OPERATIONAL network switch.

6. Verify that the green DC VOLTAGES indicators are lit.

7. Verify that the green USLED and LSLED lights on the DVME-750 boards blink.

8. Verify that the green USLED and LSLED lights on the DVME-134 board blink.

2.1.1.3 Interface Converter Rack (Site Option)

At each Rack:

1. Set the POWER ON/OFF switch to ON.

2. Verify that the red PWR indicator is lit on the Interface Converter CCAs.

2.1.1.4 TP Chassis

At each TP:

1. At the Function Select thumbwheel switch position, enter the number corresponding to the operational state desired for this TP. The options are:

Switch Position	Act ion
0	The operational program is loaded from Flash into RAM and begins executing.
1	The operational program is loaded from the first hard disk drive and begins executing.
2	The operational program is loaded from the second hard disk drive and begins executing.
6	The **Lynx** operating system is loaded but no disk partitions are **mounted. The** system stops with a DLSH shell.
8	Enter the Motorola Debugger mode and await further operator action.
9	In **this** position, the MAINT Diagnostic firmware is executed to build **a chassis** configuration table with operator input from a Maintenance PC.
A	The MAINT Diagnostic firmware is executed to display the chassis configuration table on the 2x20 character display.
B	The MAINT Diagnostic firmware is executed to build a chassis configuration table.
C	The Lynx operating system is loaded and the system stops with a DLSH shell.

Switch Position	Action
D	The Lynx operating system is loaded, a disk check is executed, and the system stops in the debugger. After the disk check the chassis continues as though position “C” was selected. Note: Manual pushbutton resets of the VME chassis can cause hard disk corruption: “Normal resets” which write suicide notes do not do this. If the VME chassis hard disk integrity is suspect the chassis should be put into thumbwheel position “D” and reset. This will check and correct the typical disk corruption. If desired, detailed status messages are available via the chassis maint port. After the disk program has run, return the thumbwheel to its normal operating position and manually reset the chassis. This manual reset will not cause any corruption because no application process is running.
E	The Extended Diagnostic Test is executed after the chassis power-up diagnostics complete.
F	The FAT mode is established after the chassis power-up diagnostics complete.
All Others	No action taken after Power-Up Test completes.

2. At the Network ID thumbwheel switch position, enter the Network ID number corresponding to this TP.

3. Depress the Power switch to position “1”. (These procedures also may be followed if the TP Reset switch or the MVME-177 Reset switch is pressed.)

4. Observe the RUN and SCON green LEDs light on the MVME 177 card.

5. Observe the STAT green LED lights on the SVME-744 card.

6. Observe the STAT Fail lights momentarily on the VCOM-54 card.

7. Simultaneously with steps 2-5, observe the Maintenance Display area. The following messages appear in the order listed; however, some messages may not be displayed long enough to be visible.

   a. POWER-UP TEST IN PROGRESS — SBC177

   b. POWER-UP TEST IN PROGRESS — MEM541

   c. POWER-UP TEST IN PROGRESS — LAN744

   d. POWER-UP TEST IN PROGRESS — 2ND177

   e. POWER-UP TEST IN PROGRESS — VCOM54

   f. POWER-UP TEST IN PROGRESS — H0Disk

   g. POWER-UP TEST IN PROGRESS — H1Disk

   h. POWER-UP TEST IN PROGRESS — FDisk

   i. POWER-UP TEST COMPLETED — PASS

j. LYNX STARTING

k. SSSD STARTING

l. TP STARTING

m. TPx (Software Version Number) State, where x = O-2, State = ACTIVE, STANDBY, OFFLINE, or IDLE. ex. TP2 R026 ACTIVE

2nd line contains the following:

(Adaptation Data Site Version)

This is l-17 characters, possibly named per the convention: xxx.Ryyy.i.zzz, where xxx is the three-character site ID, Ryyy is the three-digit revision number, i is the revision interim number (only specified when needed), and zzz is athree-digit subrevision number. Examples are UD3.R021 .001 or
UD3.026.001 .R026

8. After TP Power-up Diagnostics are completed, and if there are no faults detected in the above tests, and the Function Select switch is set to 0, 1, or 2, the operational program loads and takes control of the chassis.

2.1.2 Common Processing (CP) Subsystem

2.1.2.1 Interface Converter Rack

At each Rack:

1. Set the POWER ON/OFF switch to ON.
2. Verify that the red PWR switch is lit on the interface Converter (Site Option) and/or the Telco Bridge CCAs.

2.1.2.2 CP Chassis

At each CP:

1. At the Function Select thumbwheel switch position, enter the number corresponding to the operational state desired for this CP. The options are:

Switch Position	Action
0	The operational program is loaded from Flash into RAM and begins executing.
1	The operational program is loaded from the first hard disk drive and begins executing.
2	The operational program is loaded from the second hard disk drive and begins executing.
6	The Lynx operating system is loaded but no disk partitions are mounted. The system stops with a DLSH shell.
8	Enter the Motorola Debugger mode and await further operator action.
9	In this position, the MAINT Diagnostic firmware is executed to build a chassis configuration table with operator input from a Maintenance PC.
A	The MAINT Diagnostic firmware is executed to display the chassis configuration table on the 2x20 character display.
B	The MAINT Diagnostic firmware is executed to build a chassis configuration table.

Switch Position	Action
C	The Lynx operating system is loaded and the system stops with a DLSH shell.
D	The Lynx operating system is loaded, a disk check is executed, and the system stops in the debugger. After the disk check the chassis continues as though position "C" was selected. Note: Manual pushbutton resets of the VME chassis can cause hard disk corruption: "Normal resets" which write suicide notes do not do this. If the VME chassis hard disk integrity is suspect the chassis should be put into thumb-wheel position "D" and reset. This will check and correct the typical disk corruption. If desired, detailed status messages are available via the chassis maint port. After the disk program has run, return the thumbwheel to its normal operating position and manually reset the chassis. This manual reset will not cause any corruption because no application process is running.
E	The Extended Diagnostic Test is executed after the chassis power-up diagnostics complete.
F	The FAT mode is established after the chassis power-up diagnostics complete.
All Others	No action taken after Power-Up Test completes.

2. At the Network ID thumbwheel switch position, enter the Network ID number corresponding to this CP.

3. Depress the Power switch to position "1". (These procedures also may be followed if the CP reset switch or the MVME-177 reset switch is pressed.)

4. Observe the RUN and SCON green LEDs light on the MVME-177 card.

5. Observe the STAT green LED lights on the SVME-744 card.

6. Observe the STAT Fail lights momentarily on the VCOM-54 card.

7. Simultaneously with steps 2-5, observe the Maintenance Display area. The following messages appear in the order listed; however, some messages may not be displayed long enough to be visible.

   a. POWER-UP TEST IN PROGRESS — SBC177

   b. POWER-UP TEST IN PROGRESS — MEM541

   c. POWER-UP TEST IN PROGRESS — LAN744

   d. POWER-UP TEST IN PROGRESS — VCOM54

   e. POWER-UP TEST IN PROGRESS — H0Disk

   f. POWER-UP TEST IN PROGRESS — H1Disk

   g. POWER-UP TEST IN PROGRESS — FDisk

   h. POWER-UP TEST COMPLETED — PASS

i. LYNX STARTING

j. SSSD STARTING

k. CP STARTING

l. CPx (Software Version Number) State, where x = O-2, State = ACTIVE, STANDBY, OFFLINE, or IDLE. ex. CP2 R026 ACTIVE

2nd line contains the following:

(Adaptation Data Site Version)

This is l-l 7 characters, possibly named per the convention: xxx.Ryyy.i.zzz, where xxx is the three-character site ID, Ryyy is the three-digit revision number, i is the revision interim number (only specified when needed), and zzz is a three-digit subrevision number. Examples are UD3.R021.001 or
UD3.026.001 .R026

8. After CP Power-up Diagnostics are completed, and if there are no faults detected in the above tests, and the Function Select Switch is set to 0, 1, or 2, the operational program loads and takes control of the chassis.

2.1.3 Display Processing (DP) Subsystem

2.1.3.1 Full Digital ARTS Display (FDAD). The FDAD initialization procedure outlined in this paragraph will in most cases put the FDAD in an operational state. If the procedure does not accomplish this, perform the procedure in paragraph 2.1.3.2 which initializes the FDP.

1. At the FDAD maintenance panel:

   a. Set the MODE toggle switch to desired mode (A3N/A3E).

   b. Turn the TEST rotary switch to OPR position for normal operation.

   c. Set the TIME COMP ON/TEST toggle switch to ON.

   d. Set the WRITE PROTECT toggle switches to SDC and FDP positions.

   e. Set the TS/D ENABLE/TIMESHARE toggle switch to TS/D ENABLE.

   f. Ensure that the LAMPS toggle switch is in the OFF position.

   g. Ensure that the METER toggle switch is in the OFF position.

2. Locate circuit breaker under console shelf and to the right just above the maintenance panel, and set it to the ON position (right).

3. At the operator control panel (left side):

   a. Set the POWER ON/OFF toggle switch to ON (green indicator lights).

   b. Set the MTI/NORM GATE toggle switch to ON.

   c. Set the ALARM OVRD ON/OFF switch to OFF.

d. Set the following dials as desired:

- FOCUS
- CA-MSAW ILLUM and VOLUME
- COMPASS ROSE and PANEL ILLUMINATION
- MTI/NORM GATE ADJ
- RANGE MARK INTENSITY
- SWEEP
- VIDEO GAIN (all).

4. At the keyboard, rotate the PANEL ILLUMINATION potentiometer to desired position.

5. At the operator control panel (right side):

a. Set the BEACON/ANALOG toggle switch to ANALOG.

b. Set the FIELD INHIBIT switches (P, L, 1, 2, 3, 4, A, and B) down to disable field inhibits.

c. Set the TIME SHARE/DIGITAL toggle switch to TIME SHARE.

d. Position MAP SELECT ILLUM as desired and ensure that no MAP SELECT push buttons are selected.

e. Set the two CENTER/DECENTER dials and the CENTER/DECENTER toggle switch to the desired settings. Use the push-to-turn dials to change selected setting.

f. Set the CHAR SIZE four-position switch to select desired character height (Small, Medium, Large, or Variable). If V is selected, the CHAR SIZE LG SM potentiometer will adjust character height.

g. Set the LEADER length eight-position rotary switch (outer knob) to desired position for the display. Increases leader length gradually to a maximum of 1.5 inches.

h. Set the LEADER direction two-position switch (inner knob) to desired position. Selects leader direction of N. S. E, and W when in the clockwise position. Selects NE, SE, NW, and SW when in the counterclockwise position.

i. Set the VAR RANGE 30-position rotary switch to desired position (range in 2-mile increments from 6 to 64 nautical miles).

j. Set the DIGITAL BRIGHTNESS dials (all) to desired positions.

2.1.3.2 FDAD Display Processor (FDP)

1. Open PEC drawer. If necessary refer to Appendix C of the Instruction Book for FDAD Display Processor (FDP), ATC 31142.

2. Set all the FSO and FS1 toggle switches on all the boards in the FDP chassis down.

3. Set the WRITE PROTECT toggle switches on the maintenance panel to SDC and FDP.

4. Place the NETWORK switch in the OPERATIONAL position (located on left side of console under keyboard shelf).

5. Press the FDP RESET push button to start the diagnostic tests and initialize the software.

6. Verify that the green USLED and LSLED lights on the DVME-750 boards blink.

7. Verify that the green USLED and LSLED lights on the DVME-134 board blink.

8. Verify that the green USLED and LSLED lights on the DVME-704 board blink.

9. Close PEC drawer.

2.1.3.3 Local BANS Processor (LBP)

1. Set the three-position TEMPERATURE ALARM switch to ALARM ENABLE.

2. Set all FSO and FS1 toggle switches on all boards in the chassis down.

3. Set the WRITE PROTECT toggle switch to ON.

4. Press the AC POWER switch ON.

5. Press the OPERATIONAL network switch.

6. Verify that the DC VOLTAGES green indicators are lit.

7. Verify that the green USLED and LSLED lights on the DVME-750 boards blink.

8. Verify that the green USLED and LSLED lights on the DVME-134 board blink.

2.1.3.4 Digital BRITE Radar Tower Indicator Equipment (DBRITE)

1. At the Digital Scan Converter (DSC) unit.

   a. Set the CONTROL switch to TOWER.

   b. Set the BIT TEST switch to ON LINE.

   c. Set the BIT SEQ switch to RUN.

   d. Set POWER switch to the ON position.

   e. Observe the POWER ON indicator is lit.

2. At each DBRITE Monitor:

   a. Set the POWER ON-OFF switch to the ON position.

   b. Observe that the monitor displays a raster (displayed data may appear if the DBRITE is active).

   c. Set the following dials as desired:

      · FOCUS

- CONTRAST
- BRIGHTNESS

3. At each DBRITE Remote Control Unit (RCU):

   a. Observe that the Control Panel POWER ON indicator is lit.

   b. Set the following dials as desired:

      - PANEL ILLUM
      - AURAL ALARM
      - DISPLAY BRITE
      - DISPLAY CONT
      - VIDEO GAIN/BKG
      - VIDEO GAIN/VIDEO
      - VIDEO GAIN/BCN
      - VIDEO GAIN/MAP
      - VIDEO GAIN/SPARE
      - TRAILS
      - XOVR
      - LDR-LEN
      - A/N INTEN
      - RANGE MARK INTEN

   c. Set the INHIBIT switches (P, L, 1, 2, 3, and 4) down.

   d. Set the DECENTER switch to OFF.

   e. Set the MTI/N GATE switch to ON.

   f. Set the MAP switches (1, 2, 3, 4, and 5) down.

   g. Set the RANGE SEL switch to the 60 NM position.

   h. Set the A/N C SIZE switch to 0.

   i. Set the LDR - DIR switch to the ANG position.

   j. Set the QUICKLOOK switches (1, 2, 3, 4, and 5) to the center (off) position.

   k. Set the COMPASS ROSE switch down.

l. Set the RANGE MARK CENTER/OFFSET switch to CENTER.

m. Set the RANGE MARK SEL switch to 10 NM.

4. At each DBRITE Aural Alarm Control Unit (DACU):

a. Set the POWR ON/POWER OFF switch to the POWER ON position.

b. Observe the POWER ON indicator is lit.

c. Observe the POWER OFF indicator is not lit.

d. Set the VOLUME control to the desired level.

5. At each DBRITE Keyboard (DKBD):

a. Set the BRIGHTNESS to desired level.

2.1.3.5 Remote Display Buffer Memory (RDBM)

At each RDBM:

1. At the RDBM rack power control panel:

a. Set the 15 AMP UTILITY POWER breaker switch to the ON position.

b. Set the 15 AMP RACK POW breaker switch to the ON position.

c. Ensure that none of the RACK OUTLETS fuse indicators is illuminated.

2. At the RDBM maintenance panel, set all toggle switches to the DOWN position except:

a. Set CHAN ENABLE to the AB position.

b. Set AC POWER to the ON position.

c. Set OVER TEMP to the ENABLE position.

d. Set DIAGNOSTIC to the OFF position.

e. Depress MASTER CLR.

f. Set MICRO CODE to the RUN position.

g. Set ON LINE/OFF LINE to the ON LINE position.

h. Verify that the MICRO RUN indicator is illuminated and that the OFF LINE indicator is extinguished.

i. Ensure that power is applied to the RDBM modems.

2.1.3.6 Remote Display Multiplexer (RDM)

At each RDM:

1. At the Function Select thumbwheel switch position, enter the number corresponding to the operational state desired for this RDM. The options are:

Switch Position	Action
0	The operational program is loaded from Flash into RAM and begins executing.
1	The operational program is loaded from the first hard disk drive and begins executing.
2	The operational program is loaded from the second hard disk drive and begins executing.
6	The Lynx operating system is loaded but no disk partitions are mounted. The system stops with a DLSH shell.
8	Enter the Motorola Debugger mode and await further operator action.
9	In this position, the MAINT Diagnostic firmware is executed to build a chassis configuration table with operator input from a Maintenance PC.
A	The MAINT Diagnostic firmware is executed to display the chassis configuration table on the 2x20 character display.
B	The MAINT Diagnostic firmware is executed to build a chassis configuration table.
C	The Lynx operating system is loaded and the system stops with a DLSH shell.
D	The Lynx operating system is loaded, a disk check is executed, and the system stops in the debugger. After the disk check the chassis continues as though position "C" was selected. Note: Manual pushbutton resets of the VME chassis can cause hard disk corruption: "Normal resets" which write suicide notes do not do this. If the VME chassis hard disk integrity is suspect the chassis should be put into thumbwheel position "D" and reset. This will check and correct the typical disk corruption. If desired, detailed status messages are available via the chassis maint port. After the disk program has run, return the thumbwheel to its normal operating position and manually reset the chassis. This manual reset will not cause any corruption because no application process is running.
E	The Extended Diagnostic Test is executed after the chassis power-up diagnostics complete.
F	The FAT mode is established after the chassis power-up diagnostics complete.
All Others	No action taken after Power-Up Test completes.

2. At the Network ID thumbwheel switch position, enter the Network ID number corresponding to this RDM.

3. Depress the Power switch to position "1". (These procedures also may be followed if the RDM Reset switch or the MVME-177 Reset switch is pressed.)

4. Observe the RUN and SCON green LEDs light on the MVME 177 card.

5. Observe the STAT green LED lights on the SVME-744 card.

Switch Position	Action
3-7	Not Used.
8	Go to Motorola debugger.
9	Manually modify chassis configuration table.
A	Display chassis configuration table in the 2x20 character display.
B	Build chassis configuration table.
C	Boot from highest priority device.
D	Check disk integrity and load operating system.
E	Reserved for extended diagnostic test.
F	Run Factory Acceptance Test.

3. At the Network ID thumbwheel switch position, enter the Network ID number corresponding to this RGW.
4. Set the POWER ON/OFF switch to ON.
5. After Power Up Diagnostics are completed, if there are no faults detected, and the Function Select switch is set to 0, 1, or 2, the operational program loads and takes control of the chassis.

2.2 SYSTEM LOAD PROCEDURES

2.2.1 Operational Program Loading

The hardware initialization procedures identified in the various subsystems in paragraph 2.1, Initialization Procedures, include a majority of the steps necessary to load the operational chassis with the software necessary to execute the Common ARTS operational program.

As indicated in the initialization procedures, the position of the Function Select Switch determines from where the operational software will be downloaded. Each time the chassis is initially turned on or reset, the Function Select switch is interrogated for its contents and the loading is from the load device indicated.

The SMC, CP, AGW, and TP operational chassis have three selections:

1. Function Switch Position 0 — Load RAM of the MVME-177 processor from SVME-541 Flash Memory.
2. Function Switch Position 1 — Load RAM of the MVME-177 processor from the first hard disk drive.
3. Function Switch Position 2 — Load RAM of the MVME-177 processor from the second hard disk drive.

The ACD Operational Chassis has three selections:

1. Function Switch Position 0 — Load RAM of the MVME-2700 processor from Flash Memory.
2. Function Switch Position 1 — Load RAM of the MVME-2700 processor from /PO of the hard disk drive.
3. Function Switch Position 2 — Load RAM of the MVME-2700 processor from /P1 of the hard disk drive.

Switch Position	Action
2	The operational program is loaded from /P1 of the hard disk drive and begins executing.
3-7	Not Used.
8	Go to Motorola debugger.
9	Modify chassis configuration table.
A	Display chassis configuration table in the 2x20 character display.
B	Build chassis configuration table.
C	Boot from highest priority device.
D	Check disk integrity and load operating system.
E	Reserved for extended diagnostic test.
F	Run Factory Acceptance Test.

3. At the Network ID thumbwheel switch position, enter the Network ID number corresponding to this ACD.

4. Set the POWER ON/OFF switch to ON. For a description of messages displayed in the 2x20 Maintenance Display area following power up, refer to the Computer System Diagnostic Manual, ATC 61098, section 4.9.

5. After ACD Power Up Diagnostics are completed, if there are no faults detected in the above tests and the Function Select switch is set to 0, 1, or 2, the operational program loads and takes control of the chassis.

2.1.4 System Monitor Console (SMC) Subsystem

2.1.4.1 SMC Processor

At each SMC Processor:

1. At the Function Select thumbwheel switch position, enter the number corresponding to the operational state desired for this SMC. The options are:

Switch Position	Action
0	The operational program is loaded from Flash into RAM and begins executing.
1	The operational program is loaded from the first hard disk drive and begins executing.
2	The operational program is loaded from the second hard disk drive and begins executing.
6	The Lynx operating system is loaded but no disk partitions are mounted. The system stops with a DLSH shell.
8	Enter the Motorola Debugger mode and await further operator action.
9	In this position, the MAINT Diagnostic firmware is executed to build a chassis configuration table with operator input from a Maintenance PC.

Switch Position	Action
A	The MAINT Diagnostic firmware is executed to display the chassis configuration table on the 2x20 character display.
B	The MAINT Diagnostic firmware is executed to build a chassis configuration table.
C	The Lynx operating system is loaded and the system stops with a DLSH shell.
D	The Lynx operating system is loaded, a disk check is executed, and the system stops in the debugger. After the disk check the chassis continues as though position "C" was selected. Note: Manual pushbutton resets of the VME chassis can cause hard disk corruption: "Normal resets" which write suicide notes do not do this. If the VME chassis hard disk integrity is suspect the chassis should be put into thumbwheel position "D" and reset. This will check and correct the typical disk corruption. If desired, detailed status messages are available via the chassis maint port. After the disk program has run, return the thumbwheel to its normal operating position and manually reset the chassis. This manual reset will not cause any corruption because no application process is running.
E	The Extended Diagnostic Test is executed after the chassis power-up diagnostics complete.
F	The FAT mode is established after the chassis power-up diagnostics complete.
All Others	No action taken after Power-Up Test completes.

2. At the Network ID thumbwheel switch position, enter the Network ID number corresponding to this SMC.

3. Depress the Power switch to position "1". (These procedures also may be followed if the SMC reset switch or the MVME-177 reset switch is pressed.)

4. Observe the RUN and SCON green LEDs light on the MVME-177 card.

5. Observe the STAT green LED lights on the SVME-744 card.

6. Observe the STAT Fail lights momentarily on the VCOM-54 card.

7. Simultaneously with steps 2-5, observe the Maintenance Display area. The following messages appear in the order listed; however, some messages may not be displayed long enough to be visible.

   a. POWER-UP TEST IN PROGRESS — SBC177

   b. POWER-UP TEST IN PROGRESS — MEM541

   c. POWER-UP TEST IN PROGRESS — LAN744

   d. POWER-UP TEST IN PROGRESS — H0Disk

   e. POWER-UP TEST IN PROGRESS — H1Disk

f. POWER-UP TEST IN PROGRESS — FDisk

g. POWER-UP TEST COMPLETED — PASS

h. LYNX STARTING

i. SSSD STARTING

j. SMC STARTING

k. SMCx (Software Version Number) State, where x = O-2, State = ACTIVE, STANDBY, OFFLINE, or IDLE. ex. SMC2 R026 ACTIVE

2nd line contains the following:

(Adaptation Data Site Version)

This is l-17 characters, possibly named per the convention: xxx.Ryyy.i.zzz, where xxx is the three-character site ID, Ryyy is the three-digit revision number, i is the revision interim number (only specified when needed), and zzz is athree-digit subrevision number. Examples are UD3.R021.001 or
UD3.026.001 .R026

8. After SMC Powerup Diagnostics are completed, and if there are no faults detected in the above tests, and the Function Select switch is set to 0, 1, or 2, the operational program loads and takes control of the chassis.

2.1.4.2 Optical Disk

2.1.4.2.1 Power-On Procedure

At the front panel of the power chassis on each Optical Disk:

1. Turn the power switch to the ON position.
2. The white activity indicator on the lower left of the disk front panel remains lit until the self-test sequence terminates, then the indicator extinguishes.

2.1.4.2.2 Disk Loading

1. Insert an optical disk into the cartridge opening on the front panel.
2. The cartridge eject button, on the lower right side of the front panel, will pop out.
3. The activity indicator remains lit during this process.

   a. The optical drive mechanism does not automatically eject the disk from the drive if a power failure occurs. Manual removal requires the use of an eject tool. Do not reach into the drive to get the cartridge.

2.1.4.3 Real-Time Clock (RTC)

1. At the Model 60-DC WWVB Synchronized Digital Clock:

   a. Position the POWER switch to ON (up).

b. Observe that colons come on, blink off, and then stay on.

c. Observe that after 30 to **45** seconds WWVB LOCK LED lights.

d. Observe the proper time displayed within approximately 5 minutes.

2. At the Model SF-DC Synchronized Digital Clock:

a. Position the POWER switch to ON (up).

b. Observe that colons come on, blink off, and then stay on.

c. Observe that after 3 to 4 seconds TIME CODE LOCK LED lights.

d. Observe the proper time displayed within 5 to 6 seconds.

2.1.4.4 PC Echo Printer

1. Turn printer on by pressing the end of the POWER switch marked with a “1”.

2. On the control panel, observe the POWER indicator turns green, indicating that power is on.

3. Observe the following messages are briefly displayed:

a. INTERNAL TEST — indicates the printer’s internal test is in progress.

b. NOW RESETTING — Indicates the internal test was successful.

4. Observe the ON-LINE indicator turns green.

5. Observe the initial menu is displayed.

Form Feed	Tear Off Paper	<Paper> FAN FOLD

The printer may display a different option under <Paper>, depending on the setup.

2.1.4.5 High Speed Printer (HSP)

2.1.4.5.1 Power-On Procedure

1. On the control panel, place MODE toggle switch to MODE 0 position. This requires opening the top cover. After setting switch, close cover.

2. Set POWER switch to the ON position. The switch is located on the back of the printer in the upper right corner.

3. On the control panel, observe the following:

a. Green POWER LED indicator lit.

b. Red ALARM/CLEAR LED goes on during initialization process.

c. Display shows DIAGNOSTIC CHECK for approximately 10 seconds.

d. Green READY indicator lit; red ALARM/CLEAR LED goes off.

e. Green ON LINE indicator lit. If not, press ON LINE to light indicator.

2.1.4.5.2 Power-Off Procedure

1. Assuming ON LINE LED is lit, press ON LINE switch once to place printer OFF LINE.

   a. If LED remains on, this means that unprinted data remain in printer memory. Wait until these data are printed and LED goes out.

2. Set Power switch to OFF.

2.1.4.6 Performance Data Personal Computer (PD-PC)

1. Turn PC on by pressing in on the end of the POWER switch marked with a “1”. The switch is located on the front of the PC in the upper right corner.

2. Observe that green power indicators on the PC and monitor are lit.

3. Observe various internal diagnostic echo commands until the Windows NT logo appears and displays a dialog box, asking for the user to depress Ctrl, Alt, Del to logon.

2.1.4.7 SMC Personal Computer (SMC-PC)

At each SMC-PC:

1. Turn PC on by pressing in on the end of the POWER switch marked with a “1”. The switch is located on the front of the PC in the upper right corner.

2. Observe that green power indicators on the PC and monitor are lit.

3. On the monitor, observe various internal diagnostic echo commands until the Windows NT logo appears and displays a dialog box, asking for the user to depress Ctrl, Alt, Del to logon.

2.1.5 ARTS Gateway (AGW) Subsystem

At each AGW:

1. At the Function Select thumbwheel switch position, enter the number corresponding to the operational state desired for this AGW. The options are:

Switch Position	Action
0	The operational program is loaded from Flash into RAM and begins executing.
1	The operational program is loaded from the first hard disk drive and begins executing.
2	The operational program is loaded from the second hard disk drive and begins executing.

Switch Position	Action
6	The Lynx operating system is loaded but no disk partitions are mounted. The system stops with a DLSH shell.
8	Enter the Motorola Debugger mode and await further operator action.
9	In this position, the MAINT Diagnostic firmware is executed to build a chassis configuration table with operator input from a Maintenance PC.
A	The MAINT Diagnostic firmware is executed to display the chassis configuration table on the 2x20 character display.
B	The MAINT Diagnostic firmware is executed to build a chassis configuration table.
C	The Lynx operating system is loaded and the system stops with a DLSH shell.
D	The Lynx operating system is loaded, a disk check is executed, and the system stops in the debugger. After the disk check the chassis continues as though position "C" was selected. Note: Manual pushbutton resets of the VME chassis can cause hard disk corruption: "Normal resets" which write suicide notes do not do this. If the VME chassis hard disk integrity is suspect the chassis should be put into thumbwheel position "D" and reset. This will check and correct the typical disk corruption. If desired, detailed status messages are available via the chassis maint port. After the disk program has run, return the thumbwheel to its normal operating position and manually reset the chassis. This manual reset will not cause any corruption because no application process is running.
E	The Extended Diagnostic Test is executed after the chassis power-up diagnostics complete.
F	The FAT mode is established after the chassis power-up diagnostics complete.
All Others	No action taken after Power-Up Test completes.

2. At the Network ID thumbwheel switch position, enter the Network ID number corresponding to this AGW.

3. Depress the Power switch to position "1". (These procedures also may be followed if the AGW reset switch or the MVME-177 reset switch is pressed.)

4. Observe the RUN and SCON green LEDs light on the MVME-177 card.

5. Observe the STAT green LED lights on both SVME-744 cards.

6. Simultaneously with steps 2-5, observe the Maintenance Display area. The following messages appear in the order listed; however, some messages may not be displayed long enough to be visible.

   a. POWER-UP TEST IN PROGRESS — SBC177

   b. POWER-UP TEST IN PROGRESS — MEM541

c. POWER-UP TEST IN PROGRESS — LAN744

d. POWER-UP TEST IN PROGRESS — H0Disk

e. POWER-UP TEST IN PROGRESS — H1Disk

f. POWER-UP TEST IN PROGRESS — FDisk

g. POWER-UP TEST COMPLETED — PASS

h. LYNX STARTING

i. SSSD STARTING

j. AGWx STARTING

k. AGWx (Software Version Number) State, where x = O-l, State = ACTIVE, STANDBY, OFFLINE, or IDLE. ex. AGW1 R026 ACTIVE

2nd line contains the following:

(Adaptation Data Site Version)

This is l-l 7 characters, possibly named per the convention: xxx.Ryyy.i.zzz, where xxx is the three-character site ID, Ryyy is the three-digit revision number, i is the revision interim number (only specified when needed), and zzz is athree-digit subrevision number. Examples are UD3.R021.001 or
UD3.026.001 .R026

7. After AGW Power-up Diagnostics are completed, and if there are no faults detected in the above tests, and the Function Select Switch is set to 0, 1, or 2, the operational program loads and takes control of the chassis.

2.1.6 ARTS Radar Gateway (RGW) Subsystem

At each RGW:

NOTE

The FLASH memory card should not be inserted or removed with the power turned on.

1. Insert the FLASH memory card by pushing card into the top slot (1) of the FLASH module.

2. Set FUNCTION SELECT switch according to the following:

Switch Position	Action
0	The operational program is loaded from Flash into RAM and begins executing.
1	The operational program is loaded from /p0 of the hard disk drive and begins executing.
2	The operational program is loaded from /p1 of the hard disk drive and begins executing.

Switch Position	Action
3-7	Not Used.
8	Go to Motorola debugger.
9	Manually modify chassis configuration table.
A	Display chassis configuration table in the 2x20 character display.
B	Build chassis configuration table.
C	Boot from highest priority device.
D	Check disk integrity and load operating system.
E	Reserved for extended diagnostic test.
F	Run Factory Acceptance Test.

3. At the Network ID thumbwheel switch position, enter the Network ID number corresponding to this RGW.
4. Set the POWER ON/OFF switch to ON.
5. After Power Up Diagnostics are completed, if there are no faults detected, and the Function Select switch is set to 0, 1, or 2, the operational program loads and takes control of the chassis.

2.2 SYSTEM LOAD PROCEDURES

2.2.1 Operational Program Loading

The hardware initialization procedures identified in the various subsystems in paragraph 2.1, Initialization Procedures, include a majority of the steps necessary to load the operational chassis with the software necessary to execute the Common ARTS operational program.

As indicated in the initialization procedures, the position of the Function Select Switch determines from where the operational software will be downloaded. Each time the chassis is initially turned on or reset, the Function Select switch is interrogated for its contents and the loading is from the load device indicated.

The SMC, CP, AGW, and TP operational chassis have three selections:

1. Function Switch Position 0 — Load RAM of the MVME-177 processor from SVME-541 Flash Memory.
2. Function Switch Position 1 — Load RAM of the MVME-177 processor from the first hard disk drive.
3. Function Switch Position 2 — Load RAM of the MVME-177 processor from the second hard disk drive.

The ACD Operational Chassis has three selections:

1. Function Switch Position 0 — Load RAM of the MVME-2700 processor from Flash Memory.
2. Function Switch Position 1 — Load RAM of the MVME-2700 processor from /PO of the hard disk drive.
3. Function Switch Position 2 — Load RAM of the MVME-2700 processor from /P1 of the hard disk drive.

The LBPs, if present, will load the RAM of the DVME-134 from its EEPROM if both Function Switch 0 and 1 are in the down position. Each chassis, at system load, proceeds through a set pattern of diagnostics to verify the hardware is in an acceptable condition to accept the software, then starts the download. The order of chassis power up is not critical, however, there will be different indications if the CP is started before the TP. These will be pointed out in the program load procedure.

2.2.1 .1 Program Load Procedures

1. Set up all support equipment (printers, disks, PCs, etc.) according to procedures in paragraphs 2.1 .1 through 2.1.4.

2. At each operational chassis:

   a. Set the Function Select thumbwheel to the load device number.

   b. Set the NID Selection thumbwheel to the established NID for each chassis.

   c. Set the LAN switch to Operational or Maintenance.

   d. Set the Power switch to the "1" position.

   e. After a short period of time, observe load information appearing in the Maintenance Display.

      (1) Load information, followed by chassis name (e.g., TP1, CPO, SMC2), Software Version Number (e.g., R024, R026), and state of the chassis (ACTIVE, STANDBY, OFF-LINE, or IDLE) displayed in the first line.

      (2) Line 2 displays the adaptation version and software version.

2.2.1 .1.1 CP Indications If TP is Not Operational. When the CP chassis become operational and the TP is not operational, the CP state will be STANDBY in each chassis. The display will continue until a TP becomes operational. At this time, one CP will become ACTIVE, and the other(s) will become STANDBY.

2.2.1.1.2 CP Indications If TP is Operational. When the CP chassis become operational and the TP is already operational, one CP will become ACTIVE, and the other(s) will become STANDBY.

2.2.2 Downloading Software to the VME Chassis

The operational program is resident in the EEPROM, Flash EEPROM, or on hard disks as applicable. New software may be downloaded into the VME chassis for execution in RAM and/or write to EEPROM, or downloaded to the hard drive(s) and/or burning Flash EEPROM.

There is one main downloader available to download software into a VME chassis. This is the Software Downloader which is a part of the Software Control Group of the System Console Software (SCS). The user also has the capability to reference a downloading function which is part of pROBE+. This manual downloading capability is available through the Maintenance PC (PC and pROBE+). Yet another download possibility is using the Lynx Operating system's DLSH shell capability which is available through the Maintenance PC. These downloading functions will be discussed in subsequent paragraphs.

2.2.2.1 Software Downloader. Refer to paragraph 4.2.3 for the Software Download procedures.

2.2.2.2 Manual Download and Write to EEPROM. This section describes the process of downloading to RAM and/or writing data from RAM into EEPROM using the pROBE+ downloader. This method is useful if RAM has been loaded via the RS-232 maintenance port on the DVME-134 board. The Sensor Gateway (SG) chassis and the Local BANS Processor (LBP) chassis are the two old style chassis where this downloader may be used. This procedure eliminates the need for special EEPROM write Computer Software Units (CSUs) to be embedded in the application programs.

All files used for pROBE+ downloading to a given chassis are taken from an optionally named Maintenance PC directory \USR\RUN\. Therefore, the user should ensure that the desired version of the program (run file(s)) is present in this directory or another directory on the Maintenance PC before beginning the download process. Download files may also be loaded from a floppy disk. Notice that there are no files for the new style chassis. They cannot be downloaded using this manual method. The files required for a successful download are as follows:

CHASSIS	FILE(S)
FDAD and LBP	DP.RUN LANC.RUN DPSIA.RUN
SG	SG.RUN LANC.RUN

PROCOMM Plus is the emulation program which is used to communicate between the Maintenance PC and the load chassis. PROCOMM Plus emulates 34 popular video display terminals. Terminal emulation permits running full-screen mainframe applications using the Maintenance PC as a remote terminal.

2.2.2.2.1 Download Using PROCOMM Plus. The following steps are implemented via pROBE+ using PROCOMM Plus to manually download and/or write EEPROM to any VME chassis:

1. At the Maintenance PC:

   a. Connect the RS-232 cable between the destination chassis RS-232 maintenance port on the DVME-134 board and the RS-232 port (COM1) on the PC.

   b. Switch the PC power switch to ON.

   c. Verify that the executable file for this chassis is in the \USR\RUN directory.

   d. Invoke PROCOMM Plus.

NOTE

Powering up the PC may place the user at the PROCOMM Plus logo.

(1) ENTER: PCPLUS <RETURN>

(2) OBSERVE: PROCOMM Plus logo

(3) PRESS: Any key to continue

(4) OBSERVE: PROCOMM Plus Ready

2. At the load chassis:

   a. Place the FSO switch down and FS1 switch up (pROBE+ debug mode) on the DVME-134 board.

   b. All other front panels switches must be down.

      (1) PRESS: RESET switch or power ON switch

      (2) OBSERVE: LEDs blink and no FAIL or HALT LEDs stay lit

3. At the Maintenance PC:

   a. OBSERVE: pROBE+ prompt

   b. ENTER: FM 800..D87FF 0 <RETURN>

   c. ENTER: DL [Offset] <RETURN>

NOTE

Although an offset is an optional download address, it is necessary for LANC.RUN and DPSIA.RUN. The offsets are as follows:

(1) LANC.RUN 5E000 (hex)

(2) DPSIA.RUN 66000 (hex)

   d. OBSERVE: (Blank line)

   e. PRESS: <Page Up>

   f. OBSERVE: Upload Protocol Menu

   g. PRESS: Option for ASCII <RETURN>

   h. OBSERVE: ASCII Upload Menu

   i. OBSERVE: “Please enter filename” prompt

   j. ENTER: pathname\filename.ext <RETURN>

   k. OBSERVE: Line number increments on the status line. At completion, “xxxx records read”.

NOTE

If the target chassis has multiple card types to be loaded, perform downloads for these card types by returning to Step 3 until all software is loaded. Then proceed to step 4.

4. Perform the following step to verify the load by executing the code in RAM. If this step is completed, another load of the same code starting at Step 3 should be accomplished before writing to EEPROM. It is recommended that this step be performed.

   a. OBSERVE: pROBE+ prompt

   b. ENTER: PR SR 2000 <RETURN> (Enter Supervisory state.)

   c. OBSERVE: pROBE+ prompt

   d. ENTER: GO DAA60 <RETURN> (Start software execution.)

5. Perform the following step to write RAM to EEPROM; otherwise go to step 6.

NOTE

The Write Protection switch (WRPROT) on the 503 card must be set to the OFF position for this step.

   a. Display memory at address 0xDAA00. This is the address of the descriptor table which gives the starting addresses of the available EPROM functions.

      (1) OBSERVE: pROBE+ prompt

      (2) ENTER: DM.L DAAOO <Retrn>

      (3) OBSERVE: Note the E2 Burn address (DAAlO)

   b. Start the EEPROM write function. Execution will begin at address DAAlO which is a jump instruction to the start of the EEPROM write function.

      (1) OBSERVE: pROBE+ prompt

      (2) ENTER: GO DAAlO <Retrn>

      (3) OBSERVE: The lower LED on the DVME-134 board is lit indicating that the EEPROM write is in progress. The load chassis will reset when the write is completed.

6. Place FSO and FS1 switches down on the DVME-134 board, set the WRPROT switch to the ON position, and press the RESET button.

7. Exit pROBE+/PROCOMM Plus.

   a. PRESS: Alt-X

   b. OBSERVE: EXIT DOS? (Y/N)

   c. PRESS: Y

   d. OBSERVE: MS-DOS prompt

2.2.2.2.2 **RAM Download Receive.** This section describes the process of placing a VME chassis into the RAM download receive mode. This method is useful if the DVME-503 board has not failed

yet one is unable to download to the chassis when the chassis is operational. The condition may be a result of code which does not cycle being written into EEPROM. The procedure allows the operator to recover the chassis without having to change hardware. It may be referred to as “prepping” the chassis.

1. At the Maintenance PC:

   a. Connect the RS-232 cable between the destination chassis RS-232 maintenance port on the DVME-134 board and the RS-232 port (COM1) on the PC.

   b. Switch the PC power switch to ON.

   c. Invoke PROCOMM Plus.

      (1) ENTER: PCPLUS <RETURN>

      (2) OBSERVE: PROCOMM Plus logo

      (3) PRESS: Any key to continue

      (4) OBSERVE: PROCOMM Plus Ready

2. At the VME chassis:

   a. Place FSO switch down and FS1 switch up (pROBE+ debug mode) on the DVME-134 board.

   b. All other front panel switches must be down.

      (1) PRESS: RESET switch or power ON switch

      (2) OBSERVE: LEDs blink and no FAIL or HALT LEDs stay lit

3. At the Maintenance PC:

   a. Display memory at address 0xDAA00. This is the address of the descriptor table which gives the starting addresses of the available EPROM functions.

      (1) OBSERVE: pROBE+ prompt

      (2) ENTER: DM.L DAAOO <RETURN>

      (3) OBSERVE: Note the SUPS DRCV address (DAA50)

4. Place the chassis in supervisory mode.

   a. OBSERVE: pROBE+ prompt

   b. ENTER: PR SR 2000 <RETURN>

5. Start the RAM download receive function. Execution will begin at address DAA50 which is a jump instruction to the start of the RAM download receive function.

   a. OBSERVE: pROBE+ prompt

   b. ENTER: GO DAA50 <RETURN>

c. OBSERVE: The lower LED on the DVME-134 board is lit, and the lower LED on each DVME-750 board is lit. The chassis is now ready to receive a RAM image.

6. Place FSO switch down and FS1 switch down on the DVME-134 board to allow the chassis to begin normal operations after the download is completed. It is transparent to downloader operation if the target chassis is initially in the RAM download receive mode.

7. At the Maintenance PC:

a. Exit pROBE+/PROCOMM Plus

(1) PRESS: Alt-X

(2) OBSERVE: EXIT DOS? (Y/N)

(3) PRESS: Y

(4) OBSERVE: MS-DOS prompt.

2.2.2.2.3 **Downloading Complete DVME-503 Board Images.** This section describes the procedure used to download a copy of an entire DVME-503 EEPROM image. This method may be useful if a 503 board has failed and a new board needs to be installed. The procedure is intended as a tool for maintenance engineers and is not user-friendly. It requires the modification of memory locations and hardware switch settings in order to execute correctly.

CAUTION

IT IS POSSIBLE TO COMPLETELY DESTROY THE CODE IMAGE OF ALL THE NODES CONNECTED TO THE NETWORK.

In order for this process to work correctly, you must start with a completely functional chassis of the exact type as the chassis you wish to download. The card types in each chassis and the resident software in each chassis must be identical. You CANNOT send an FDP image to an LBP, for example. Be sure that if the load is going to be sent to more than one chassis, only the chassis desired are on the selected network.

2.2.2.2.3.1 Preparing the Destination Chassis. Determine which chassis need to be loaded with a new DVME-503 EEPROM image. The chassis can then be placed in the DVME-503 receive mode using the FSO and FS1 switches on the DVME-134 board or via pROBE+.

2.2.2.2.3.2 **DVME-134 Board FSO and FS1 Receive.** The following steps prepare the destination chassis to receive a DVME-503 EEPROM image via the network.

NOTE

This is a manual step and is used in lieu of performing a pROBE+ 503 Receive (paragraph 2.2.2.2.3.3).

1. Place FSO switch up and FS1 switch down (i.e., pinch them together) on the DVME-134 board. This forces the chassis into the DVME-503 receive mode.

2. All other front panel switches must be down.

   PRESS: RESET switch or power ON switch

   OBSERVE: LEDs blink and no FAIL or HALT LEDs stay lit

3. Disable the EEPROM write-protect on the VME chassis.

4. Both LEDs on the DVME-134 board are lit, and the lower LED on each DVME-750 board is lit. The chassis will reset when the download is completed. Place FSO switch down and FS1 switch down on the DVME-134 board to allow the chassis to begin normal operations after the load is complete.

2.2.2.2.3.3 pROBE+ 503 Receive. The following steps are implemented via pROBE+ to prepare the destination chassis to receive a DVME-503 EEPROM image via another VME chassis. If the steps in paragraph 2.2.2.2.3.3 have been completed, disregard this paragraph. They perform the same function.

1. At the Maintenance PC:

   a. Connect the RS-232 cable between the destination chassis RS-232 maintenance port on the DVME-134 board and the RS-232 port (COM1) on the PC.

   b. Switch the PC power switch to ON.

   c. Invoke PROCOMM Plus.

      (1) ENTER: PCPLUS <RETURN>

      (2) OBSERVE: PROCOMM Plus logo

      (3) PRESS: Any key to continue

      (4) OBSERVE: pROBE+ display screen

      (5) OBSERVE: PROCOMM Plus Ready

2. At the destination chassis:

   a. Place FSO switch down and FS1 switch up (pROBE+ debug mode) on the DVME-134 board.

   b. Disable the EEPROM write-protect on the VME chassis.

   c. All other front panel switches must be down.

      (1) PRESS: RESET switch or power ON switch

      (2) OBSERVE: LEDs blink and no FAIL or HALT LEDs stay lit

3. At the Maintenance PC:

   a. Display memory at address DAAOO. This is the address of the descriptor table which gives the starting addresses of the available EPROM functions.

      (1) OBSERVE: pROBE+ prompt

(2) ENTER: DM.L DAAOO <RETURN>

(3) OBSERVE: Note the RECV 503 address (DAA30)

4. Place the chassis in supervisory mode.

a. OBSERVE: pROBE+ prompt

b. ENTER: PR SR 2000 <RETURN>

5. Start the DVME-503 download receive function. Execution will begin at address DAA30 which is a jump instruction to the start of the DVME-503 download receive function.

a. OBSERVE: pROBE+ prompt

b. ENTER: GO DAA30 <RETURN>

c. OBSERVE: Both LEDs on the DVME-134 board are lit, and the lower LED on each DVME-750 board is lit. Place FSO switch down and FS1 switch down on the DVME-134 board to allow the chassis to begin normal operations after the load is complete.

6. At the Maintenance PC:

a. Exit pROBE+/PROCOMM Plus

(1) PRESS: Alt-X

(2) OBSERVE: EXIT DOS? (Y/N)

(3) PRESS: Y

(4) OBSERVE: MS-DOS prompt.

2.2.2.2.3.4 Preparing Source **Chassis and Executing Download.** The following steps are implemented via pROBE+ to prepare the source chassis to send a DVME-503 EEPROM image via the network to another chassis.

1. At the Maintenance PC:

a. Connect the RS-232 cable between the destination chassis RS-232 maintenance port on the DVME-134 board and the RS-232 port (COM1) on the PC.

b. Switch the PC power switch to ON.

c. Invoke PROCOMM Plus.

(1) PRESS: PCPLUS <Retrn>

(2) OBSERVE: PROCOMM Plus logo

(3) PRESS: Any key to continue

(4) OBSERVE: PROCOMM Plus Ready

2. At the source chassis:

a. Place FSO switch down and FS1 switch up (pROBE+ debug mode) on the DVME-134 board.

b. All other front panel switches must be down.

(1) PRESS: RESET switch or power ON switch

(2) OBSERVE: LEDs blink and no FAIL or HALT LEDs stay lit

3. At the Maintenance PC:

a. Display memory at address 0xDAA00. This is the address of the descriptor table which gives the starting addresses of the available EPROM functions.

(1) OBSERVE: pROBE+ prompt

(2) ENTER: DM.L DAAOO <RETURN>

(3) OBSERVE: Note the SEND 503 address (DAA20)

4. Place the chassis in supervisory mode.

a. OBSERVE: pROBE+ prompt

b. ENTER: PR SR 2000 <Retrn>

5. Patch memory with the destination address.

a. pROBE+> PM.W BOFFO xxx <Retrn>

where xxx = NID number of single destination chassis, or
107 to download to all DPs, or
108 to download to all SGs

6. Start the DVME-503 download function. Execution will begin at address DAA20 which is a jump instruction to the start of the DVME-503 function.

a. OBSERVE: pROBE+ prompt

b. ENTER: GO DAA20 <Retrn>

c. OBSERVE: The lower LED on each DVME-750 board is lit indicating that the download is in progress. Place FSO switch down and FS1 switch down on the DVME-134 board to allow the chassis to begin normal operations after the load is complete.

7. At the Maintenance PC:

a. Exit pROBE+/PROCOMM Plus

(1) PRESS: Alt-X

(2) OBSERVE: EXIT DOS? (Y/N)

(3) PRESS: Y

(4) OBSERVE: MS-DOS prompt.

2.2.2.2.3.5 Expected Results and Error Indications. The source chassis will reset itself when the transmission is complete. The destination chassis will also reset itself when it has written the image to its 503 board. This may take approximately one minute after the source chassis completes. The amount of time the destination chassis will take to complete is dependent on how much code has been changed or moved into a new location.

If the destination chassis is reset before the changes are completed, the 503 image will be bad and the download must be restarted. If the destination chassis resets almost immediately after the source chassis completes, the write protect switch may have been left on.

2.2.2.2.4 Copying DVME-503 Images Card to Card. This section describes the procedure used to copy an entire DVME-503 EEPROM image from one board to another within the same VME chassis. This method is useful when a new DVME-503 board must be installed. The procedure is intended as a tool for maintenance engineers. Knowledge of the DVME-503 board is required since hardware jumpers must be used to change the base address of the second DVME-503 board.

The DVME-503 board which is to receive the DVME-503 EEPROM image must be placed in the same type chassis as the original DVME-503 board. The board types and resident software in each chassis must be identical. For example, you CANNOT copy an FDP image to a DVME-503 board for an LBP.

2.2.2.2.4.1 Preparing the DVME-503 Board to Receive. This section addresses the steps necessary to configure the second DVME-503 board to receive the DVME-503 EEPROM image.

NOTE

When changing the hardware jumpers on the DVME-503 board or changing boards in the chassis, make sure that a static grounding strap is worn and grounded at all times. Failing to do so may result in damage to the board.

1. Jumper A to B on pin 3 of location JB34 on the second DVME-503 board. This changes the base address of the board from hexadecimal 700000 to hexadecimal 800000.
2. Power OFF the VME chassis to be used for the copy process.
3. Remove the coverplate and insert the second DVME-503 board into the empty card slot in the VME chassis.
4. Power ON the VME chassis.

2.2.2.2.4.2 Executing the Card to Card Copy. The following steps are implemented via pROBE+ to copy one DVME-503 EEPROM image to a second DVME-503 board in the same chassis:

1. At the Maintenance PC:
   a. Connect the RS-232 cable between the destination chassis RS-232 maintenance port on the DVME-134 board and the RS-232 port (COM1) on the PC.
   b. Switch the PC power switch to ON.
   c. Invoke PROCOMM Plus.
      (1) ENTER: PCPLUS <Retrn>

(2) OBSERVE: PROCOMM Plus logo

(3) PRESS: Any key to continue

(4) OBSERVE: PROCOMM Plus Ready

2. At the VME chassis:

a. Place FSO switch down and FS1 switch up (pROBE+ debug mode) on the DVME-134 board.

b. Disable the EEPROM write-protect on the second DVME-503 board.

c. All other front panel switches must be down.

(1) PRESS: RESET switch or power ON switch

(2) OBSERVE: LEDs blink and no FAIL or HALT LEDs stay lit

3. At the Maintenance PC:

a. Display memory at address 0xDAA00. This is the address of the descriptor table which gives the starting addresses of the available EPROM functions.

(1) OBSERVE: pROBE+ prompt

(2) ENTER: DM.L DAAOO <RETURN>

(3) OBSERVE: Note the CARD2CARD address (DAA40)

4. Place the chassis in supervisory mode.

a. OBSERVE: pROBE+ prompt

b. ENTER: PR SR 2000 <RETURN>

5. Start the DVME-503 card to card copy function. Execution will begin at address DAA40 which is a jump instruction to the start of the DVME-503 card to card copy function.

a. OBSERVE: pROBE+ prompt

b. ENTER: GO DAA40 <RETURN>

c. OBSERVE: The lower LED on the DVME-134 board is lit indicating that the copy is in progress. The chassis will reset when the copy is complete.

6. At the Maintenance PC:

a. Exit pROBE+/PROCOMM Plus

(1) PRESS: Alt-X

(2) OBSERVE: EXIT DOS? (Y/N)

(3) PRESS: Y

(4) OBSERVE: MS-DOS prompt.

2.2.2.2.4.3 **Removing the Destination DVME-503 Board.** This section addresses the steps necessary to configure the second DVME-503 board for operational use.

NOTE

When changing the hardware jumpers on the DVME-503 board or changing boards in the chassis, make sure that a static grounding strap is worn and grounded at all times. Failing to do so may result in damage to the board.

1. Power OFF the VME chassis used for the copy process.
2. Remove the second DVME-503 board from the chassis.
3. Remove the jumper on pin 3 of location JB34 on the second DVME-503 board. This changes the base address of the board from hexadecimal 800000 back to hexadecimal 700000.
4. Replace the card slot cover plate on the VME chassis. If on an SMC chassis, return the previously removed DVME-503 board to its proper slot.
5. Power ON the VME chassis. Place FSO switch down and FS1 switch down on the DVME-134 board to allow the chassis to begin normal operations.
6. Power OFF the destination VME chassis.
7. Insert the DVME-503 board which received the DVME-503 EEPROM image into the 503 card slot of the destination chassis.
8. Power ON the destination VME chassis.

2.2.2.3 **Manual Download and Write to Flash EEPROM and/or Hard Disks.** This section describes the process of manually downloading the application files to the hard disk drives using the COTS application File Manager found in the Main program group. This method is useful if the SCS software is not available on the SMC PC. Also included in this section are procedures for using two utilities (prgrm_541 and prgrm_177), delivered with the LynxOS image, that are used to update the memory images programmed into the flash memory of the SVME-541 and the MVME177 boards.

For ACDs, memory images are loaded onto the MVME2700 and Flash memory.

2.2.2.3.1 Manual Download to the Hard Disk(s). To manually download the chassis hard disk drive(s) without using the Software Downloader perform the following steps:

1. Notes:
   a. If a new hard disk drive, a low level format and a build disk routine will need to be performed prior to copying any files to the hard disk. (Refer to paragraph 5.6 of the Computer System Diagnostic Manual, ATC 61098 for the Format routine and paragraph 4.5.11 of this manual or Appendix E of the Software Programmer's Manual, ATC 61096 for the Build Disk routine.
2. Using File Manager, connect to a drive and partition (/p0 or /p1) on the chassis to be updated.
3. Copy the application program files from the distribution media to the target directory. (Table 2-I contains a list of files for each chassis.)
4. Repeat steps 1 and 2 for /q0 and/or /q1 .

TABLE 2-1. DOWNLOAD FILES

CP	TP	SMC	RDM	ACD
cps	tps	smon	dps_rdm	dps_acd
sssd	sssd	sssd	sssd	sssd_ppc
maint_edp	maint_edp	maint_edp	maint_edp	startup
startup	startup	startup	startup	startx
sifs_ra	sifs_rs	sitedata.m68.gz	go_vcom	go_vcom
sifs_rc	sifs_rt		vc_prof.bin	gox
go_vcom	go_vcom		vcom.bin	gox.30bit
vc_prof.bin	vc_prof.bin		vcom_vld	pci_wpen
vcom.bin	vcom.bin		sitedata.m68.gz	vcom.bin
vcom_vld	vcom_vld			vcom_vld
sitedata.m68.gz	sitedata.m68.gz			snote
				sitedata.m68.gz

2.2.2.3.2 Manually Updating the SVME-541 Flash Image. To manually program the SVME-541 board without using the Software Downloader perform the following steps:

1. Notes:

   a. The Pn (n = 0 or 1) partition on the hard disk drive of the target chassis must be populated with the files to be programmed.

   b. A utility called prgrm_541 is delivered with the LynxOS image, programmed into the flash memory of **the** MVME177 board.

2. Place the Function Select switch on the target chassis to the "C" position and reset the chassis.

3. Using the Telnet application (Accessories Group), connect to the target chassis.

   User Name: **Type root**

   Password:

4. Use the "cd" command **to** change to the target chassis partition that will be used to transfer the program image to flash memory (PO or P1).

5. Display the contents of the directory by using the "Is -l" command

6. Use the 'rm' command to remove any undesired files or directories.

7. Program the 541 image;

   Type **prgrm_541 -f /dev/sd*n*b** (*n* = **0** or 1)

8. Terminate the Telnet session started on the PC.

9. Place the Function Select switch on the chassis to the “0” position and reset the chassis.

10. Observe on the 2x20 character display that the proper version information is displayed.

2.2.2.3.3 Updating the MVME177 Flash Images. If the MVME177 is in a CP, SMC or RDM chassis perform the following steps:

1. Using File Manager, connect to a drive and partition (usually /d0) on the chassis to be updated. Make sure the selected drive has adequate space available for the operation(at least 4 megabytes).

2. Copy the diagnostic image (**diags.mmdd**) and LynxOS image (**lynx.R.vvv**) files from the distribution media to the target directory. (“mmdd” = month and day of the diagnostic build, “vvv” = Lynx version number)

3. Place the Function Select switch on the target chassis to the “C” position and reset the chassis.

4. Using the Telnet application (Accessories Group), connect to the target chassis.

   User Name: Type **root**

   Password:

5. Change to the target chassis partition used in the file transfer performed above using the “cd” command

6. Verify that the files are listed in the directory by using the “Is -l” command

7. Program the diagnostic image;

   Type **prgrm_177 -f -d diags.*mmdd*** (replace *mmdd* with the appropriate values) at the telnet prompt.

8. Program the LynxOS image;

   Type **prgrm_177 -f -R -s lynx.R.*vvv*** (replace vvv with the appropriate values) at the telnet prompt.

9. Terminate the Telnet session started on the PC.

10. Return the Function Select switch on the chassis to its normal position and Reset the chassis.

11. Observe on the 2x20 character display that the diagnostics and operating system execute correctly and the proper version information is displayed.

If the MVME177 is in a TP chassis perform the following steps:

1. Using File Manager, connect to a drive and partition (usually /d0) on the TP chassis to be updated. Make sure the selected drive has adequate space available for the operation(at least 4 megabytes).

2. Copy the diagnostic image **(diags.mmdd)** and LynxOS image (**lynx.R.vvv**) files from the distribution media to the target directory. (“mmdd” = month and day of the diagnostic build, “vvv” = Lynx version number)

3. Place the Function Select switch on the TP chassis to the “C” position and reset the chassis.

4. Using the Telnet application (Accessories Group), connect to the TP chassis.

   User Name: Type **root**

   Password:

5. Change to the target chassis partition used in the file transfer performed above using the “cd” command

6. Verify that the following files are listed in the directory by using the “ls -l” command

   diags.mmdd

   lynx.R.vvv

   telnet

   If the telnet file is not listed perform steps 7 and 8, if it is proceed to step 9.

7. Unzip the telnet program to the /d0 directory

   Type **gzip -dc < /bin/telnet.gz > /d0/telnet** at the prompt.

8. Add the execute access privilege to the file

   Type **chmod +x /d0/telnet** at the prompt.

9. Connect to the second 177 board

   Type **/d0/telnet cpu2**

   User Name: Type **root**

   Password:

10. Mount CPU1

    Type **mount cpul :/d0 /d0** at the prompt

11. Program the diagnostic image on the second MVME177;

    Type **prgrm_177 -f -d diags.*mmdd*** (replace *mmdd* with the appropriate values) at the prompt.

12. Program the LynxOS image on the second MVME177;

    Type **prgrm_177 -f -R -s lynx.R.*vvv*** (replace *vvv* with the appropriate values) at the prompt.

13. Disconnect from second 177 board

    Type **exit**

14. Program the diagnostic image on the first MVME177;

    Type **prgrm_177 -f -d diags.*mmdd*** (replace *mmdd* with the appropriate values) at the prompt.

15. Program the LynxOS image on the first MVME177;

    Type **prgrm_177 -f -R -s lynx.R.*vvv*** (replace vvv with the appropriate values) at the prompt.

16. Terminate the Telnet session started on the PC.

17. Return the Function Select switch on the chassis to its normal position and Reset the chassis.

18. Observe on the 2x20 character display that the diagnostics and operating system execute correctly and the proper version information is displayed.

2.2.2.3.4 Updating the MVME 2700 Flash Images. The MVME 2700 is used in the ACD and RGW chassis. This procedure is used to program the power up diagnostics in a new MVME 2700 card or reset a card that has had one or more initialization parameters changed. To improve readability of this procedure, operator actions are shown in a bold font, text displayed on an output device is shown in Courier New font, and the symbol **<Enter>** means to press the return or enter key.

1. Ensure power is off to the chassis,

2. Set the Function Select Switch to the “8” position.

3. Connect a cable from the PC to the Maintenance Port of the chassis and execute the Windows terminal program configured to the following settings:

   Baud Rate = 9600
   Data Bits = 8
   Stop Bits = 1
   Parity = off
   Hand Shaking = Xon/Xoff

4. Apply power.

5. Observe the following message on the terminal: (NOTE: The version, RAM size, clock speed, and date may vary.)

```
Copyright Motorola Inc. 1988 - 1998, All Rights Reserved

PPC1 Debugger/Diagnostics Release Version 4.2 - 11/12/98 RM01
COLD Start

Local Memory Found =08000000 (6134217728)

MPU Clock Speed =367Mhz

BUS Clock Speed =67Mhz

WARNING: Keyboard Not Connected

Reset Vector Location : ROM Bank A
Mezzanine Configuration: Single-MPU
Current 60X-Bus Master : MPUO
Idle MPU(s)            : NONE

Initializing System Memory (DRAM)...
```

```
System  Memory: 128MB, ECC Enabled (ECC-Memory Detected)
L2Cache:        1024KB, 147Mhz
```

6. Power up diagnostic test runs and results are displayed on PC monitor.

7. Wait for the following prompt:

   PPC1 -Bug>

8. Set the date and time clock.

   PPC1 -Bug>**set mmddyyhhmm<Enter>**

NOTE

"mmddyyhhmm" is the current 2 digit month, 2 digit day, 2 digit year, 2 digit hour (in 24 hour military mode), and 2 digit minute.

9. Standardize the board configuration.

   PPC1-Bug>**env;d<Enter>**

   Update with Auto-Configuration Defaults

   Update Non-Volatile RAM **(Y/N)? y<Enter>**

   Reset Local System (CPU) **(Y/N)? y<Enter>**

10. Clear an area of MVME2700 memory.

    PPC1 -Bug>**bf 100000:40000 0<Enter>**

    Effective address: 00100000

    Effective count : &1048576

11. Load the Power-Up Test firmware into MVME2700 memory.

    PPC1 -Bug>**lo 0 f00000<Enter>**

12. To send the firmware: Choose the send a text file option from the terminal, and select the firmware file, e.g. maintvcd.txt. Wait until the transfer is complete, which may take a couple of minutes.

NOTE

This step assumes that the firmware text file can be accessed from the maintenance PC. The text file should be sent to the chassis via the terminal's send text file function.

13. Program the MVME2700 flash memory.

    PPC1 -Bug>**pflash 100000:40000 ff200000<Enter>**

OBSERVE: The following messages on the terminal:

```
Source   Starting/Ending   Addresses       =00100000/0013FFFF
Destination Starting/Ending Addresses =FF200000/FF23FFFF
Number  of  Effective  Bytes              =00040000 (&262144)
```

Program FLASH Memory **(Y/N)? y<Enter>**

2.2.3 Installing Software to the SMC PC

To install software onto the SMC PC the Setup Utility (\install\setup.exe integration) is used. The user has the option to perform a complete installation (Copy All Files and Set Registry), Copy All Files Only, Set Registry Only, or Copy Offline Tools Only. Based on the desired installation type, the Setup Utility then proceeds through several screens which prompt for the necessary data (refer to paragraph 4.10.1). If software is being installed to a new PC refer to Appendix E of the Software Programmer's Manual (SPM), ATC 61096 for additional procedures.

2.3 SYSTEM SHUTDOWN PROCEDURES

This section describes procedures that halt operational system software processing in preparation of complete system shutdown and also to turn off all operational equipment. These procedures do not attempt to define system or subsystem ramifications (interrupts, messages, status, etc.) that occur due to such actions. The order of the following paragraphs is not necessarily required. They reflect a possible order of operations that may cause the least impact to an orderly shutdown.

2.3.1 Stopping the CP Subsystem

Display the SMS System Configuration Group, Processor Configuration (Figure 4-l 4), and reconfigure all CPs to off-line according to the procedures in paragraph 4.3.1. Ensure that the currently active CP is the last to be placed off-line. The power switches of each CP may be switched to the "0" position.

2.3.2 Stopping the TP Subsystem

Using the same Processor Configuration display, reconfigure all TPs to be off-line according to the procedures in paragraph 4.3.1. Ensure that the currently active TP is the last to be placed off-line. The power switches of each TP may be switched to the "0" position.

Stopping the TP effectively terminates any radar data from entering the system and being dispersed as track information to other subsystems. Any subsequent processing would not be useful for real-time application. Internal to the system, by stopping TP and CP processing, the other subsystems (DP, SG, and SSS) processing would be logically terminated.

2.3.3 Stopping the SMC Subsystem

Using the same Processor Configuration display, reconfigure all SMCs to be off-line according to the procedures in paragraph 4.3.1. Ensure that the currently active SMC is the last to be placed off-line.

2.3.4 Equipment Turn-off

To the extent required by site operations, individual equipment may be turned off by reversing necessary power-on steps that were followed to initialize the system. The power-on steps are located in paragraph 2.1, System Utilization.

3.0 SMC-PC GRAPHICAL USER INTERFACE (GUI) DESCRIPTION

3.1 INTRODUCTION

The SMC-PC displays information to the user and accepts commands and requests from the user through the GUI. The GUI makes extensive use of pictures in order to organize and simplify the presentation of information on the SMC-PC color monitor screen. The GUI is based on the GUI used in the Windows NT computer operating system. This section describes the SMC-PC GUI for users who do not have prior experience using window based computer operating systems.

GUIs have found wide spread use in PCs in recent years, but they've been commercially available on larger computer systems since the late 1970s. Some of the terminology employed in a GUI has a history which dates from this time, when GUIs were much simpler than they are today. Therefore, some of the history behind these terms is explained in this section to allow the user to gain a greater understanding of the terms.

Section 4, which describes the operation of the SMC-PC software, contains a brief introductory section describing the SMC-PC desktop environment for users who are already familiar with Microsoft's operating systems.

3.1.1 Window Terminology

The SMC-PC GUI is described using a standard set of terms which refer to different kinds of windows and the graphic components contained on them. These terms are described in the paragraphs below, along with illustrations which depict actual examples from the SMC-PC software.

3.1.2 The Desktop

The entire graphical presentation on the SMC-PC computer screen, as well as the mouse pointing device, is known as the desktop. The term desktop has long been in use to describe GUI environments, and some of the first GUIs actually organized the screen to make it appear to be a representation of the surface of someone's desk at work. The term has remained in use, even though modern GUIs no longer strive to resemble a desktop. In the case of the SMC, the desktop is composed of both the area on which windows are displayed, and the mouse pointing device, which is used to manipulate the graphics which appear on the screen. The portion of the SMC-PC desktop which is displayed on the computer screen is an area of solid color that extends across the entire screen. Graphic items are positioned directly on top of this solid color background. The use of the mouse part of the desktop is described in paragraph 3.1.5.

3.1.3 Windows

The window is a work area which has a border on all four sides, and which contains words and symbols which allow the user to manipulate information within the window, or access functions within the SMC-PC which are normally controlled by the Windows NT operating system.

The SMC-PC uses windows of several different varieties as a means of organizing user activities and simplifying the entry of data or the carrying out of user commands. These different kinds of windows are illustrated and described in the subsequent paragraphs.

3.1.3.1 Program Groups Windows. Related activities are grouped together in a single window known as a program group or folder window. A program group window displays the available activities as icons listed vertically in the window. A sample program group window is shown in Figure 3-I. The icons are the small pictures depicting the activities available with the name of the each activity next to the picture. Clicking on an icon will open the window for that activity. Figure 3-I shows the program groups window from which the Administrative Tools program group has been selected by clicking the Administrative Tools icon in the Programs window. Clicking on an icon in the Administrative Tools program group window will open an application window for that particular activity.

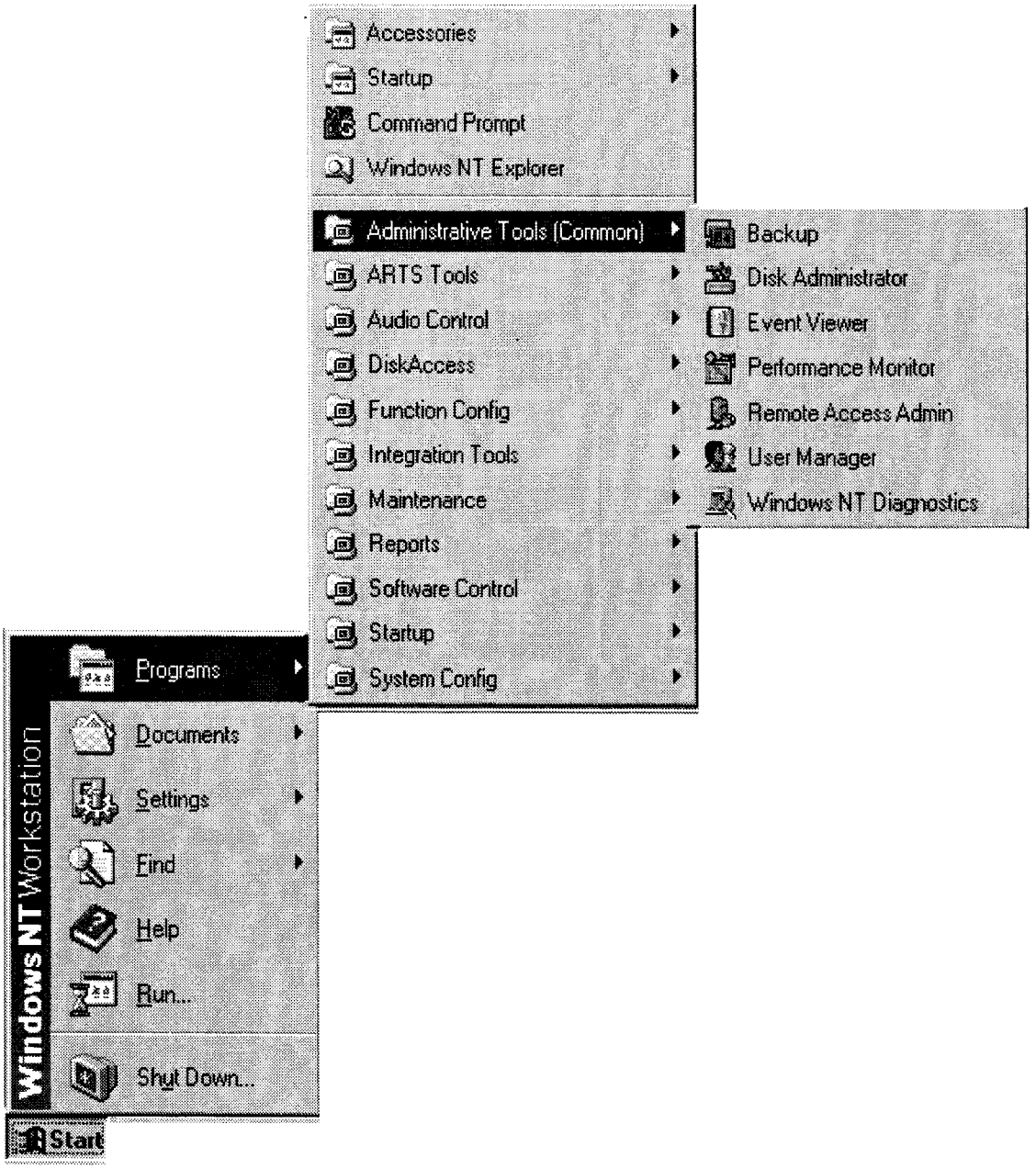


FIGURE 3-I. SAMPLE PROGRAM GROUPS WINDOW

3.1.3.2 Applications Windows. Figure 3-2 is a sample of an actual SMC-PC application window. (Figure 4-1, in the next section, shows a generic SMC-PC applications window and paragraph 4.1 defines the terminology used to describe an applications window.) An application window is opened by double clicking on an icon in a program group window. Figure 3-2 shows the Interfacility Config application window, which is an application found under the Function Config program group. The procedures in Section 4 which describe the use of the SMC-PC user interface will group the applications windows directly under the section heading for each program group.

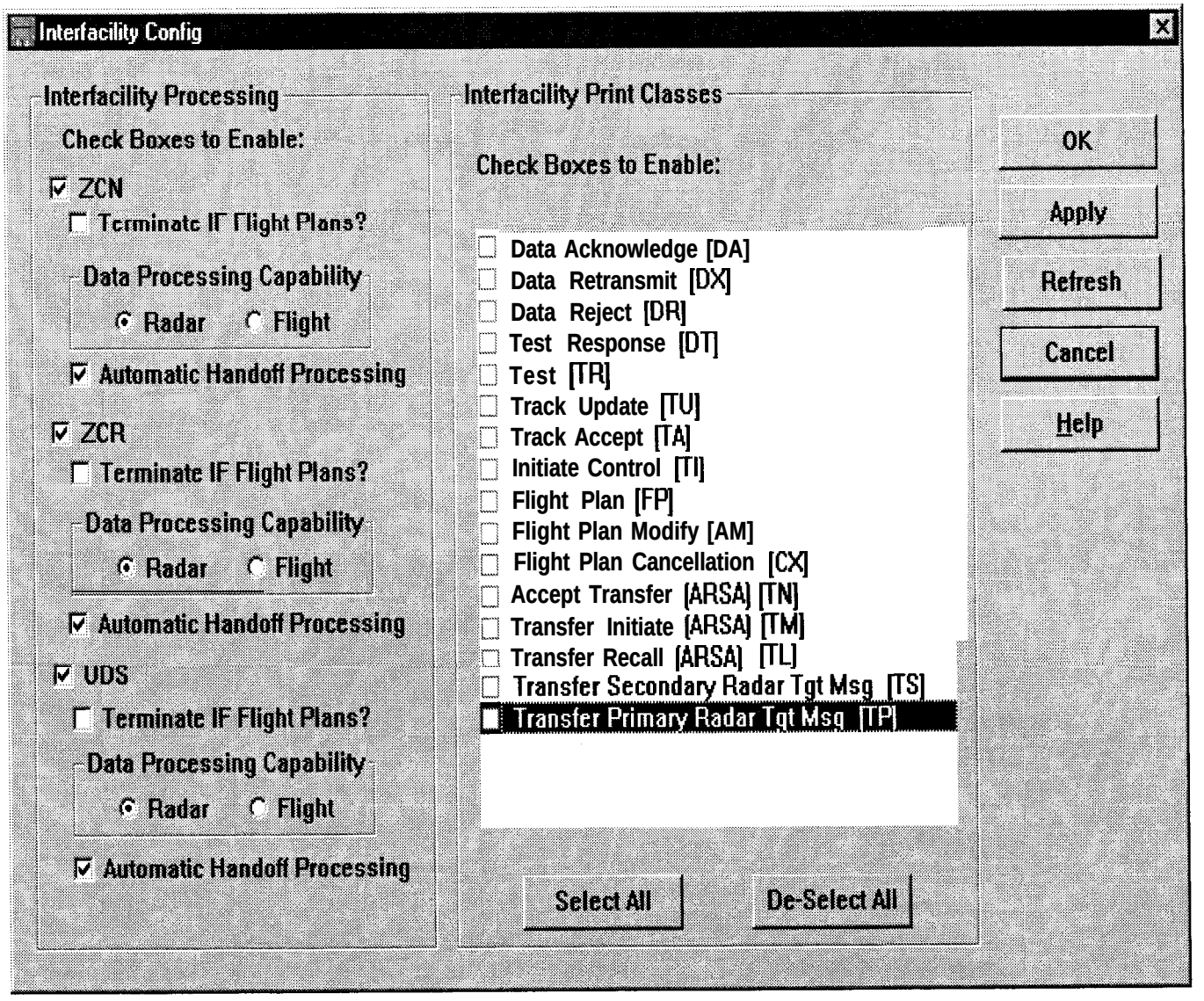


FIGURE 3-2. SAMPLE APPLICATIONS WINDOW

3.1.3.3 Dialog Windows. Dialog windows are used to present information to the user, and present the user with a set of choices. Error messages are the events which most frequently trigger the display of a dialog window. The user selects the choice presented on the dialog window by clicking the appropriate button. Dialog windows come in two basic forms: informational dialog windows and decision dialog windows.

Informational dialog windows display an exclamation point inside a large yellow circle. These messages are meant to inform the user of some event, and they are acknowledged by clicking the single button labeled OK. A sample informational dialog window is shown in Figure 3-3.

Decision dialog windows display a large question mark inside a green circle. The user is presented with buttons labeled with two or more choices of action. The user simply clicks the desired action. Decision dialog boxes are often used to confirm a user-requested action. These dialog boxes often have three buttons: one labeled OK, another labeled CANCEL, and a third labeled HELP. Clicking the OK button carries out the action, while clicking the CANCEL button returns the user to the application window without carrying out the action. Clicking the HELP button displays Help information on the function. A sample decision dialog window is shown in Figure 3-4.

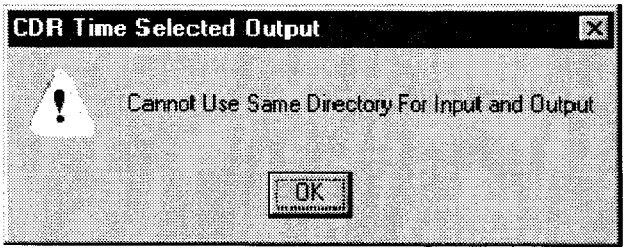


FIGURE 3-3. SAMPLE DIALOG WINDOW — INFORMATIONAL

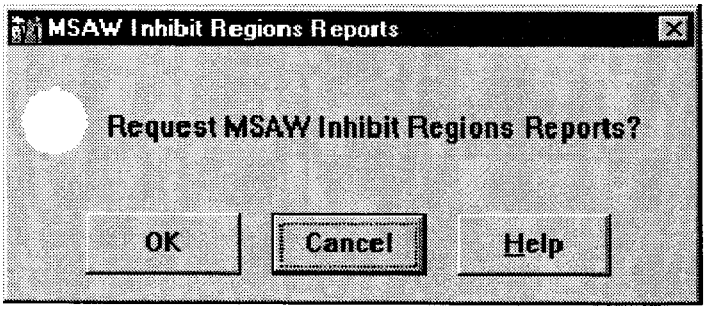


FIGURE 3-4. SAMPLE DIALOG WINDOW — DECISION

3.1.4 Menu Bars and Toolbars

Both program groups and applications windows also contain Menu Bars and Toolbars (see Figure 4-1, in the next section, for the locations of the menu bar and tool bar on program group and applications windows).

3.1.4.1 Menu Bar Functions. Frequently used functions are grouped under labels on the menu bar. Figure 3-5 shows a menu bar containing the functions File, Edit, View, Page, Tools, and Help. Clicking on a function name (File has been clicked in Figure 3-5) causes the function name to be highlighted and a pull down menu to open up beneath the function name. In Figure 3-5, the subfunctions associated with the File function are shown on the pull down menu.

To use a function on the pull-down menu requires what is called a “drag” operation; that is, the left mouse key is held down, and the cursor is “dragged” down the list. As the cursor points to each

name in the list, that name is also highlighted (in Figure 3-5, the New subfunction is shown highlighted). Releasing the mouse key on a highlighted name in the pull down menu carries out that subfunction and, in most cases, displays an application window. In the example used in Figure 3-5, releasing the mouse key while the New subfunction of the File function is highlighted will, in turn, open an application window which allows the user to create a new file.

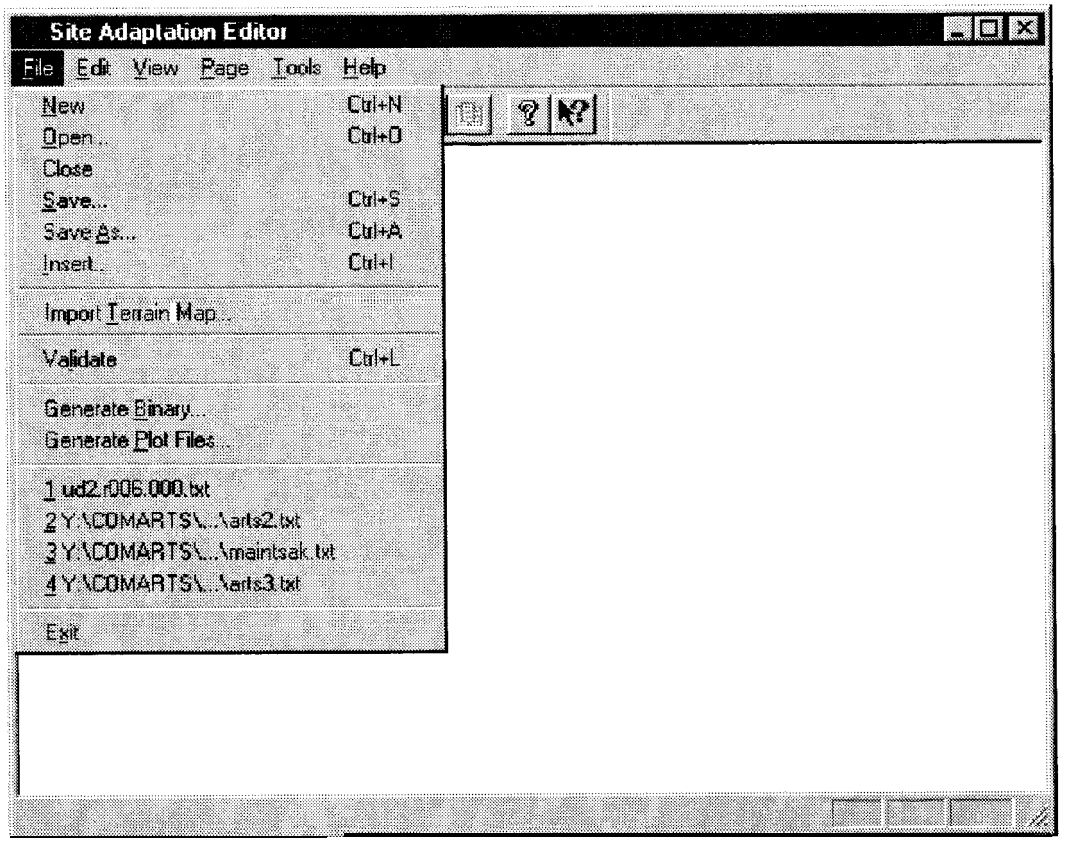


FIGURE 3-5. SAMPLE MENU BAR FUNCTIONS

3.1.4.2 Toolbars. Functions are also grouped as Toolbars at the top of an application window. Toolbars are a set of icons which allow the user to carry out specific operations by simply clicking on the icon. Since Toolbars are specific to an application window, they differ from one application window to another. In the SMC-PC procedures in Section 4, the functions available on each Toolbar are described. Figure 3-6 shows a sample toolbar.

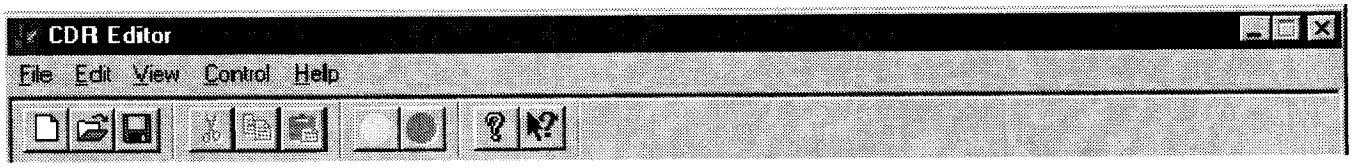


FIGURE 3-6. SAMPLE TOOLBAR

3.1.5 Mouse and Cursor

The mouse portion of the desktop is the pointing device which controls the action of the cursor on the screen. The cursor is a small white arrow, and its position is controlled by moving the mouse over any smooth surface. Move the mouse to the left, for example, and the arrow cursor will also move to the left, Move the mouse in a diagonal direction, and the arrow cursor will also move along the same diagonal. When the arrow cursor is positioned on a graphic item (these items are described in the following paragraphs), actions may be taken by simply clicking the leftmost key on the two key mouse. Some actions are accomplished by clicking the left mouse key rapidly twice. In the procedures in Section 4, the term “click” is used to describe a single click of the left mouse key, and the term “double click’ is used to describe those situations where the left mouse key should be clicked twice.

The arrow cursor is only used for the desktop or graphic items displayed within a window. Two additional cursors are used whenever text is being displayed or manipulated within a window. The arrow cursor changes into an I beam cursor (which resembles a large capital letter I) whenever it enters a display of text. When text displays may be modified by typing on the keyboard, the I beam cursor is positioned on any position where typing will be done. Clicking the left mouse key causes the editing cursor to appear. The editing cursor is a style symbol (|) which is slightly larger than the actual text. It is used to indicate the current typing position. Typing on the keyboard then causes the typed text to appear to the left of the editing cursor, which moves across the screen in a left to right fashion as typing continues.

3.1.6 Moving Windows

Windows may be easily moved to another position on the screen. Simply select the window (the Title Bar becomes blue) and then click on the Title Bar while holding down the left mouse button. The entire window then moves in the direction in which the mouse is moved. When the window is in the desired new position, releasing the mouse button causes further movement of the window to stop, and the window stays in the new position. When the window is turned into an icon and then restored, it occupies the new position on the screen.

3.1.7 Sizing Windows

Whenever the arrow cursor is positioned on the outside border of a window, it changes into a double headed arrow. This indicates that the window may have its size changed by clicking and holding down the left mouse button and moving the double headed arrow in the direction in which it is desired to change the window size (smaller or wider). An outline of the side of the window selected moves along with the cursor, which allows the user to see the size of the new window. Releasing the left mouse button causes the window to occupy the new size area. When a corner of a window is selected, the cursor becomes a double headed diagonal arrow. Clicking with the left mouse button and moving the cursor causes both the vertical and horizontal borders associated with the corner to expand or contract as the cursor is moved. This is useful for quickly making windows larger or smaller with just one operation.

3.2 BUTTONS

Actions on the SMC-PC windows are quickly carried out through the use of buttons. Buttons allow the user to quickly perform operations or make selections from lists. There are several types of buttons used on the SMC-PC, and each is used under particular conditions. These types of buttons and their use are described in the paragraphs below.

3.2.1 Push Buttons

Push buttons are displayed on many windows and they allow the user to carry out large scale actions. Push buttons may appear singly, but they usually appear as a set, arranged either in a row or column.

Push buttons are large rectangles, and they have the name of the function which they carry out printed on the push button. Clicking on a push button will carry out the action labeled on the button.

Of special note are some of the most commonly used push buttons for the ARTS IIIE applications. These push buttons are shown in Figure 3-7, and the actions associated with each of these buttons is described in the list which follows the figure.

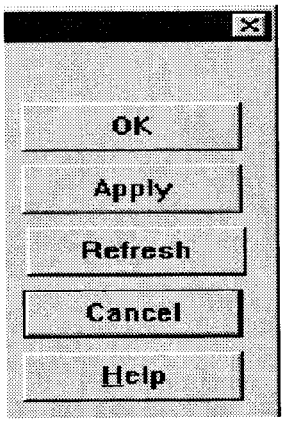


FIGURE 3-7. SAMPLE PUSH BUT-TONS

OK — Carries out the command using the data typed or selected by the user. The window is then closed.

Apply — Carries out the command using the data typed or selected by the user. The window remains open. The Apply push button is used when the user wishes to see the results of the action on the system and then change the data typed or selected and carry out the command again.

Refresh — Updates the data on the window with new data typed or selected by the user. Used in conjunction with the Apply push button. When the user is satisfied with the data on the window, either the OK or Apply push buttons may be used to carry out the window's function.

Cancel — Cancels any activity with that window and closes the window. Any commands will not be executed.

Help — Opens the Help Window, which displays information on how to use the window. The use of the Help function is explained in greater detail in Section 4.

3.2.2 Toggle Buttons

Toggle buttons are used whenever it is possible to make one or more selections. They are represented by small white squares, and clicking on a square will enter a "✓" in the square, which indicates that the option has been selected. Sample toggle buttons are shown in Figure 3-8.

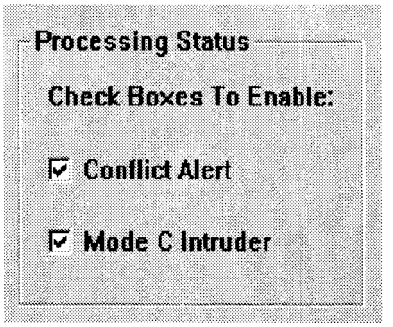


FIGURE 3-8. SAMPLE TOGGLE BUTTONS

3.2.3 Radio Buttons

Radio buttons are used whenever one, and only one action may be selected from a list of options. Radio buttons get their name from the push buttons on car radios, which may be used to select a single radio station by pushing a button on the radio. Radio buttons are indicated by small white circles. Clicking on a radio button displays a smaller black circle in the center of the white circle, indicating that the option has been selected. Any previous option will change to all white, indicating that it is no longer selected. Sample radio buttons are shown in Figure 3-9.

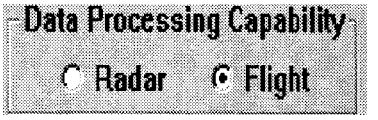


FIGURE 3-9. SAMPLE RADIO BUT-TONS

3.3 ENTERING TEXT

Text is entered through the use of text boxes which are small rectangular areas within a window where text may be entered. For many text entries, the I beam cursor may be placed anywhere in the text box and clicked. This displays the editing cursor, and text may then be typed. However, there are certain situations in which text boxes are used along with buttons to simplify the entry of text data, particularly when the text may simply be selected from a preexisting list of possible options or ranges. The paragraphs which follow describe these special purpose text boxes.

3.3.1 Drop Down Text Boxes and Typeable Text Boxes

Figure 3-10 shows a text box where data may be typed or selected from a list. These types of text boxes are called drop down text boxes because they have a downward pointing arrow to the right of the text box. This downward pointing arrow, when clicked, displays a list of possible entries. To select an item from the list, click on the item name, and the list will disappear, and the item name will be placed in the text box. Clicking on a typeable text box displays the editing cursor, as is shown in Figure 3-10. The user is free to then type a value that is not shown on the list.

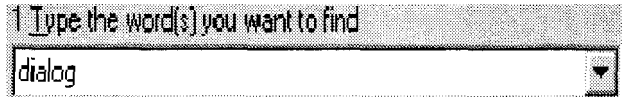


FIGURE 3-I 0. SAMPLE DROP DOWN TEXT BOX

3.3.2 Text Box With Range Buttons

Often, when data are to be entered which lie within a specific range of values, range buttons are used along with text boxes to simplify the entering of data. The range buttons are represented by triangles, pointing up and down. Clicking and holding down the left mouse button on the upward-pointing triangle increases the value displayed in the text box; similarly, clicking and holding the left mouse button on the downward pointing triangle decreases the value displayed in the option box. When the desired value is reached, simply release the left mouse button. A sample text box which uses range buttons to set a numerical value is shown in Figure 3-I 1.

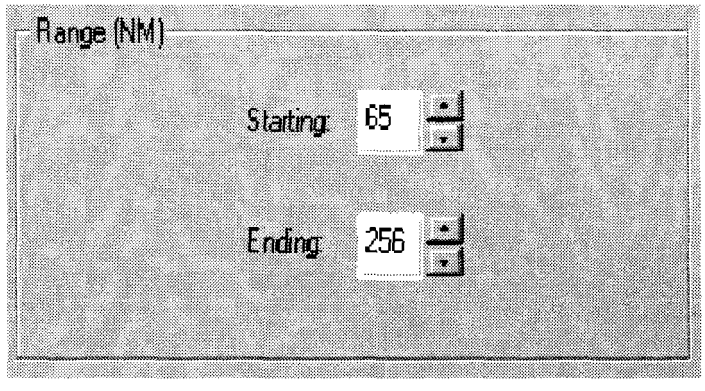


FIGURE 3-I 1. SAMPLE TEXT BOX WITH RANGE BUT-TONS

3.3.3 Text Box With Scroll Bar

Text boxes are also used to allow the user to select items from a list of possibilities. A vertical scroll bar (scroll bars are discussed in paragraph 4.1) is positioned to the right of a text list of options, and the arrow buttons may be used to scroll up or down through the list of possible options. The options themselves may employ toggle buttons or radio buttons, depending on the requirements of the software application. In Figure 3-12, an option box with scroll bar is shown. The options on this figure represent the names of Inter-facility message types, and each possible message type has a toggle button to the left. This particular toggle button, however, differs slightly from the toggle buttons shown in Figure 3-8. When toggle buttons are used in a list in a text box, a checkmark is used in place of the X to indicate whether the option has been selected or deselected. To select an item from a list of options, simple click on the option name which then highlights and selects or deselects the option. In the figure, the DM Departure message is shown being deselected; that is, the checkmark in the toggle button box has been turned off. A sample text box with scroll bar is shown in Figure 3-I 2.

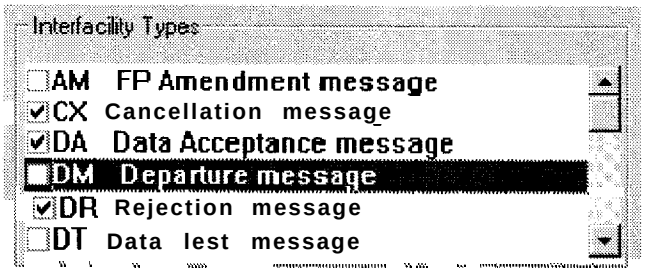


FIGURE 3-l 2. SAMPLE TEXT BOX WITH SCROLL BAR

4.0 SMC-PC USER INTERFACE DESCRIPTION

4.1 SMC-PC DESKTOP

The SMC-PC presents the user with a complete SMC desktop for using SMC-PC based applications and functions. The term Desktop refers to the user's visual working environment on the SMC-PC video display, and includes objects such as windows and icons. The left mouse Button is key to navigating the desktop, although the right mouse Button can be used instead if so configured by the user. Clicking the mouse Button on a Programs group icon opens the group and displays the collection of icons representing the functions in the group. Clicking on a function's icon initiates that function. Multiple functions can run and display windows on the SMC-PC simultaneously. Many windows have the option of being minimized (iconified) by the user. This action replaces an open window with an icon representing the application, while not interfering with or stopping program execution. Minimizing windows is a way of reducing clutter on the desktop. Various aspects of the desktop, such as color scheme and window placement, can be tailored to individual user preferences. A sample SMC-PC window, showing the terminology used in this section, is shown in Figure 4-l.

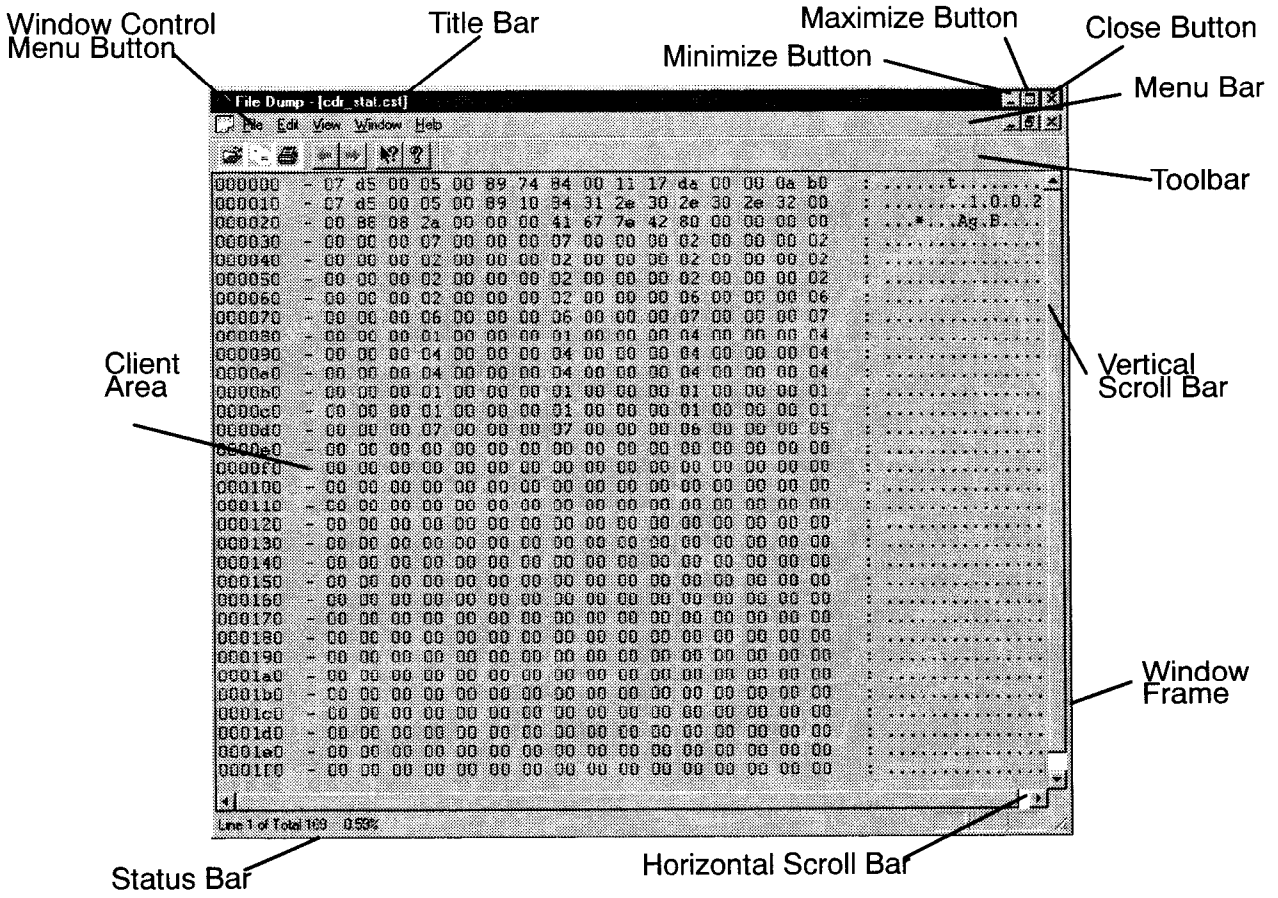


FIGURE 4-l. SAMPLE SMC-PC APPLICATION WINDOW

a. Client *Area* — Every window contains a Client Area, which is the main area or body of a window. The content of the Client Area varies widely from window to window. It can range from a simple text message to a scrollable text window to a window containing many and varied components, such as scrolled lists, text entry boxes, toggle Buttons, and selection mechanisms. The content of the Client Area is tailored to the specific function of the window.

b. Horizontal *Scroll Bar*- When more information is available than may be displayed horizontally in the Client Area, a Horizontal Scroll Bar is displayed at the bottom of the Client Area. This scroll bar contains three Buttons: a left arrow Button on the left, and a right arrow button on the right. An empty box Button may be positioned in any portion of the scroll bar between the two arrow Buttons for rapid advancement horizontally.

c. *Close, Maximize, and Minimize Buttons* — The Close, Maximize, and Minimize buttons are located at the far right of the Title Bar. Clicking the mouse Button on the Minimize Button replaces an open window with an icon, but does not stop the program from running. Clicking on the icon restores the window to its previous opened state. Clicking on the Maximize Button causes the window to be resized such that it fills the entire screen. Clicking the Maximize Button of a maximized window restores the window to its previous size and location. Clicking the close button, closes the application. If a window does not have the capability of being closed, maximized, or minimized, these Buttons do not appear on the Title Bar.

d. *Menu Bar* — Many windows contain a Menu Bar, which is a horizontal bar located near the top of a window under the Title Bar. The Buttons on a menu bar represent pull down menus. A user can click the mouse Button on a pull down menu Button to display a menu containing functions or actions that the user can choose. A menu item is selected by releasing the mouse Button when the item is highlighted. Menu items can initiate an action, toggle a setting, or cause additional windows, called dialogs, to be displayed. Many menus and menu items are standard among applications for consistency and ease of use.

e. *Status Bar* — Many windows also contain a Status Bar which is used to display helpful information to the user such as short descriptions of menu items and other timely messages and feedback. The Status Bar is typically located at the bottom of a window and, like the Toolbar, can be enabled or disabled by the user via a menu option.

f. *Tit/e Bar* — The Title Bar is located at the top of a window and contains the window's name. The Title Bar can be used to move a window to another location by pressing the left mouse Button and dragging. Double clicking on the Title Bar maximizes a window or restores it to its previous size and position. The Title Bar also indicates whether a window is currently active (able to accept keyboard and mouse input) by its color. Only one window on the desktop is active at a time, and this is generally signified by a different color Title Bar than the rest of the open windows.

g. *Too/bar* — An Application Toolbar, or Toolbar for short, is a collection of Buttons in a horizontal bar located under the Menu Bar which provides quick and convenient access to frequently used menu items. The user can enable or disable the Toolbar via a menu option.

h. *Vertical Scroll Bar* — When more information is available than may be displayed vertically in the Client Area, a Vertical Scroll Bar is displayed to the right of the Client Area. This scroll bar contains three Buttons: an up arrow Button at the top, and a down arrow at the bottom. An empty box Button may be positioned in any portion of the scroll bar between the two arrow Buttons for rapid vertical movement.

i. *Window Control Menu Button* — The Window Control Menu button is located in the leftmost part of the Title Bar. Clicking the left mouse Button on this Button brings up a menu of

choices that affect the visual elements of the window that are modifiable by the user, such as Restore, Move, Size, Minimize, Maximize, and Close. The menu options available may vary based on the functionality restrictions on a particular window. Double clicking on the Window Control Menu Button is a shortcut to closing (exiting) the window.

j. *Window Frame* — The Window Frame is the outermost rectangular boundary of a window. All windows have frames except when they are maximized and fill the entire screen. If a window is resizable, the user can change the size of the window by positioning the mouse cursor on a side or corner of the frame, pressing the left mouse Button, and dragging the mouse while the mouse Button is depressed.

An interactive Help facility is provided which allows the user to instantly obtain help on any topic by simply clicking the Help Button on any screen where it is available. This displays the Help Menu, which is shown in Figure 4-2. The Help Menu is presented with a list of index entries on which Help is available. A topic may be selected by clicking on the entry. A screen is displayed of Help information related to that particular topic.

There also are additional, specialized windows with which the user interacts.

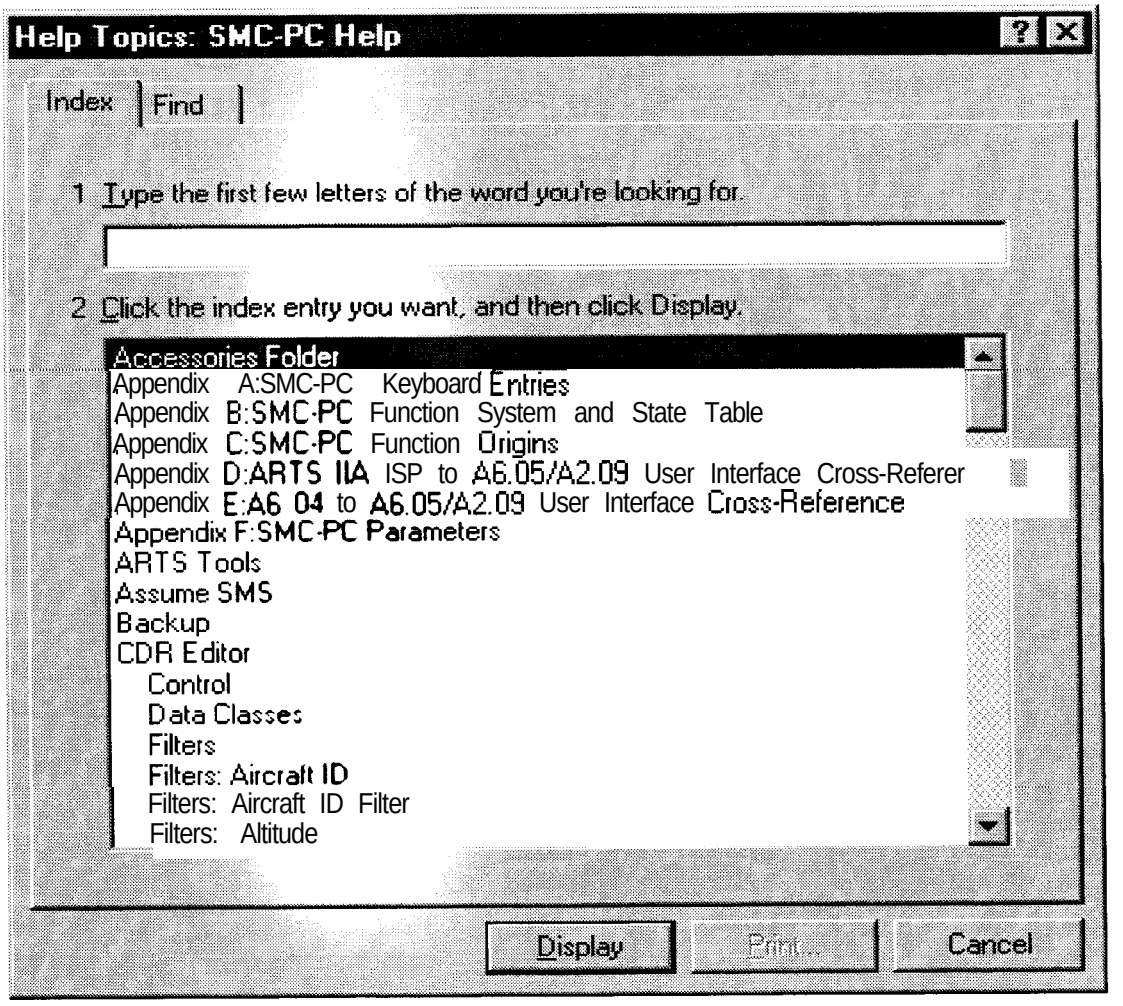


FIGURE 4-2. HELP WINDOW

4.1.1 Dialog Window

A Dialog Window is a special type of window. It is typically considered a transient window because it presents or gathers information from the user and then goes away, rather than a window that needs to be displayed for a prolonged period while the user goes through a series of operations. Due to their temporary nature, most dialog windows cannot be iconified, and many cannot be resized. A dialog window can serve as the primary window for an application, or can be supplemental to the application's primary window. It might be a simple OK message box or a complex data entry form.

There are two kinds of dialogs: modal and modeless. Modal dialogs, such as the Open File dialog, prevent the user from working elsewhere in the application until the dialog is closed. Modeless (nonmodal) dialogs allow the user to perform operations in the application while the dialog remains on the screen.

A Tabbed Dialog is a special type of dialog window. It is made up of a series of tabs which allow the user to switch between pages of information that the user can view and/or set (Figure 4-3). A tab is similar to a notebook divider, which separates topics or sections of information and facilitates easy access to a particular topic or section. A tabbed dialog can serve as the main window in a dialog based application as well as advanced applications.

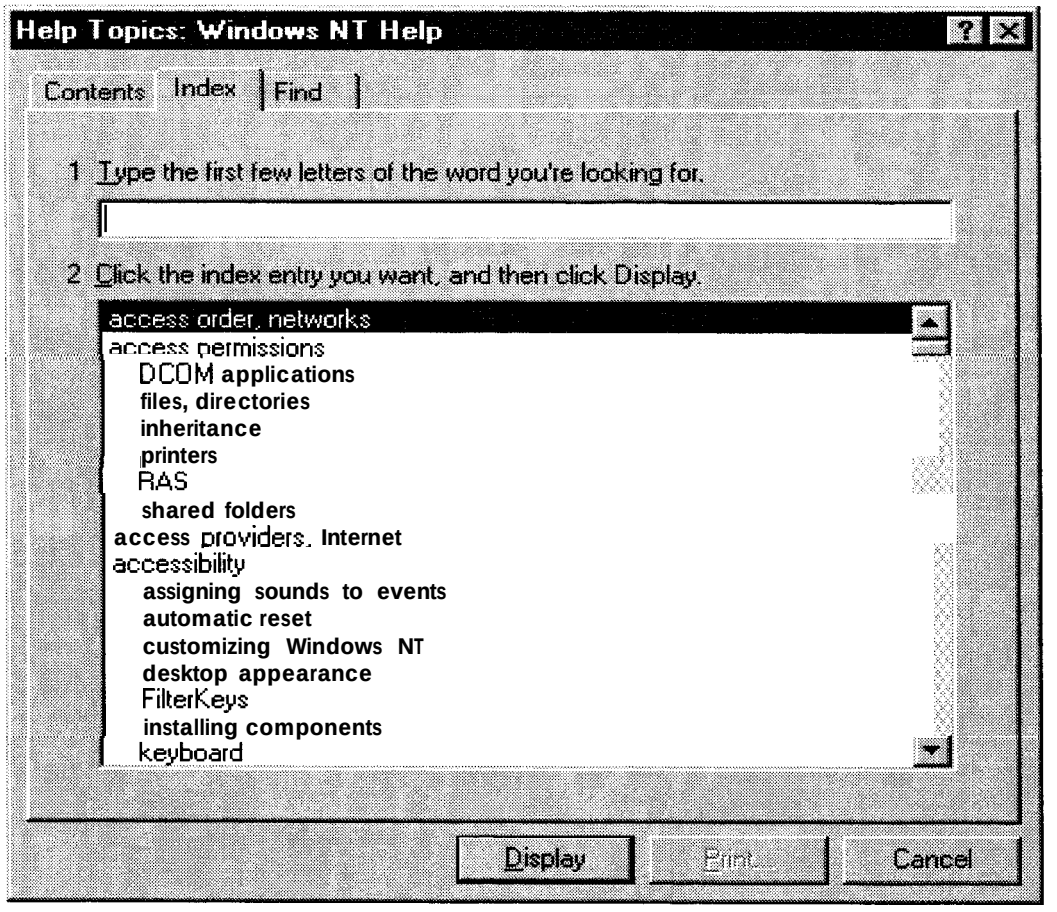


FIGURE 4-3. TABBED DIALOG WINDOW

A Splitter Window is a special type of window which is made up of two or more windows separated by a splitter bar. The System Monitor window is an example of a splitter window. The individual windows,

typically referred to as panes, each represent a separate Client Area or view. The splitter bar can be moved by the user to resize its associated panes. Applications that use a splitter window have a Split menu item under the View pull-down menu to facilitate finding and moving the splitter bar.

4.1.2 SMC-PC Desktop

The functions available at an SMC-PC are organized into functional groups within the SMC Programs folder (Figure 4-4). Six of these program groups contain ARTS specific functions. The remaining program groups are made up of COTS tools and applications. This chapter contains a section describing each of these groups and the individual functions contained in each group.

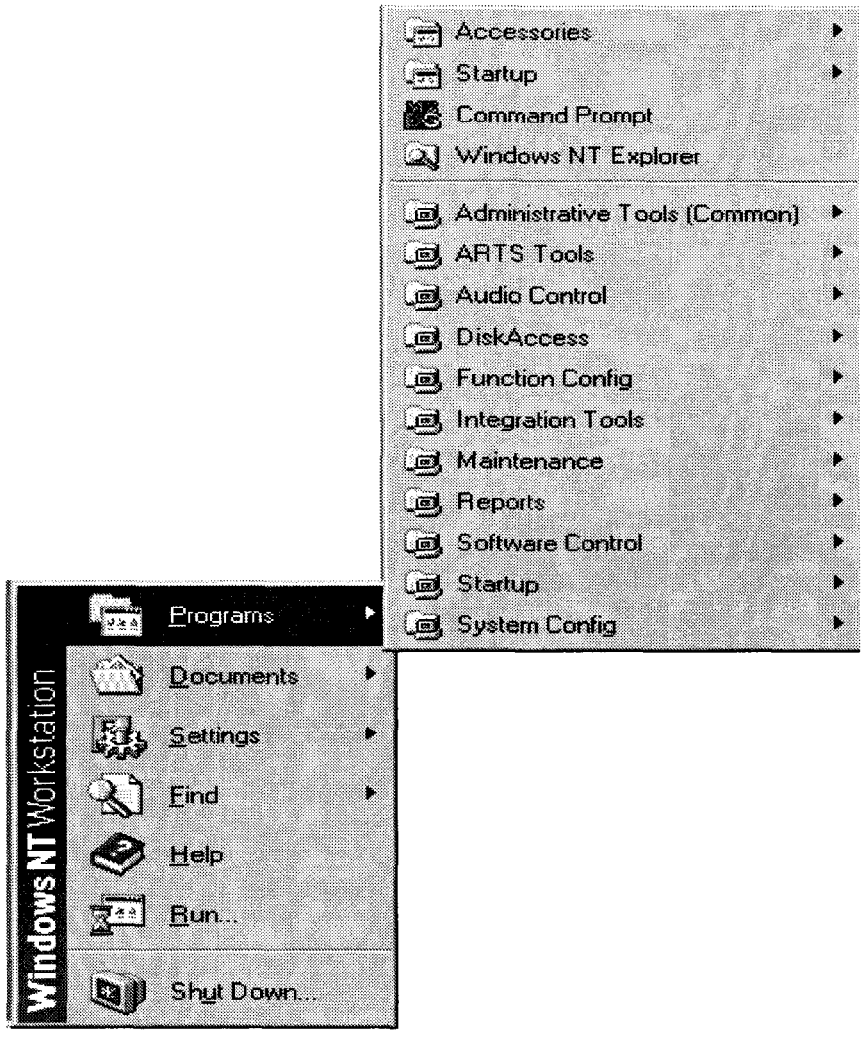


FIGURE 4-4. SMC PROGRAMS FOLDER

4.1.3 Initializing the System Console Software (SCS)

This initialization may be used after all the necessary hardware components have been initialized according to the procedures in paragraph 2-I. When these procedures are complete, one of the SMCs, as determined by the system, is the active SMC. If there are other SMCs in the system, they are

initiated as being standby or off-line. One of the SMC-PCs of the active SMC is the System Monitor Station (SMS). The other SMC-PC of the active SMC is the Non-SMS. The SMS is the main user interface into the system, via the SCS.

Each SMC-PC must initialize its own copy of the SCS. The SCS is resident on the hard drive of the SMC-PC. The following process is the same for all SMC-PCs:

a. Observe the SMC-PC displays a darkened window or a window with a Windows NT Workstation logo. In either case, there is a Begin Login dialog window present with the instructions to "Press Ctrl t Alt + Del to log on".

b. To log on, hold down the Ctrl and Alt keys and simultaneously press the Delete key.

c. Observe a Login Information dialog window. The Username and Password must be entered in this window. These parameters must have been set up in advance by the System Administrator to allow only authorized persons to be able to access the system. Type in the correct responses. In some cases, if the parameters were entered using capital letters, the user must also use capitals. If a previous Username parameters are listed, block/delete and type in the correct Username, From, and Password. Select OK or <Enter> from the keyboard.

d. Also observe the System Monitor window (paragraph 4.5.7, Figure 4-125) and the Desktop Toolbar (paragraph 4.5.13, Figure 4-138). The Desktop Toolbar indicates the current state of the system (Normal, Alternate, Backup, or Broadband) and the number and state of the entering SMC-PC (PC number and SMS/Non-SMS (if PC is connected to the active SMC).

e. To execute most SMC-PC functions, the entering PC must be the SMS. Refer to paragraph 4.3.6 procedures to change states of the entering PC. Also refer to Appendix B to reference the SMC-PC state necessary to execute the various functions of the ARTS system. Refer to Appendix J for menu and display messages that are responses to entries made at the SMS.

f. To traverse to the Program group: click Start; move cursor to Programs, move cursor to desired Program group.

4.2 SOFTWARE CONTROL

The Software Control group contains functions which support the initialization and software configuration of the ARTS system.

a. Function Configuration operation:

1. Click Software Control in the Programs group (Figure 4-4).

2. Observe the Software Control program group (Figure 4-5).

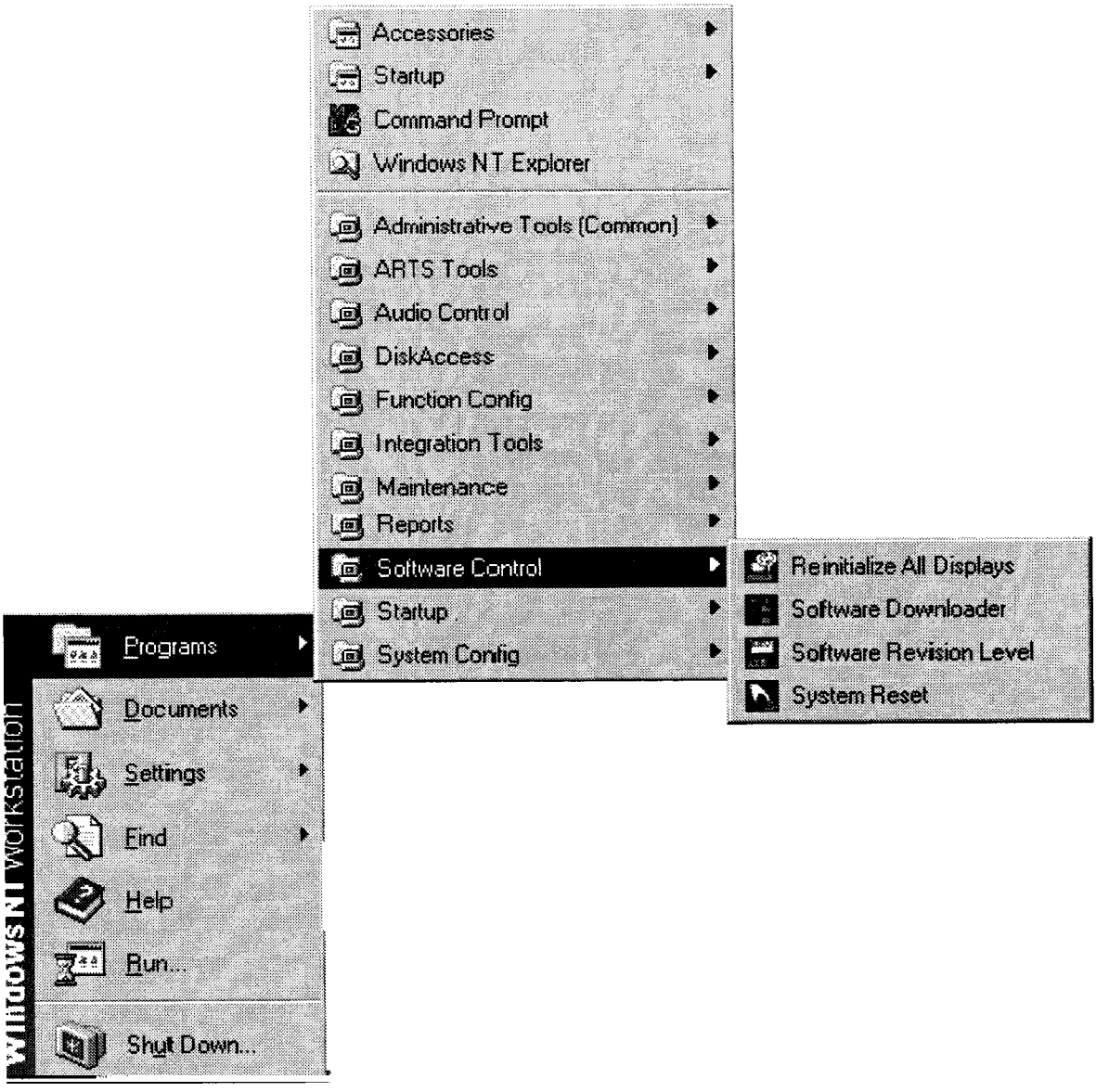


FIGURE 4-5. SOFTWARE CONTROL WINDOW

4.2.1 System Reset

System Reset allows the user to request a system reset of all SMC, TP, CP, AGW, and RDM chassis in an ARTS IIIE configuration.

a. Special Notes:

1. An SMC-PC in the Non-SMS or Host Down state cannot request this function.

b. System Reset operation:

1. Click System Reset.

2. Observe the System Reset confirmation window (see Figure 4-6).

3. Select either the Cold Start radio button to reset the system without the recovery of Critical Data or the Warm Start radio button to reset the system with the recovery of Critical Data. Check the "Reset All SMCs" check box to include the SMC chassis in the reset. Check the "Reset All ACDs" check box to include the ACDs in the reset.

4. Click OK to continue the System Reset and exit or Cancel to exit without resetting the system.

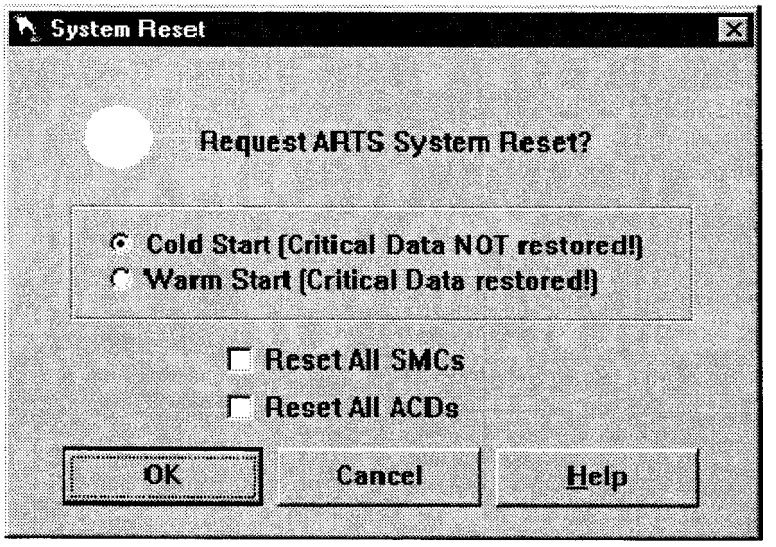


FIGURE 4-6. SYSTEM RESET DIALOG BOX

4.2.2 Reinitialize All Displays

Reinitialize All Displays allows the user to request the reinitialization of all displays.

a. Special Notes:

1. An SMC-PC in the Non-SMS or Host Down state cannot request this function.

b. Reinitialize All Displays operation:

1. Double click the Reinitialize All Displays icon (Figure 4-5).

2. Observe the Reinitialize Displays confirmation window (Figure 4-7).

3. Click OK to the Reinitialize Displays and exit or Cancel to exit the operation without reinitializing.

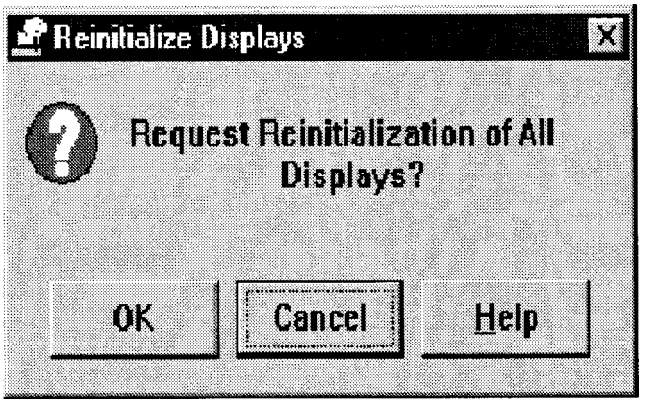


FIGURE 4-7. REINITIALIZE DISPLAYS DIALOG BOX

4.2.3 **Software Downloader**

Software Downloader controls the configuration of program and adaptation files for the microprocessor chassis connected to the same network as the SMC-PC host processor (SMC). When this function is initiated, a check is made to determine the system configuration type, and the appropriate menus and Toolbar buttons are then displayed.

When the Software Downloader is initiated, the client area of the application window contains a Network Identification (NID) table, and Chassis Image Selection and Selected Images areas. The NID table contains a grid of all possible device NIDs representing the target chassis to be downloaded. Initially, no NIDs are selected. The user can select individual NIDs to download by clicking the mouse in the NIDs cell, and can select groups of NIDs via the Toolbar buttons or menu selections. The Chassis Image Selection and Selected Image areas allow the user to enter the various file requirements for each chassis type. Since filenames must correspond to software conventions, SCS software copies the user-selected version to the proper name and download directory. For new style chassis, the user can specify the disk to which the file(s) should be downloaded (copied) on that chassis. If common software or site adaptation files are selected, the file is applied to all other selected chassis which share that file. This feature prevents the download of different versions of files in one download session.

a. Special Notes:

1. Do not attempt to download adaptation to the active partition.

2. The SMC chassis should be in an offline state, the function select switch of the chassis to be downloaded should be in position C or 5, and the SMC-PC should be offline.

3. Downloading should be performed on the non-operational network.

4. All files used for downloading chassis can be taken from a directory on the SMC hard disks, the SMC-PC or PD-PC hard disk, floppy disk, or CD-ROM.

5. Files for following images can be specified for the following chassis types:

Chassis Type	Images
AGW	fma_lan744, fma744, sssd, startup, sitedata.m68.gz, maint-edp, dps_fma, anoml, anom2, anom3, fast, sma, amass, sma-a.
CP	cps, sifs_ra, sifs_rc, maint-edp, sssd, startup, go-vcom, vc_prof.bin, vcom.bin, vcom-vld, sitedata.m68.gz.
TP	tps, sifs_rs, sifs_rt, maint-edp, sssd, startup, go-vcom, vc_prof.bin, vcom.bin, vcom-vld, sitedata.m68.gz.
SMC	smon, maint-edp, sssd, startup, sitedata.m68.gz
SG	sifs_rp, sss_lan750
FDAD	dps_fdp, dps_sia, sss_lan750
ACD	dps_acd, sssd_ppc, startup.ppc, startx, go-vcom, gox, gox.30bit, pci_wpen, vcom.bin, vcom_vid, snote, sitedata.m68.gz
RDM	dps_rdm, maint-edp, sssd, startup, go-vcom, vc_prof.bin, vcom.bin, vcom-vld, sitedata.m68.gz.
LBP	dps_lbp, sss_lan750
SMC-PC	sitedata.i86
FDE	artselog.dll, dps_fde.exe, setup.exe, sitedata.i86, SSService.exe

6. If common software or Site Adaptation files are selected, the file is applied to all other selected chassis which share that file.

7. If the user attempts to select a target for download in the active state, a warning dialog is displayed.

b. Menu Bar Functions:

File Menu

Exit	Exits the Software Downloader program and closes all associated windows after giving the user the opportunity to save any changes.
Selections Menu	Allows the user to specify the target chassis to be downloaded. As each target is selected, the client area grid is updated to indicate the target(s) that have been selected for downloading.
All CPs	Selects all CP NIDs as download targets.
All TPs	Selects all TP NIDs as download targets.
All SMCs	Selects all SMC NIDs as download targets.
All RDMs	Selects all RDM NIDs as download targets.

All AGWs	Selects all AGW NIDs as download targets.
All ACDs	Selects all ACD NIDs as download targets.
All SGs	Selects all SG NIDs as download targets.
All FDPs	Selects all FDP NIDs as download targets.
All LBPs	Selects all LBP NIDs as download targets.
All FDEs	Selects all FDE NIDs as download targets.
All PCs	Selects all SMC-PC NIDs as site adaptation download targets.
Clear All	Clears all NID selections.
All Configured	Selects all configured NIDs as download targets.

Control Menu

Download	Starts the download process.
Request Status	Requests the status from each target chassis after download completion. This status is displayed in the NID grid and includes the EEPROM checksum, RAM checksum, and write protect switch as applicable to the EEPROM chassis style.
Burn EEPROM	Burns the EEPROM of selected NID(s) of the old style chassis.
Execute	Directs the selected NID(s) to do a software reset and initiate the operational program loaded into RAM. This command is only available for SGs, FDADs, and LBPs.
Reset	Directs the selected NID(s) to do a software reset.
Maps	Downloads selected maps.
Load OS	Downloads operating system and Diagnostics.
Burn Flash	Burn Flash on TP, CP, SMC, RDM, AGW, ACD.

View Menu

Toolbar	Toggles the Toolbar between displayed and hidden.
Status Bar	Toggles the Status Bar between displayed and hidden.

c. Toolbar Functions:

CP Button	Selects all CP NIDs as download targets.
TP Button	Selects all TP NIDs as download targets.
SM Button	Selects all SMC NIDs as download targets.
RD Button	Selects all RDM NIDs as download targets.

AG Button	Selects all AGW NIDs as download targets.
AC Button	Selects all ACD NIDs as download targets.
SG Button	Selects all SG NIDs as download targets.
FD Button	Selects all FDP NIDs as download targets.
LB Button	Selects all LBP NIDs as download targets.
FE Button	Selects all FDE NIDs as download targets.
PC Button	Selects all PC NIDs as download targets.
Erase Button	Clears all NID selections.
World Button	Selects all NIDs as download targets.
DL Button	Starts the download process.
RQ Button	Requests the status from each target chassis after download completion. This status is displayed in the NID grid and includes the EEPROM checksum, RAM checksum, and write protect switch as applicable to the EEPROM chassis style.
BE Button	Burns the EEPROM of selected NID(s) of the old style chassis.
EX Button	Directs the selected NID(s) to do a software reset and initiate the operational program loaded into RAM. This command is only available for SGs, FDADs, and LBPs.
RS Button	Directs the selected NID(s) to do a software reset.
DM Button	Downloads maps.
OS Button	Downloads operating system and diagnostics
BF Button	Burns Flash on TP, CP, SMC, RDM, AGW, ACD
PF Button	Download PPC files.

d. Software Download operation:

1. Click Software Downloader (Figure 4-5).
2. Observe the Software Downloader window (Figure 4-8).
3. Observe download status in the Software Downloader Status box. If function is not valid on current SMC-PC state (SMS must be offline) an error message dialog box appears (Figure 4-8A).
4. To select/deselect individual NID(s) to receive download images:
   (a) Place the cursor in individual grid location(s), in the Selection Table, for a specific NID(s) and click left mouse button.
   (b) Observe the specific NID for that location turns blue.
   (c) Selections may be deselected by clicking the same grid location. Notice the grid location returns to previous state.

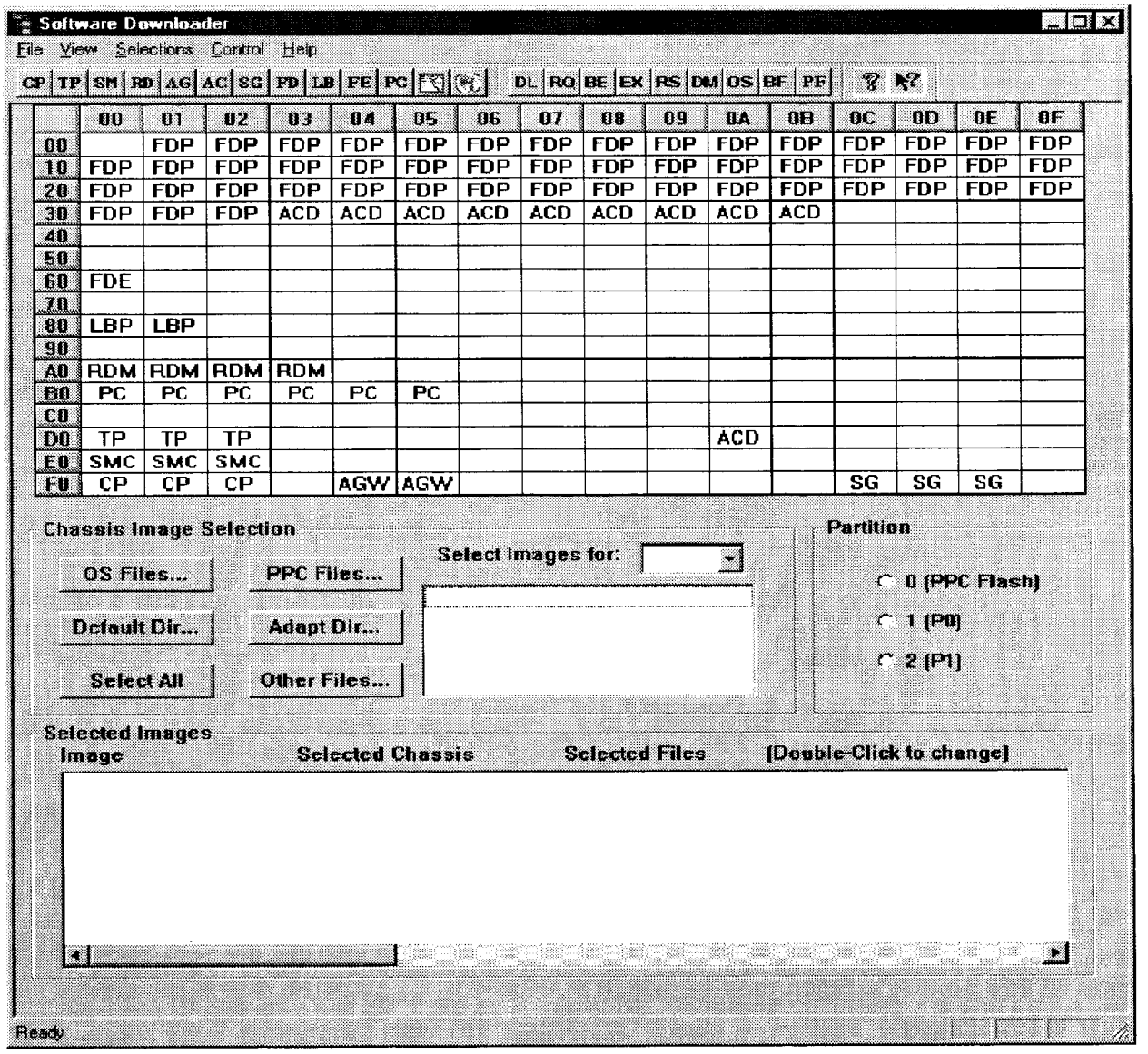


FIGURE 4-8. SOFTWARE DOWNLOADER WINDOW

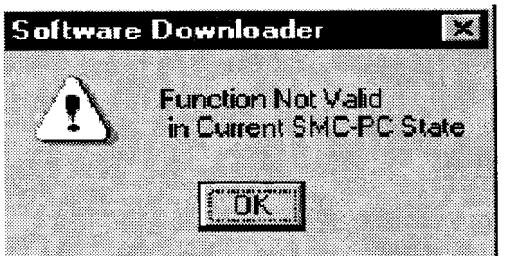


FIGURE 4-8A. ERROR MESSAGE DIALOG BOX

5. To select/deselect a group of NIDs to receive download images:

   (a) Select Selections/All CPs, All TPs, SMCs, etc., or click on the Toolbar icon (CP, TP, SMC, etc.) which defines the group(s) of chassis to select and/or,

   (b) Click on the grid column or row to select all chassis within that column or row.

   (c) Observe with selections, icon, column, or row selected, the selected grid locations turn blue.

   (d) Selections may be deselected by clicking the same icon, column, or row or,

   (e) Select Selections/Clear All.

6. To select download images:

   (a) Select the chassis type from the Select Images for drop-down list in the Chassis Image Selection area appropriate for this download operation.

      (1) Example 1: If NID FO (CPO) were selected in step 3, the CP would be selected.

      (2) Example 2: If NID 80 and 81 (LBPO and LBP1) were selected in step 3, the LBP would be selected.

   (b) Observe a list of image names appears in the Select Images box (each chassis type has an individual list).

      (1) Example 1: Observe files: CPS, GO-VCOM, MAINT-EDP, SIFS_RA, SIFS_RC, SSSD, STARTUP, SITEDATA.M68.GZ, VC_PROF.BIN, VCOM_VLD.

      (2) Example 2: Observe files: DPS-LBP and SSS_LAN750

   (c) In the Select images box, click on all files to be downloaded. Selected files are highlighted in blue (not all files need to be selected).

      (1) Example 1: Select CPS, MAINT_EDP and SSSD

      (2) Example 2: Select DPS-LBP and SSS_LAN750

   (d) To automatically select all images for all chassis types selected in the NID Grid, click the Select All button.

   (e) Observe the selected files that appear in the Selected Images box are listed in alphabetic order, as well as, the Selected Chassis designator.

7. To select where the download files are to be copied:

   (a) Click O(PPC Flash), 1 (p0), or 2(p1) in the partition box.

      (1) Example 1: Click on 1 (p0).

      (2) Example 2: No action necessary because the destination for the old style chassis can only load to the RAM of that chassis.

8. To change the file to be downloaded:

(a) Double click the file image position in the Selected Images box.

(b) Observe an Open selection window.

(c) Double click on the drive, pathnames until the new filename is highlighted.

(d) Click OK to change the filename (full path, software revision date, and time appear in the Selected images box) or Cancel to exit without change.

(e) If the images are to be downloaded from the same directory:

(1) Click the Default Dir button in the Chassis Image Selection area and select the default directory from which to download the images.

(2) Click OK button.

(3) Click the Adapt Dir button and select the default directory from which the adaptation file(s) will be copied.

9. To start the download process:

(a) Select Control/Download or click the DL icon in the Toolbar.

(b) If the chassis is configured operational:

(1) Observe Warning box (Figure 4-9).

(2) Click OK to continue or Cancel to discontinue.

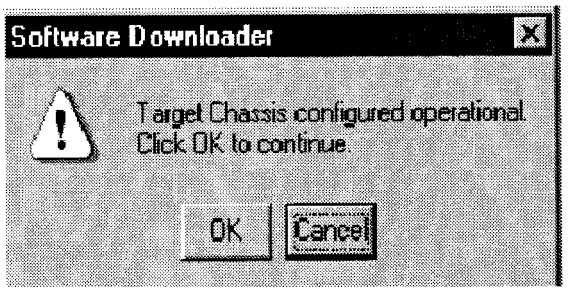


FIGURE 4-9. OPERATIONAL CHASSIS WARNING BOX

(c) Observe connection and copying status are displayed in the Software Downloader Status Dialog Box (Figure 4-10).

(d) Click OK or clear.

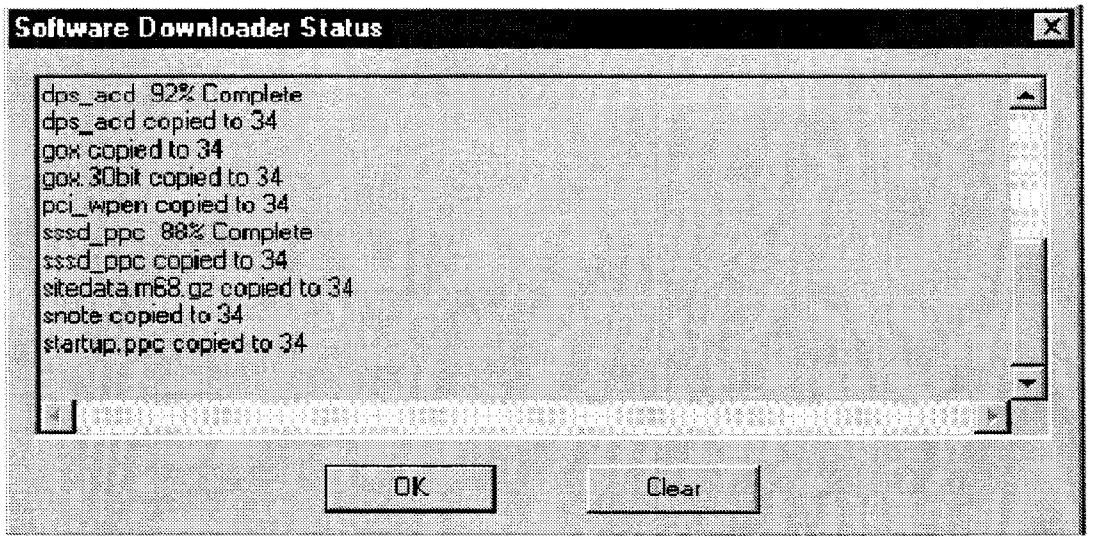


FIGURE 4-l 0. SOFTWARE DOWNLOADER STATUS DIALOG BOX

10. To request download status:

    (a) Select Control/Request Status or click the RQ icon in the Toolbar.

    (b) Observe the status from each old style chassis after download completion.

    (c) Observe the pass/fail indication(s) in the grid at the NID position(s) for the new style chassis.

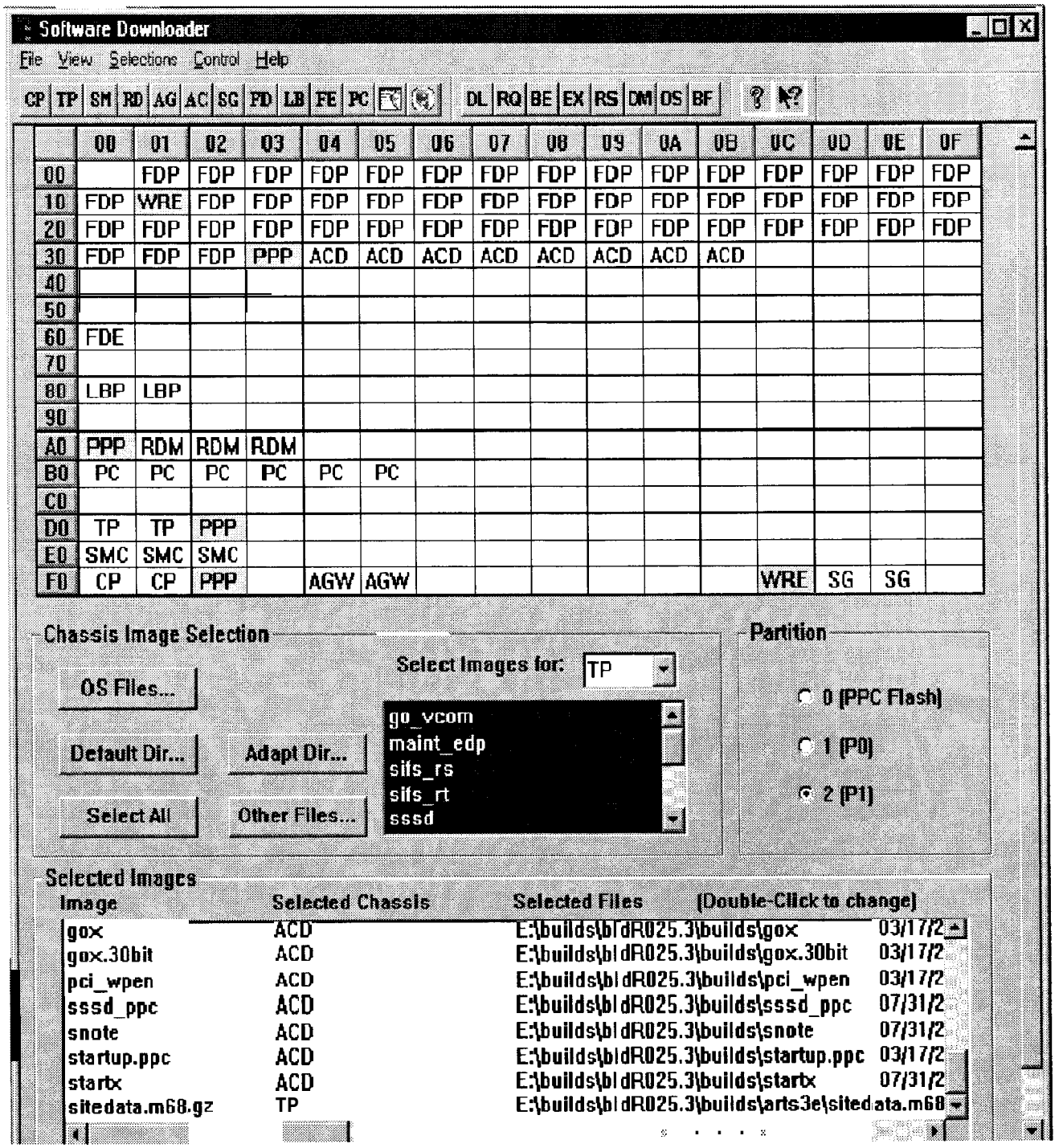
    (d) Download completion status indications: (Figure 4-11).

    Old style chassis: a three-character indication in the grid at the NID position.

    EEPROM status: W = good checksum C = checksum error
    RAM status: R = good checksum C = checksum error
    EEPROM WRPROT: E = write enabled N = write disabled

    The user would look for WRE to indicate a good download. A WRN indication would indicate that the Write Protect switch on the DVME-503 board needs to be placed in the enabled position (switch placed up or off) if any write to EEPROM is to be executed.

    Green indicates a successful download.
    Red indicates a download failure.



	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
00		FDP	FDP	FDP	FDP	FDP	FDP	FDP	FDP	FDP	FDP	FDP	FDP	FDP	FDP	FDP
10	FDP	WRE	FDP	FDP	FDP	FDP	FDP	FDP	FDP	FDP	FDP	FDP	FDP	FDP	FDP	FDP
20	FDP	FDP	FDP	FDP	FDP	FDP	FDP	FDP	FDP	FDP	FDP	FDP	FDP	FDP	FDP	FDP
30	FDP	FDP	FDP	PPP	ACD	ACD	ACD	ACD	ACD	ACD	ACD	ACD				
40																
50																
60	FDE															
70																
80	LBP	LBP														
90																
A0	PPP	RDM	RDM	RDM												
B0	PC	PC	PC	PC	PC	PC										
C0																
D0	TP	TP	PPP													
E0	SMC	SMC	SMC													
F0	CP	CP	PPP		AGW	AGW							WRE	SG	SG	

FIGURE 4-l 1. DOWNLOAD COMPLETION RESULTS WINDOW

(3) New style chassis: a three-character indication in the grid at the NID position.

PPP = green indication that the download passes.
FFF = red indication that the download fails.

11. To burn the downloaded files into Flash/EEPROM:

(a) Example 1: The new style chassis (CP, TP, SMC, AGW, ACD, RDM) can have its Flash memory downloaded from HDO or HD1. Select 1 (p0), or 2(p1) from the partition box then click BF on the toolbar.

NOTE

Set selected chassis thumbwheel switches to the "C" position and press the Reset button.

(1) Observe a Burn Flash Memory requested Warning window is displayed.

(2) Click OK.

(3) Observe Burn Status is displayed in the Software Download Status dialog box.

When the Burn process is completed and passes, the grid location for the NID is green with a "PPP".

If the Burn process fails, the grid location for the NID is red with a "FFF".

(b) Example 2: The user may want to execute the software before burning the downloaded data as a debug tool, therefore leaving the existing program data in EEPROM. Select Control/Execute or click the EX icon in the Toolbar (not a requirement). If this step is done, and it executes correctly, the user should download once more to this old style chassis.

(1) The old style chassis burns the downloaded data from its RAM to EEPROM. Select Control/Burn EEPROM or click the BE icon in the Toolbar.

(2) If the chassis is configured operational:

Observe Warning box.

Click OK to continue or Cancel to discontinue.

(3) Observe a Write EEPROM Requested Warning window is displayed.

Confirm the request by clicking OK or Cancel to discontinue.

(4) Observe the Burn Status is displayed in the Download Status dialog box.

Observe that a percent complete indicator is displayed periodically in the NID grid, which indicates the percentage complete of the Burn process.

When the Burn process is completed and passes, the grid location for the NID is green with a "PPP".

If the Burn process fails, the grid location for the NID is red with a "FFF".

12. To download maps:

(a) Select Download Maps or click the DM button in the Toolbar.

(b) Observe the Map Downloader Dialogue Box (Example in Figure 4-11A).

(c) Select the directory where the map files reside.

(d) Select the map file(s) to be downloaded.

(e) Click OK.

(f) Observe connection and copying status are displayed in the Software Downloader.

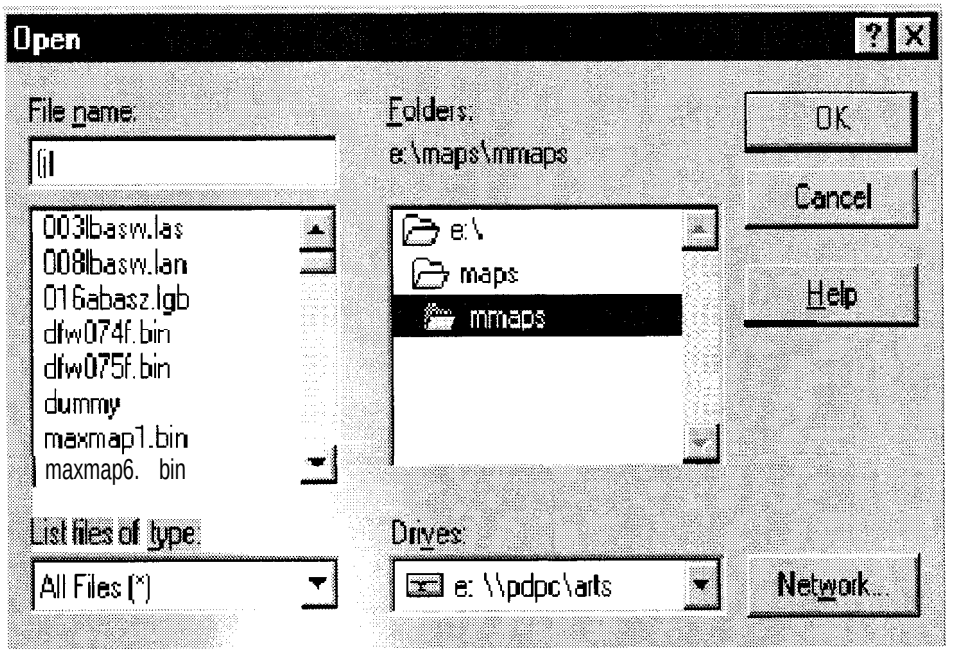


FIGURE 4-11A. MAP DOWNLOADER DIALOG BOX

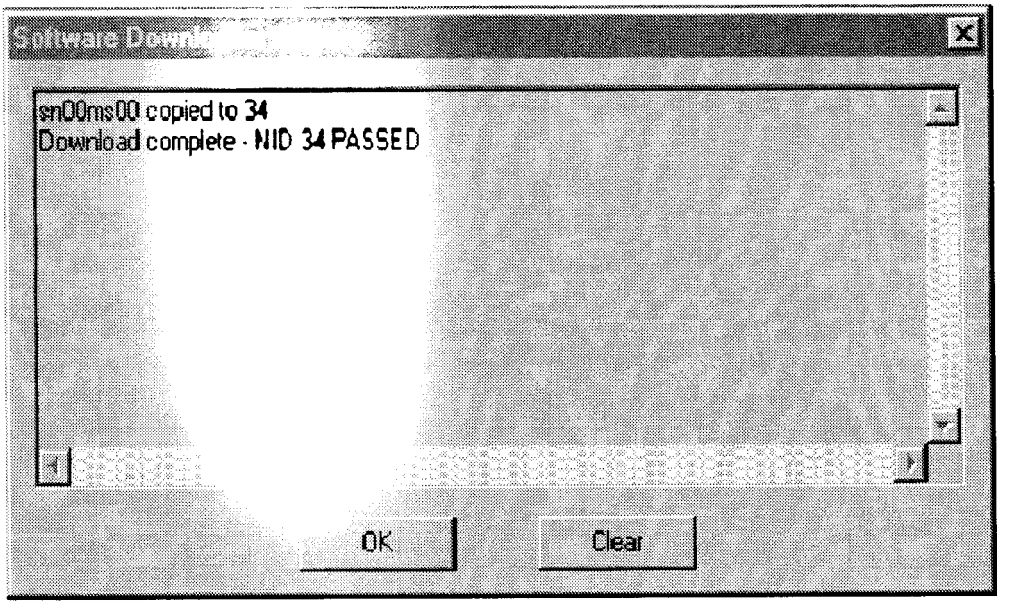


FIGURE 4-l 1 B. SOFTWARE DOWNLOADER STATUS DIALOG BOX (MAP EXAMPLE)

13. To reset the downloaded NIDs:

    (a) Select Control/Reset or click the RS icon in the Toolbar.

14. To load the operational program:

    (a) Set selected chassis thumbwheel switches to the position where the operational software will be loaded from.

    (b) Perform a cold start by selecting the cold start radio button in the System Reset window. (For more information, see paragraph 4.2.1).

15. To download PPC miscellaneous files:

    (a) Select the desired files using the “PPC Misc.” button.

    (b) Initiate the download with the PF button.

16. To exit, select File/Exit.

4.2.4 Software Revision Level

Software Revision Level allows the user to view and/or print the Software Version Report for all processors.

a. Special Notes:

    1. An SMC-PC in the Host Down state cannot request this function.

    2. The report may be printed on user request.

b. Menu Bar Functions:

File Menu

Print	Prints the currently active file.
Print Setup	Allows the user to change settings for next printing.
Exit	Exits the Software Revision and closes all associated windows.

View Menu

Toolbar	Toggles the Toolbar between displayed and hidden.
Status Bar	Toggles the Status Bar between displayed and hidden.
Sort by NID	
Sort by Revision	
Sort by Target	
Sort by Date	
Sort by Time	
Sort by Instance	

Control Menu

Start	Starts the Software Revision display report process.
View All	Allows the user to view the report from all chassis types (SMC, CP, TP, AGW, RDM, SG, FDAD, LBP, ACD, and SMC PC).

c. Toolbar Functions:

Printer	Prints the currently active file.
Green Circle	Starts the Software Revision display report process.
NID Selection	Allows the user to select the report from a specific NID.
All	Allows the user to view the report from all chassis types (SMC, CP, TP, AGW, RDM, SG, FDAD, LBP, ACD, and SMC PC).

d. Software Revision Level operation:

1. Click Software Revision Level (Figure 4-5).

2. Observe the Software Revision Level window (Figure 4-12).

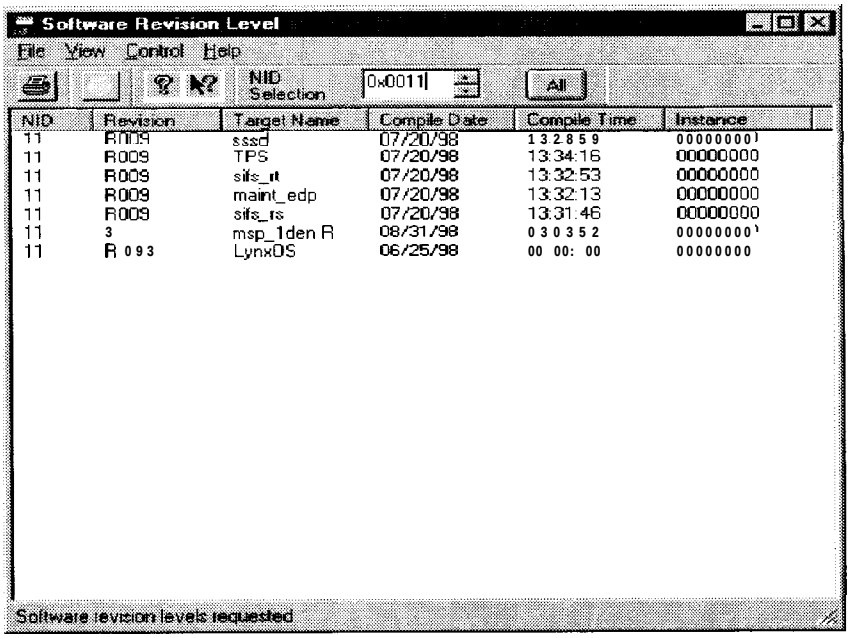


FIGURE 4-l 2. SOFTWARE REVISION LEVEL WINDOW

3. To select a specific NID:

   (a) In the NID Selection box, click on the up/down arrows until the window contains the desired NID number, or

   (b) Place the cursor in the NID Selection box, delete previous contents, and type an NID number, or

(c) Place the cursor in the NID Selection box, and hold the left mouse button while selecting/blocking existing contents. Type an NID number over the highlighted contents.

(d) Select Control/Start or click the green circle in the Toolbar.

(e) Observe the Software Revision information appears in the respective columns in the client area (NID number, Revision Identifier, Target Name, Compile Date, Compile Time, Instance).

(f) To horizontally expand the columns:

(1) Place the cursor in title row of the table.

(2) Observe it changes shape when it crosses a column boundary. Place the cursor on a column boundary line.

(3) Hold the right mouse button down and drag to the right to expand the column.

(g) Selected NID data may now be sorted, reviewed, saved, and/or printed.

4. To select all NIDs:

(a) Select Control/View All or click on the All button in the Toolbar.

(b) Select Control/Start or click on the green circle in the Toolbar.

(c) Observe all Software Revisions for all NIDs appear in the client area.

(d) Selected NID data may now be sorted, reviewed, saved, and/or printed.

5. To sort selected data:

(a) Select View/Sort by (Column Title) or click on the column header.

(b) Observe data in selected column is sorted by alpha (a-z) or numeric (0-9).

(c) Selected data may now be reviewed, saved, and/or printed.

6. To exit, select File/Exit.

4.3 SYSTEM CONFIGURATION

The System Config group supports the viewing and/or the modification of the system configuration parameters and equipment.

a. System Configuration operation:

1. Click System Config in the Programs group (Figure **4-4).**

2. Observe the System Config program group (Figure 4-13).

FIGURE 4-13. SYSTEM CONFIGURATION GROUP

4.3.1 Processor Configuration

Processor Config allows the user to reconfigure and/or reset the SMC, TP, and CP chassis.

a. Special Notes:

1. An SMC-PC in the Non-SMS or Host Down state cannot request this function.
2. CP, TP, and AGW state changes are restricted to the SMS.
3. A request to change the state of a processor that is not available will be rejected.
4. A confirmation prompt is displayed if a user request would reduce the ARTS operational system below the minimum required configuration.
5. The reset function(s) (Reset All CPs, TPs, SMCs, AGWs, or RDMs) within this window will create a cold start without critical data recovery.
6. Reconfigure CP from Backup is valid from the SMS only when the system is in Backup mode. This command causes the system mode to change from Backup mode to the highest supportable mode.

b. Processor Configuration operation:

1. Click Processor Config (Figure 4-13).
2. Observe the Processor Config window (Figure 4-14).

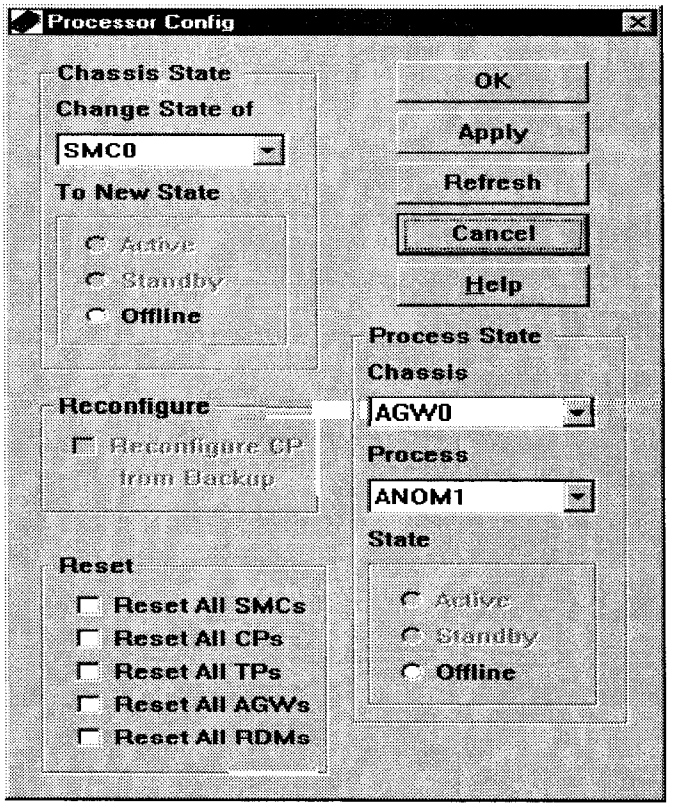


FIGURE 4-I 4. PROCESSOR CONFIGURATION WINDOW

3. State Change:

(a) Select the scroll bar until the Change State of box indicates the processor to change.

(b) Select processor (SMCO, CPO, etc.) from Chassis State Drop Down text box.

(c) Select appropriate state for selected processor in the Available States box to Active, Standby, or Off-line.

(d) When a change will pull down the last remaining CP, TP, SMC, AGW, or RDMs chassis from Active to Off-line, a warning box is displayed (Figure 4-15).

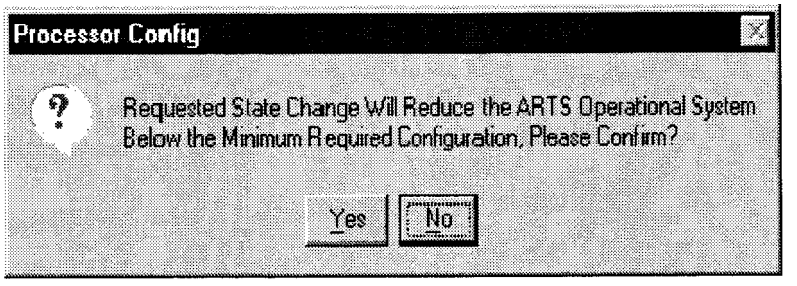


FIGURE 4-I 5. REQUEST STATE CHANGE DIALOG BOX

(e) Confirm the request by clicking Yes or go back to the dialog to clear the requested change by clicking No.

(f) Click OK to complete the configuration change and exit or Cancel to exit without change.

(g) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

4. Reconfigure:

(a) Click on the box to Reconfigure CP from Backup (Figure 4-14).

(b) Click OK to initiate the configuration change and exit or cancel to exit without change.

(c) Click Apply to execute the function and not exit and/or refresh to set selection box to original status.

5. Reset:

(a) Click on the appropriate box to reset all CPs, TPs, SMCs, AGWs, or RDMs (Figure 4-I 4).

(b) If a reset of a chassis is requested, a confirmation box is displayed. The user may select Yes to confirm or No to go back to the dialog (Figure 4-16).

(c) Click OK to initiate the reset and exit or Cancel to exit without reset.

(d) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

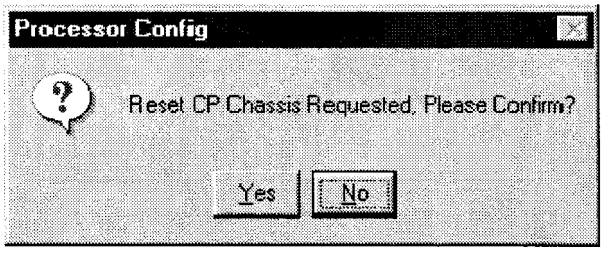


FIGURE 4-l 6. RESET REQUEST DIALOG BOX

6. Process State (chassis with configurable process status):

   (a) Select chassis from chassis box.

   (b) Select process from process box.

   (c) Select state.

   (d) Click OK or Apply.

4.3.2 Sensor Config

Sensor Config allows a user to view and/or modify the sensor/segment masking settings, automatic switching settings, and radar overload sensing settings.

a. Special Notes:

   1. An SMC-PC in the Non-SMS or Host Down State cannot request this function.

   2. If Auto Switch is enabled, Lock On for that sensor is disabled.

   3. If Auto Switch is enabled, four paths (between SRAPs and SGs) are possible to resolve any failures.

   4. Over Load sensing and protection is performed on a sector basis, reporting to the display(s) is done on a quadrant basis.

   5. Since pseudo sensors cannot be configured with any of these functions, they will not appear as an option.

b. Sensor Configuration operation:

   1. Click Sensor Config (Figure 4-13).

   2. Observe the Sensor Configuration window (Figure 4-17).

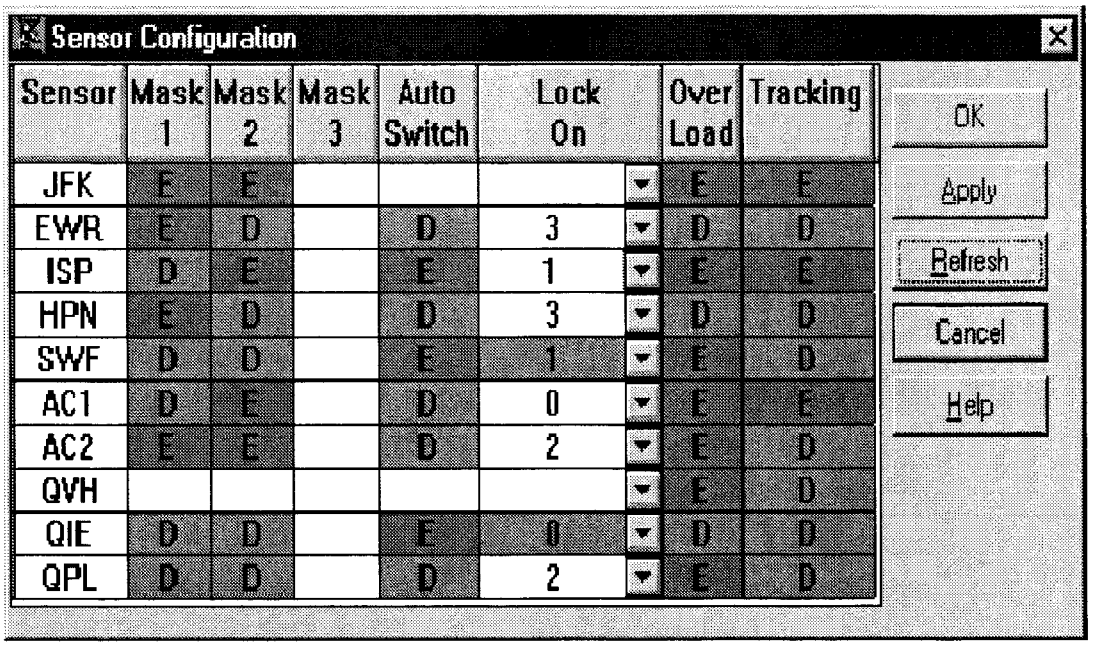


FIGURE 4-I 7. SENSOR CONFIGURATION WINDOW

3. Observe multiple columns which are modifiable by the user.

4. To change the mask configurations for selected sensor(s):

   (a) Observe the status: red with D indicates disabled, green with E indicates enabled, white indicates not configured.

   (b) Place the cursor in any of the mask boxes and click to change the current status.

   (c) Click OK to change the mask setting(s) and exit or Cancel to exit without change.

   (d) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

5. To change the Auto Switch capability:

   (a) Observe the status: white indicates not configured, red with D indicates disabled, green with E indicates enabled.

   (b) Place the cursor in any of the Auto Switch boxes except the white, non-configured boxes, and click to change the current status.

   (c) If Auto Switch is in disabled status:

      (1) Observe the Lock On box for the sensor is highlighted.

      (2) The Lock On may be changed by selecting the down arrow, double-click.

      (3) Observe a pull down menu.

(4) Select a Lock On path (O-3). For parallel sensor, lock-on is hardware path for radar and the path as defined in Sensor Config Status Report.

(5) Observe selected number is centered in box.

(6) Click OK to change the Auto Switch setting(s) and exit or Cancel to exit without change or,

(7) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

6. To change the Over Load status:

(a) Observe the status: red with D indicates disabled, green with E indicates enabled.

(b) Place the cursor in any of the Over Load boxes and click to change the current status.

(c) Click OK to change the Over Load setting(s) and exit or Cancel to exit without change or,

(d) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

7. To change the Tracking status:

(a) Observe the status: red with D indicates disabled, green with E indicates enabled.

(b) Place the cursor in any of the Tracking boxes and click to change the current status.

(c) Click OK to change the Tracking setting(s) and exit or Cancel to exit without change or,

(d) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

8. The Sensor Config function validates each entry and sends the message to a chassis application. If the entry is a valid entry but, not appropriate in the current chassis state, an error message is displayed in the System Monitor window. Observe the Function Status Report (Figure 4-158) for confirmation of the modified system function.

4.3.3 Keyboard and Display Config

Keyboard and Display Config allows the user to view and/or modify the status of displays and keyboards.

a. Special Notes:

1. An SMC-PC in the Non-SMS or Host Down state cannot request this function.

2. The tracks, handoffs, and flight plans on a display to be inhibited must be consolidated with other operational display positions.

3. Blank cells indicate displays and keyboards that are not configured and cannot be manipulated by the user.

4. The Enable All button sets all configured displays and keyboards to an enabled status.

b. Keyboard and Display Configuration operation:

1. Click Keyboard and Display Config (Figure 4-13).

2. Observe the Keyboard and Display Config window (Figure 4-18).

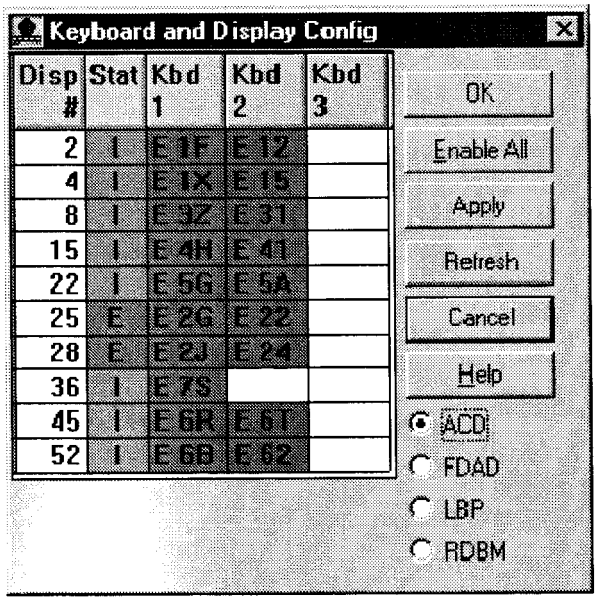


FIGURE 4-18. KEYBOARD AND DISPLAY CONFIGURATION WINDOW

3. To change individual configured keyboards within a specific DP group, select the Keyboard and Display group (ACD, FDAD, LBP, or RDBM radio button).

(a) Observe the cells are red or green indicating an inhibited or enabled display, status (Stat column) or keyboard (Kbd 1, 2, 3 columns), respectively.

(b) Click on the scroll bar arrows, in the bar between arrows, or position the cursor on the slider bar, hold mouse button down, and move the mouse up or down to the desired keyboard(s).

(c) To change the keyboard status:

(1) Place the cursor in the appropriate cell under column Kbd 1 or Kbd 2 and click.

(2) Observe the selected cell toggles color (red to green or green to red).

(d) To change the display status:

(1) Place the cursor in the appropriate cell under the Stat column and click.

(2) Observe the selected cell toggles color (red to green or green to red).

(e) Click OK to complete configuration change and exit or Cancel to exit without change or,

(f) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

4. To enable all configured keyboards and displays within a specific DP group, select the Keyboard and Display group (ACD, FDAD, LBP, or RDBM).

(a) Select the Enable All button.

(b) Observe that all configured displays and keyboards are now enabled (green). Results can be verified through DP Status Report (Figure 4-157).

(c) Click OK to complete configuration change and exit or Cancel to exit without change or,

(d) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

4.3.4 System Settings

System Settings allows the user to view and/or modify the system Date/Time, Altimeter, and Automated Terminal Information Service/General Service Information (ATIS/GSI) settings.

a. Special Notes:

1. An SMC-PC in the Non-SMS or Host Down state cannot request this function.

b. System Settings operation:

1. Click Programs, System Config, System Settings (Figure 4-13).

2. Observe the System Settings window (Figure 4-19).

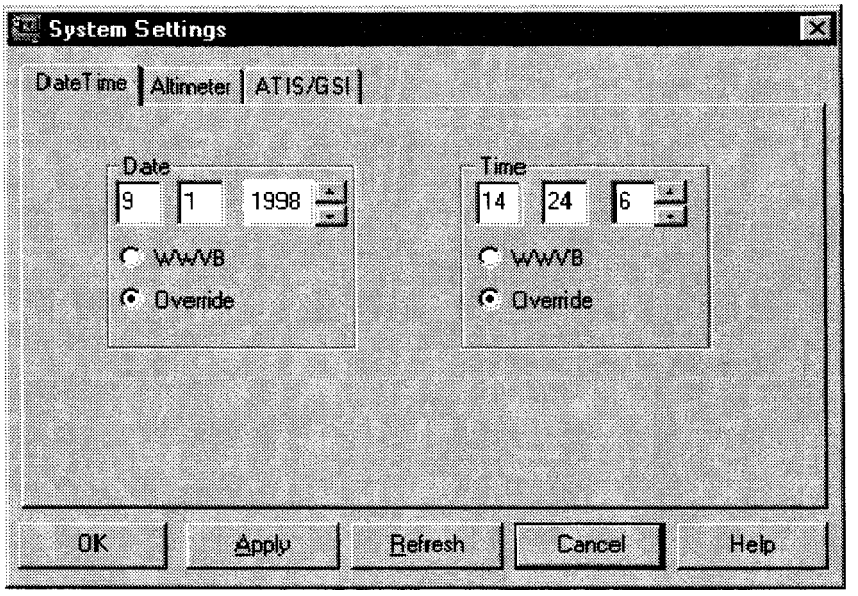


FIGURE 4-I 9. SYSTEM SETTINGS WINDOW — DATE/TIME

3. Select one of the three tabs (Date/Time, Altimeter, or ATIS/GSI).

4. Date/Time tab (Figure 4-19);

(a) If WWVB is available:

(1) The user may select WWVB as the Date/Time as the source for the system by clicking on the WWVB indicator.

a Observe the indicator button next to WWVB is highlighted.

b Observe the Date/Time values in their respective boxes.

(2) The user may select the host clock as the time source and manually enter the date by clicking on the Override indicator.

a Observe the indicator button next to Override is highlighted.

b Observe the date and the time boxes are highlighted.

c Place the cursor individually into the date or the time box(es) and click.

d Click on the up/down arrows to increase/decrease the respective values in the box(es) or enter a new value. The left to right boxes are assumed to be month, day, and year (mmddyy) for date and hours, minutes, and seconds (hhmmss) for time.

e Click OK to change/override the WWVB date/time source and exit or Cancel to exit without change.

f Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

g Observe the Function Status Report (Figure 4-158) to confirm the selected date/time source.

(b) If WWVB is not available:

(1) The user must select the host clock as the time source and manually enter the date by clicking on the Override indicator.

a Observe the indicator button next to Override is highlighted.

b Place the cursor individually into the date or the time box(es) and click.

c Observe the box highlights.

d Click on the up/down arrows to increase/decrease the respective values in the box(es) or enter a new value. The left to right boxes are assumed to be month, day, and year (mmddyy) for date and hours, minutes, and seconds (hhmmss) for time.

e Click OK to change host date/time source and exit or Cancel to exit without change.

f Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

g Observe the Function Status Report (Figure 4-158) to confirm the selected date/time source.

5. Altimeter tab (Figure 4-20).

(a) Observe a three-column list (Region Names, Altimeter Status, and Altimeter Value).

(b) Observe the Region Names are associated with up to ten altimeter areas.

(c) In the Altimeter Status column, for a selected Region Name, click on the drop down text box arrow for a menu to determine the altimeter data source.

(d) Observe a pull down menu (Automatic, Manual, Estimated, and Missing).

(e) If Manual or Estimated is selected:

(1) Observe the Altimeter Value box highlights.

(2) Click in the Altimeter Value box.

(3) Type in the manual or estimated numeric altimeter value.

(4) Select <Enter>.

(5) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status, OK to execute the function and exit, cancel to exit the function.

(6) Observe the Altimeter Value is changed to entered numeric.

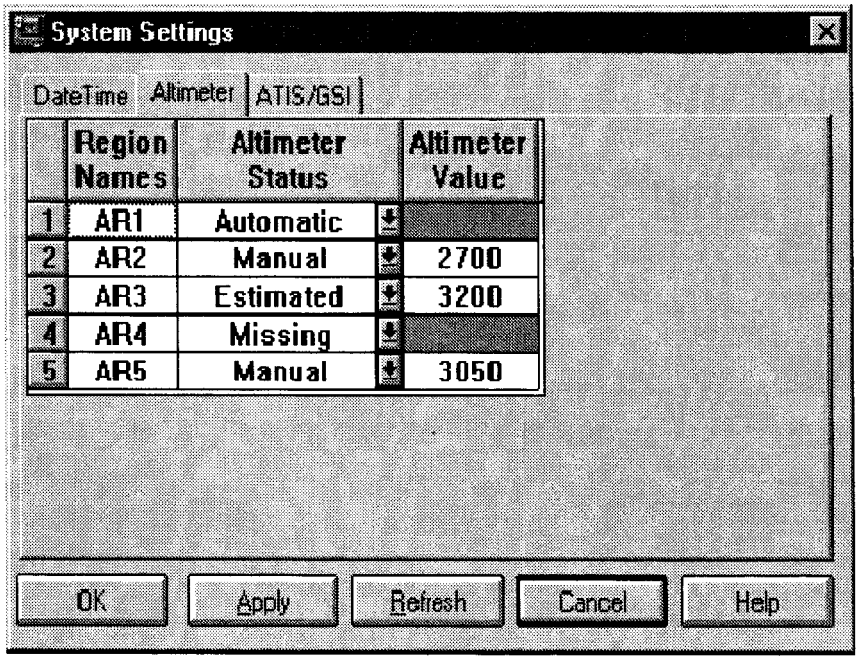


FIGURE 4-20. SYSTEM SETTINGS WINDOW — ALTIMETER

(7) Observe the Function Status Report (Figure 4-158) to confirm the selected altimeter setting(s).

(f) If Automatic is selected:

(1) Observe the altimeter value is entered by the system.

(g) If Missing is selected:

(1) Observe no altimeter value is present.

6. The System Setting/Altimeter function validates each entry and sends the message to a chassis application. If the entry is a valid entry, but not appropriate in the current chassis state, an error message is displayed in the System Monitor window. Observe the Function Status Report (Figure 4-l 58) for confirmation of the modified system function.

7. ATIS/GSI tab (Figure 4-21):

(a) Observe GSI and ATIS boxes.

(b) Observe Host and l-9 GSI entry boxes.

(c) To enter Host 1-9 boxes,

(1) Place the cursor in any of the boxes, if blank, and type a user-defined message (maximum of 12 characters) or,

(2) Place the cursor in any of the boxes, delete previous contents, and type a user-defined message (maximum of 12 characters) or,

(3) Place the cursor in any of the boxes, and hold the left mouse button while selecting/blocking existing text. Type a user-defined message (maximum of 12 characters).

(4) Click on OK to select Host/Sat information change or Cancel to exit without change.

(5) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

(6) Observe the Function Status Report (Figure 4-158) to confirm the selected GSI entry(ies).

(d) To enter ATIS box:

(1) Place the cursor in the box and type in a one alpha character.

(2) Click on OK to select ATIS information change or Cancel to exit without change.

(3) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

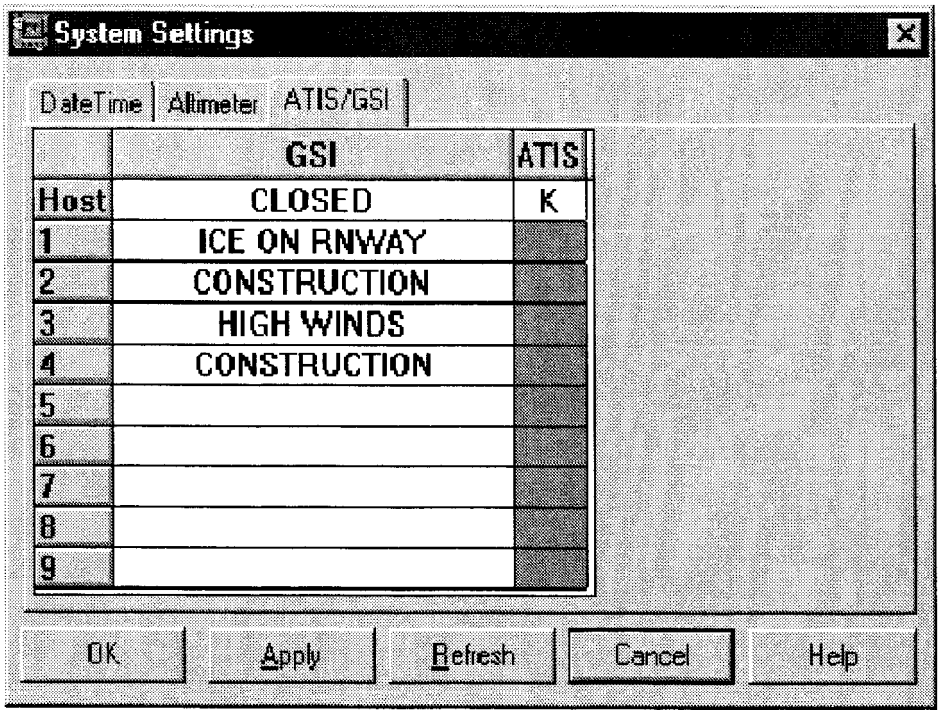


FIGURE 4-21. SYSTEM SETTINGS WINDOW — ATIS/GSI

8. The System Setting/ATIS/GSI function validates each entry and sends the message to a chassis application. If the entry is a valid entry, but not appropriate in the current chassis state, an error message is displayed in the System Monitor window. Observe the Function Status Report (Figure 4-l 58) for confirmation of the modified system function.

4.3.5 Flight Plan Termination

Flight Plan Termination allows the user to request the termination of specified flight plans.

a. Special Notes:

1. An SMC-PC in the Non-SMS or Host Down state cannot request this function.

2. All tracks with Estimated Time of Arrival/Proposed Time of Departure (ETA/PTD) less than the entered time are deleted.

b. Flight Plan Termination operation:

1. Click Flight Plan Termination (Figure 4-13).

2. Observe the Flight Plan Termination window (Figure 4-22).

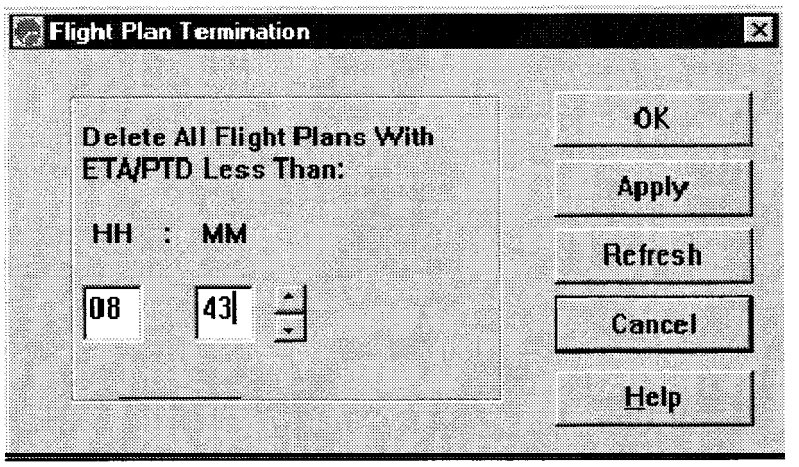


FIGURE 4-22. FLIGHT PLAN TERMINATION WINDOW

3. Move cursor in either box labeled HH or MM and click.

4. Observe the cursor appears inside the box.

5. Select the arrow keys to change the values in the HH or MM box. Up arrow increases the values, and down arrow decreases the values, or

   (a) Place the cursor in either box, delete the numeric, and type in the new numeric or,

   (b) Place the cursor in either box, hold the left mouse button down, and select/block the numeric. Type in the new numeric.

6. Click OK to implement termination and exit or Cancel to exit without change.

7. Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

8. The Flight Plan Termination function validates each entry and sends the message to a chassis application. If the entry is a valid entry, but not appropriate in the current chassis state, an error message is displayed in the System Monitor window. Observe the Function Status Report (Figure 4-l 58) for confirmation of the modified system function.

4.3.6 Assume SMS

Assume SMS allows the user to reconfigure the Non-SMS SMC-PC to be the System Monitor Station (SMS).

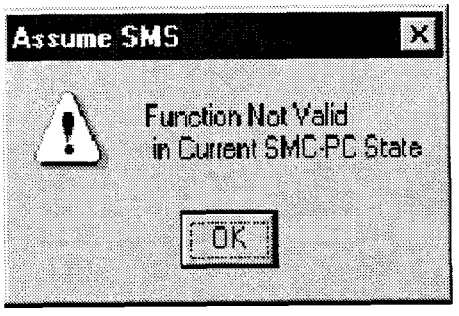


FIGURE 4-23. ASSUME SMS DIALOG BOX

a. Special Notes:

1. A message box (Figure 4-23) is displayed if a user attempts to perform a function that is not allowed in the current SMC-PC state.

2. An SMC-PC in the SMS or Host Down state cannot request this function.

b. Assume SMS operation:

1. Click Assume SMS (Figure 4-13).

2. Observe the Assume SMS confirmation window (Figure 4-24).

3. Click OK to Assume SMS and exit or Cancel to exit without assuming SMS.

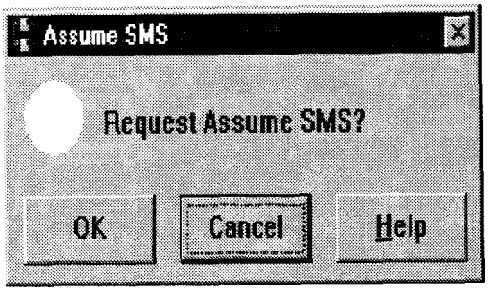


FIGURE 4-24. ASSUME SMS WINDOW

4.3.7 Resectorization

Resectorization allows the user to resectorize the fix configuration and/or to request a partial resectorization.

a. Special Notes:

1. An SMC-PC in the Non-SMS or Host Down state cannot request this function.

b. Resectorize operation:

1. Click Resectorization (Figure 4-13).

2. Observe the Resectorization window (Figure 4-25).

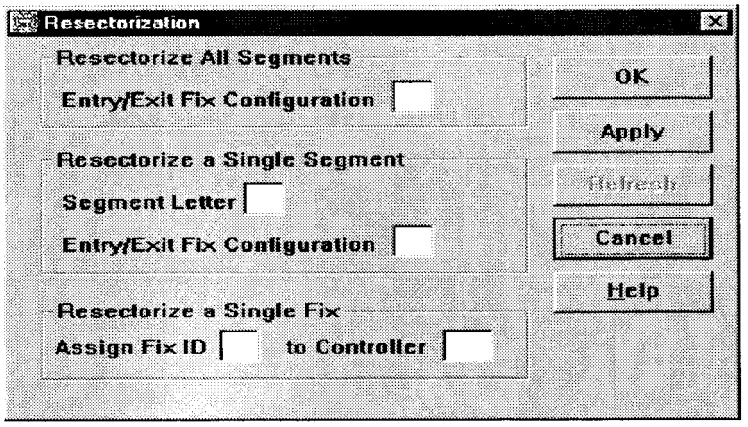


FIGURE 4-25. RESECTORIZATION WINDOW

(a) Resectorize All Segments:

(1) Place the cursor in the box and click to change the values (l-9) in the Entry/Exit Fix box.

a Delete the numeric, and type in the new numeric or,

b Hold the left mouse button down, and select/block the numeric. Type in the new numeric.

(2) Click OK for Resectorize All Segments and exit or Cancel to exit without resectorization.

(3) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

3. Resectorize a Single Segment from an Entry/Exit Fix:

(a) Place the cursor in the Segment Letter Fix ID box and click.

(b) Observe the cursor appears inside the box.

(c) Type in a single Segment Letter.

(d) Place the cursor in the box and click to change the values (l-9) in the Entry/Exit Fix Configuration box.

(1) Delete the numeric, and type in the new numeric or,

(2) Hold the left mouse button down, and select/block the numeric. Type in the new numeric.

(e) Click OK to Resectorize a Single Segment from an Entry/Exit Fix Configuration and exit or Cancel to exit without changing the segment.

(1) If the OK button is pressed with an invalid segment letter an error message box, Figure 4-26, is displayed and the message is not sent.

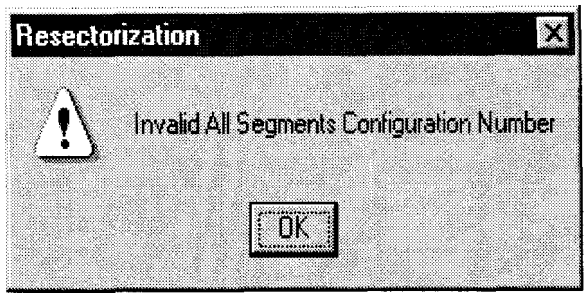


FIGURE 4-26. INVALID SEGMENT LETTER ERROR MESSAGE

(2) Click OK to return to the Resectorization window to enter a correct segment letter.

(f) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

4. To Resectorize a Single Fix:

(a) Click in the Assign Fix ID and the Controller box and click.

(b) Type in a Fix ID and controller position.

(c) Click OK for Resectorize a Single Fix and exit or Cancel to exit without resectorization or,

(1) If the OK button is pressed with an invalid Fix ID an error message box, Figure 4-27, is displayed and the message is not sent.

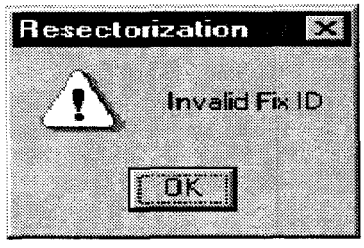


FIGURE 4-27. NO FIX ID ERROR MESSAGE

(2) If the OK button is pressed with an invalid controller ID an error message box, Figure 4-28, is displayed and the message is not sent.

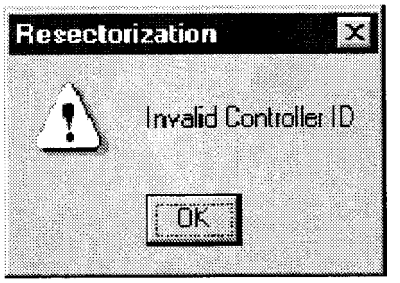


FIGURE 4-28. INVALID CONTROLLER ID ERROR MESSAGE

(3) If the OK button is pressed and no changes are entered, a message box is displayed, Figure 4-29, that confirms that no changes were made and no message is sent.

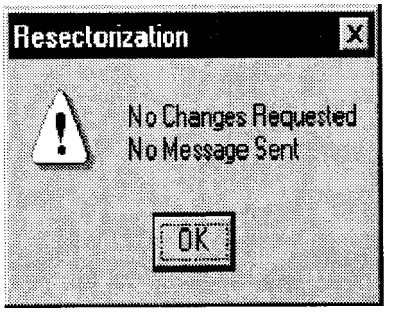


FIGURE 4-29. NO CHANGES REQUESTED ERROR MESSAGE

(d) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

4.3.8 **Site Adaptation**

Site Adaptation allows the user to enter, modify, verify, and save Site Adaptation parameters and files.

a. Special Notes:

1. Double clicking on an open or closed book icon toggles to the opposite condition.

2. Double clicking on a page item icon causes the appropriate parameter window to be displayed.

3. A popup error window appears if any validation errors are detected in the parameter values. and the user can make modifications if desired.

4. When data in a parameter window have been modified, an asterisk (*) appears next to the parameter window name in its window title bar until an update or store operation is performed for that parameter(s). The asterisk is then removed.

5. For site use, the title bar will display “Site Adaptation Editor (LITE Version)” and the “Generate Binary” menu option on the File menu will be displayed as “Generate i86”.

6. The Site Adaptation Editor is a stand-alone program that executes interactive or by a command line call. When activated by a command line, the following three options are allowed:

sd	Generate documentation option
bitmaps	Capture bitmaps option
batch	SA Editor placed into batch mode.

When using the batch option, the following command line options are valid:

bddd	Directory path for the ASCII text file for source input to the SA Editor
iddd	Directory path for the insert file(s) to the SA Editor
oddd	Directory path for the output file from the SA Editor
lddd	Directory path for a log file for the batch session of the SA Editor
pddd	Generate system plane information from sensor location information.

NOTE

ddd represents the directory path and file name and extension, example: c:\buildsa\msp_ca1 .txt

ca	Conflicts **always** overwrite. Always resolve conflicts by using the data from the insert file
cn	Conflicts never overwrite. Always resolve conflicts by using the data from the source file

The following is an example of a command line to activate the SA Editor in batch mode.

Sa.exe -batch -ca -lc:\builddir\sa_log.txt -bc:\builddir\arts3.txt -ic:\buildsa\sysp.txt -oc:\buildsa\testbin.i86.

The above command line calls the Site Adaptation Editor in batch mode. A log file c:\builddir\sa_log.txt is created and contains information on how the Site Adaptation Editor session performed. The source file processed by the editor is found at c:\build-dir\arts3.txt and the insert file is c:\buildsa\sysp.txt. The ca option tells the editor if any conflicts between tables from the source file c:\builddir\arts3.txt and tables in insert file c:\buildsa\sysp.txt, select the table from the insert file. The binary files are generated with the names testbin.i86 and testbin.m68.gz.

b. Menu Bar Functions:

File Menu

New	Creates a new (empty) Site Adaptation data set.
Open	Displays an open file selection dialog box from which the user can specify the name of an existing ASCII Site Adaptation file to be loaded.
Close	Closes the existing ASCII Site Adaptation file, after giving the user the opportunity to save any changes.
Save	Saves the ASCII version of the current working set of site parameter values to the current file name.
Save As	Displays a save as file selection dialog box which allows the user to save the current working set of site parameter values to an ASCII file of a user specified name.
Inset-t	Displays an open file selection dialog box which allows the user to specify an ASCII Site Adaptation file whose data are to be merged into the current site parameter data set. This menu option is available whenever the user has a new or existing Site Adaptation file open. The user is warned via a popup message box whenever table data from the newly specified file would overwrite existing table data in the current working set of site parameter values. On a table by table basis, the user can choose to overwrite the existing data with new values from the file, or choose to ignore the new values. As a convenience, the user can also select the Yes to All or No to All options to avoid being prompted individually for each duplicate table. These options either accept or deny, respectively, all overwrites from that point on during the current Insert operation. The overwrite warning message box also allows the user to cancel the Insert operation and restore the site parameter data set to the state it was in before the Insert request. A popup error window is displayed if any syntax or file I/O errors are encountered when inserting the file. No data updates are made in this case.
Import Terrain Map	Displays a file selection box which allows the user to specify a Terrain Map file to be imported and incorporated into the current parameter data set. A popup error window is displayed if any syntax or file I/O errors are encountered when importing the Terrain Map file.
Import Sensor Analysis	Displays a file selection box which allows the user to specify a SCAP output file to be imported and incorporated into the current parameter data set. A popup error window is displayed if any syntax or file I/O errors are encountered when importing the SCAP output file.
Validate	Validates all Site Adaptation data and dependencies. Validation errors are displayed in a scrollable popup validation error window. A successful validation message is displayed in the Status bar.

File Menu

Generate Binary	Saves the current site data set to both Motorola and Intel binary formatted files, after performing a validation of the site data set. If validation errors are detected, the user is notified and the binary file generation is aborted. The user supplies a path and filename prefix for the binary files which is then supplemented with the proper file extension based on the binary file format (Motorola or Intel). A successful generation message is displayed in the Status bar when the binary file has been generated.
Generate .i86 (Site Use Only)	Performs the same functionality as the Generate Binary option, however, only Intel binary files are generated.
Generate Plot Files	Generates plot files for the current site data set, after performing a validation of the data. If validation errors are detected, the user is notified and the plot file generation is aborted. The plot files are stored to standard filenames in a user specified directory. If a file in the selected directory already exists, then a dialog is displayed asking the user whether or not to replace the existing file. A successful generation message is displayed in the Status bar when the plot file has been generated.
Recent Files	Presents a list of currently or previously opened files from which the user may choose to reopen.
Exit	Exits Site Adaptation program and closes all associated windows, after giving the user the opportunity to save any changes.

Edit Menu

cut	Cuts the selection and puts it on the clipboard
Copy	Copies the selection and puts it on the clipboard.
Paste	Inserts clipboard contents at insertion point.
Find Table	Provides the ability to find a table by its name. A list of all tables is displayed. Double clicking on a table name, or selecting a table and pressing OK causes the parameter page that contains the selected table to be displayed.

View Menu

Toolbar	Toggles the Toolbar between displayed and hidden.
Status Bar	Toggles the Status bar between displayed and hidden.

Page Menu

Update	Stores the values from the active parameter window to the site data set.
Next	Displays the parameter window that follows the currently selected parameter window in the Browser page hierarchy.
Prev	Displays the parameter window that precedes the currently selected parameter window in the Browser page hierarchy.

Tools Menu

Lat/Long X/Y Calc	Initiates a function which converts latitude/longitude values to their X/Y coordinates and vice versa. (For more information, see the description of the Lat/Long X/Y Calculator function in the ARTS Tools program group paragraph 4.59.)
Plot Tools	Initiates a COTS plotting tool. (For more information, see the description of the Plot Tool in paragraph 4.5.8.)
SA Data Downloader	Initiates a function which downloads a selected Downloader binary Site Adaptation file to the designated chassis. (For more information, see the description of Site Adaptation Data Downloader function in the System Config program group in paragraph 4.3.9.)

c. Toolbar Functions:

New Button	Creates a new (empty) Site Adaptation data set.
Open Button	Displays an open file selection dialog box from which the user can specify the name of an existing ASCII Site Adaptation file to be loaded. A popup error window is displayed if any syntax or file I/O errors are encountered when loading the file.
Save Button	Saves the ASCII version of the current working set of site parameter values to the current file name.
Printer Button	Prints the active document.
Cut Button	Cuts the selection and puts it on the clipboard.
Copy Button	Copies the selection and puts it on the clipboard.
Paste Button	Inserts clipboard contents at insertion point.
Left Arrow Button	Displays the parameter window that precedes the currently selected parameter window in the Browser page hierarchy.
Right Arrow Button	Displays the parameter window that follows the currently selected parameter window in the Browser page hierarchy.
Update Page Button	When outlined in red and clicked, the values from the active parameter window to the site data set are stored.

d. Site Adaptation operation:

1. Click Site Adaptation (Figure 4-13).
2. Observe the Site Adaptation Editor window (Figure 4-30).
3. The Site Adaptation Editor edits an existing Site Adaptation data text file or provides the means to create a new text file.

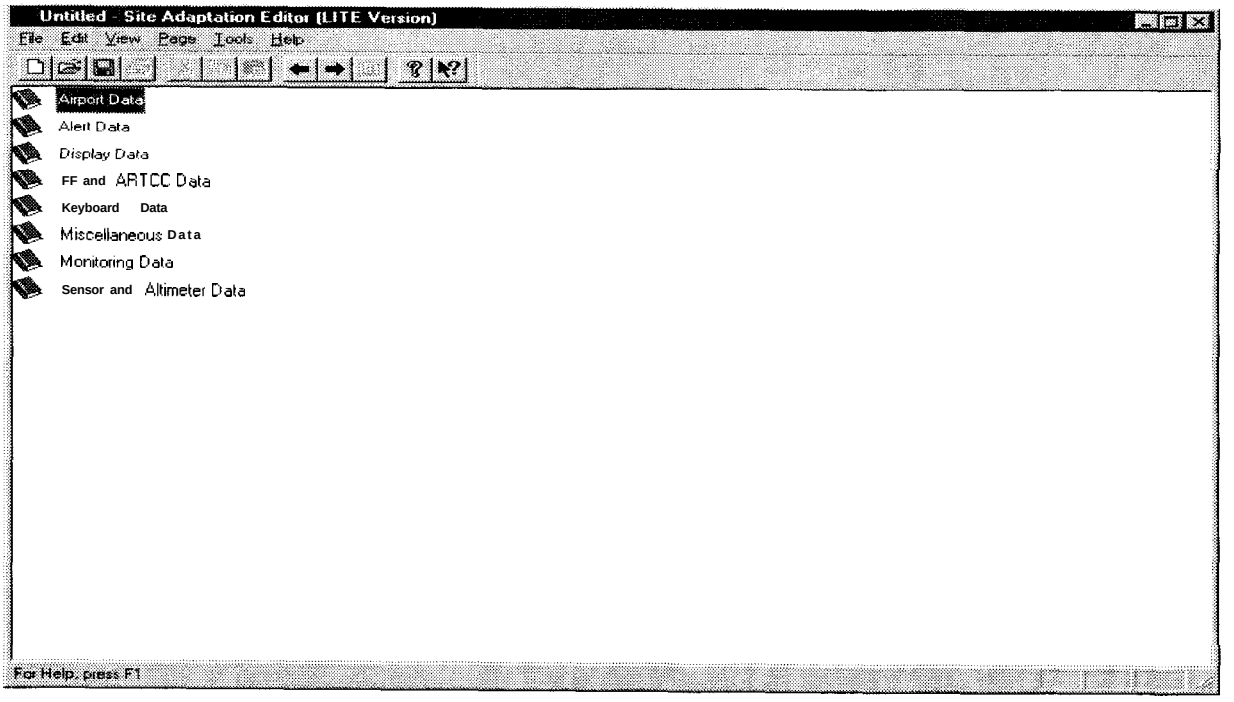


FIGURE 4-30. SITE ADAPTATION EDITOR WINDOW SHOWING DATA SECTIONS (BOOKS)

4. To retrieve an existing text file:

   (a) Select File/Insert, click the Open button or File/Open from the Toolbar.

   (b) Observe an Open file selection dialog window (Figure 4-31).

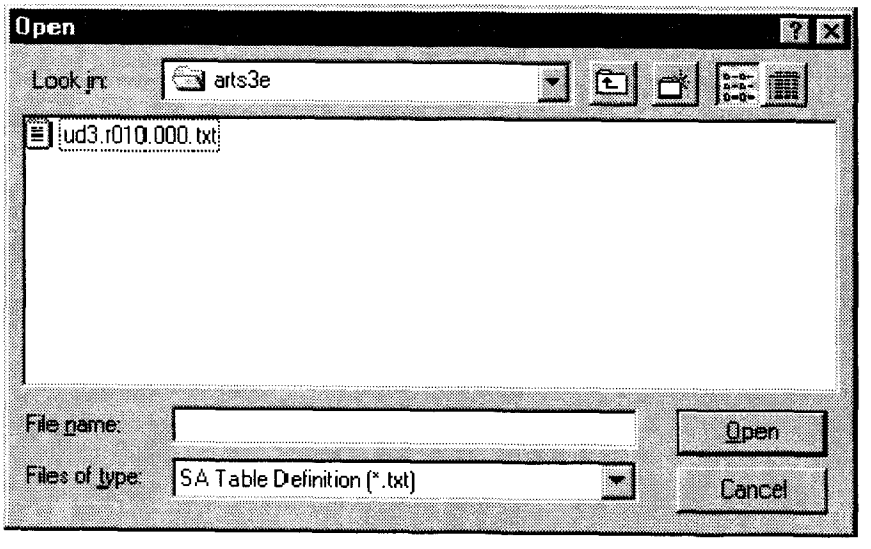


FIGURE 4-31. OPEN FILE WINDOW

(c) Observe the extension .txt in the List Files of Type at the bottom of the window indicating the type of file the user should load.

(d) The user must know the directory structure to select the correct drive and directory(ies) to locate the ASCII file.

(e) When the file is selected, click Open or double click on the file to load that file into the Site Adaptation Editor parameters and exit or Cancel to exit without loading.

(1) An overwrite dialog box (Figure 4-32) is displayed if the Insert function overwrites an existing file in the working set of parameter pages.

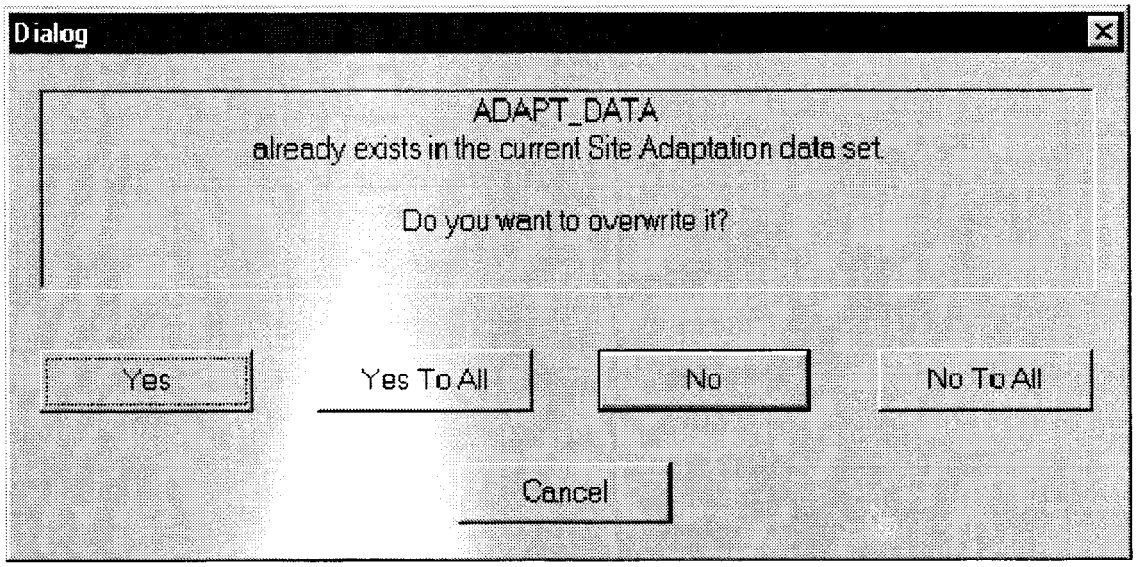


FIGURE 4-32. FILE ALREADY EXISTS DIALOG WINDOW

(2) A Dialog window (Figure 4-33) is displayed if any syntax or I/O errors are encountered.

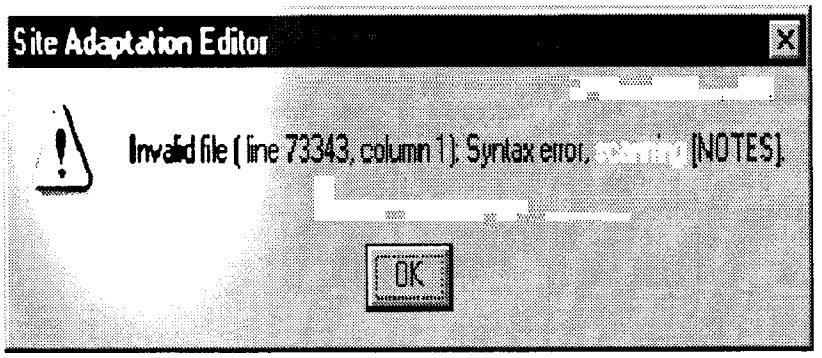


FIGURE 4-33. ERROR DIALOG BOX

(3) A load error message is displayed in the status bar (Figure 4-34).

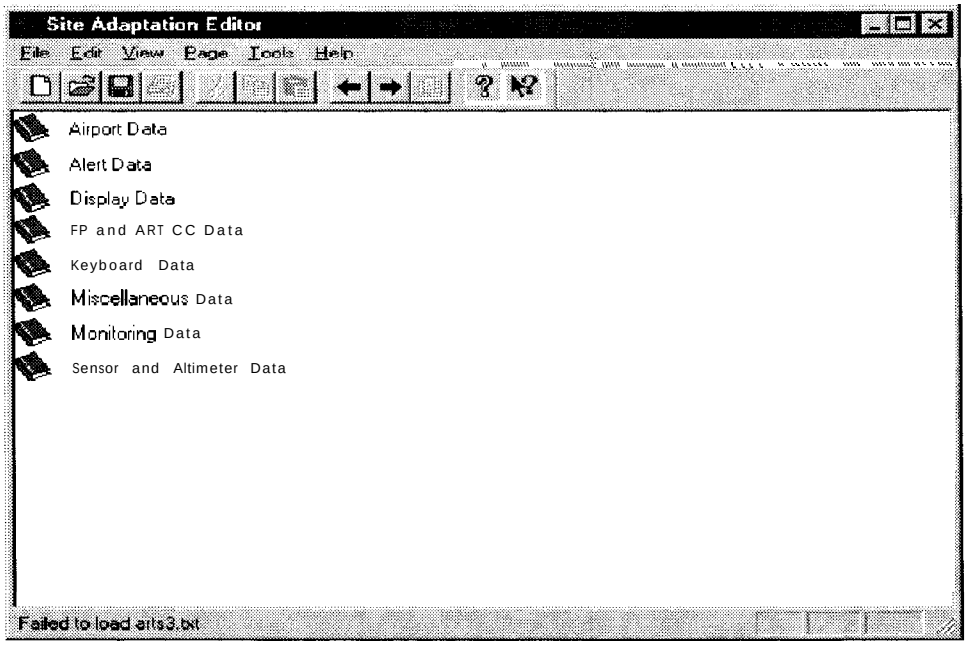


FIGURE 4-34. SITE ADAPTATION LOAD ERROR MESSAGE DISPLAYED IN STATUS BAR

(f) There will be a short wait. Observe the status line for “loading (filename).txt” then “loaded (filename).txt” (Figure 4-35).

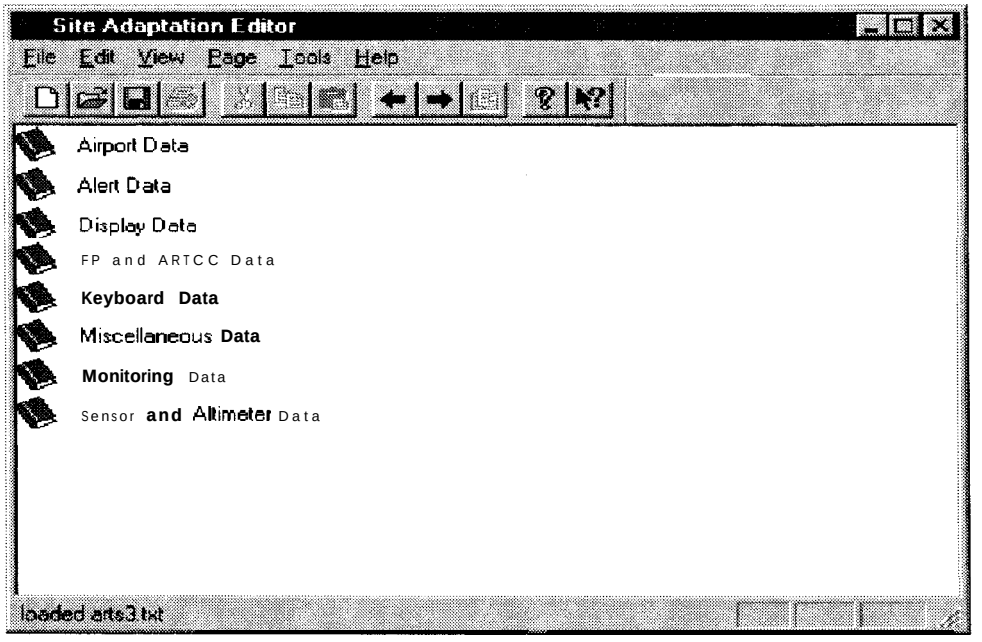


FIGURE 4-35. SUCCESSFUL LOAD OF SITE ADAPTATION DATA MESSAGE DISPLAYED IN STATUS BOX

5. Observe a list of the main sections of Site Adaptation data.

6. Double click on an item in the list to open that section (Figure 4-36).

7. Observe the selection changes to an open book and the pages that make up that section are listed.

   (a) Double clicking on an open book will restore to a closed condition and the list is removed.

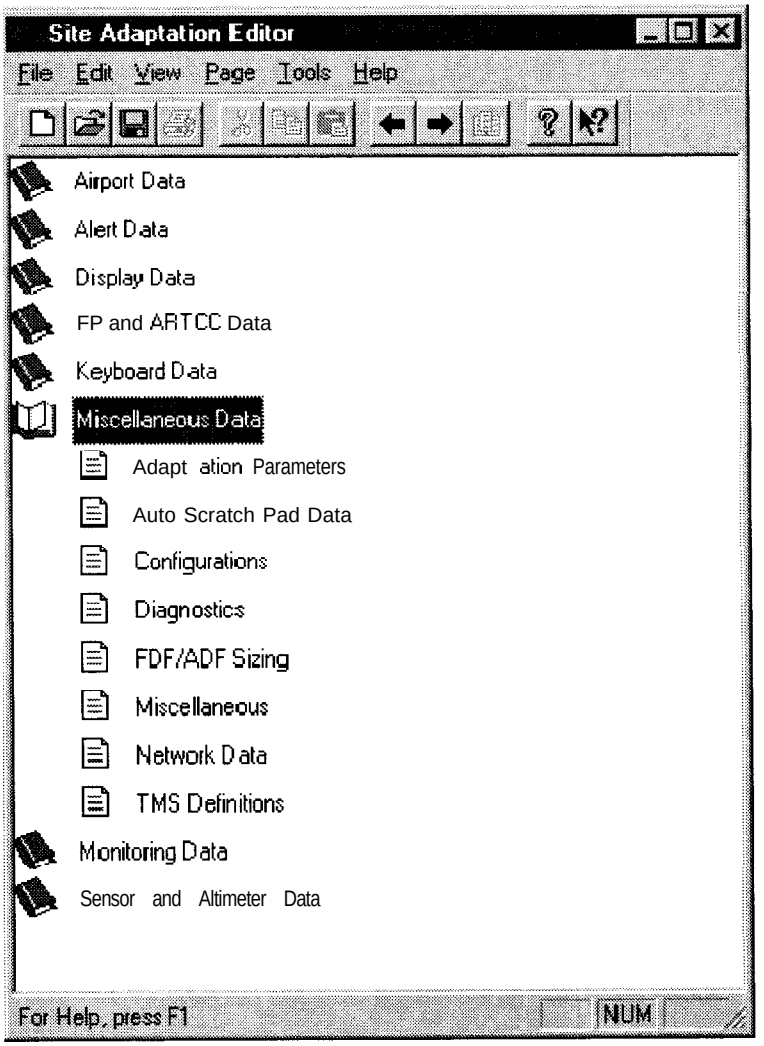


FIGURE 4-36. SITE ADAPTATION EDITOR SHOWING OPEN SECTION (PAGES)

8. To change or modify Site Adaptation parameters:

   (a) After opening the appropriate section, double click on the appropriate parameter represented as a page.

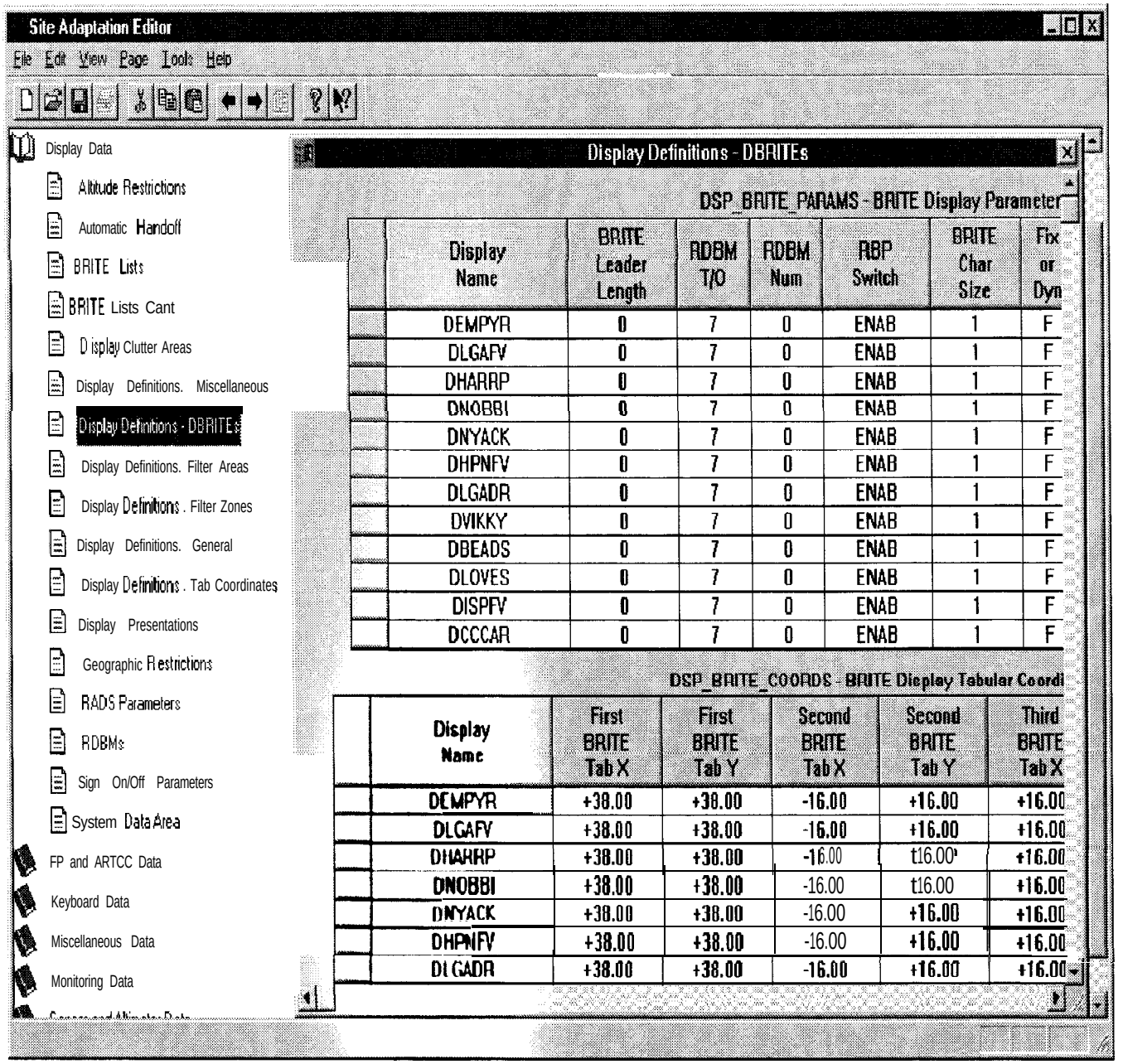
   (b) Observe a typical Site Adaptation parameter window (Figure 4-37).

   (c) Place the cursor in the grid location for the parameter and click.

(d) Type in the changed or modified value(s).

(1) The user must know the format of the modified or changed value.

(2) Observe the changed value is left-justified within the grid.



Display Name	BRITE Leader Length	RDBM T/O	RDBM Num	RBP Switch	BRITE Char Size	Fix or Dyn
DEMPYR	0	7	0	ENAB	1	F
DLGAFV	0	7	0	ENAB	1	F
DHARRP	0	7	0	ENAB	1	F
DNOBBI	0	7	0	ENAB	1	F
DNYACK	0	7	0	ENAB	1	F
DHPNFV	0	7	0	ENAB	1	F
DLGADR	0	7	0	ENAB	1	F
DVIKKY	0	7	0	ENAB	1	F
DBEADS	0	7	0	ENAB	1	F
DLOVES	0	7	0	ENAB	1	F
DISPFV	0	7	0	ENAB	1	F
DCCCAR	0	7	0	ENAB	1	F

Display Name	First BRITE Tab X	First BRITE Tab Y	Second BRITE Tab X	Second BRITE Tab Y	Third BRITE Tab X
DEMPYR	+38.00	+38.00	-16.00	+16.00	+16.00
DLGAFV	+38.00	+38.00	-16.00	+16.00	+16.00
DHARRP	+38.00	+38.00	-16.00	t16.00	+16.00
DNOBBI	+38.00	+38.00	-16.00	t16.00	+16.00
DNYACK	+38.00	+38.00	-16.00	+16.00	+16.00
DHPNFV	+38.00	+38.00	-16.00	+16.00	+16.00
DLGADR	+38.00	+38.00	-16.00	+16.00	+16.00

FIGURE 4-37. SAMPLE OF A TYPICAL SITE ADAPTATION DATA WINDOW

(e) Click outside the grid when finished.

(f) Observe the changed value is center-justified within the grid.

(g) If the entry is incorrect, the application beeps and displays an error message in the status bar.

(h) If correct, other entries may be made to the displayed parameter window.

(i) Observe when data have been modified, an asterisk (*) appears on the title bar of the parameter window (Figure 4-38). This is an indicator to the user that an update function is required to store the changed values.

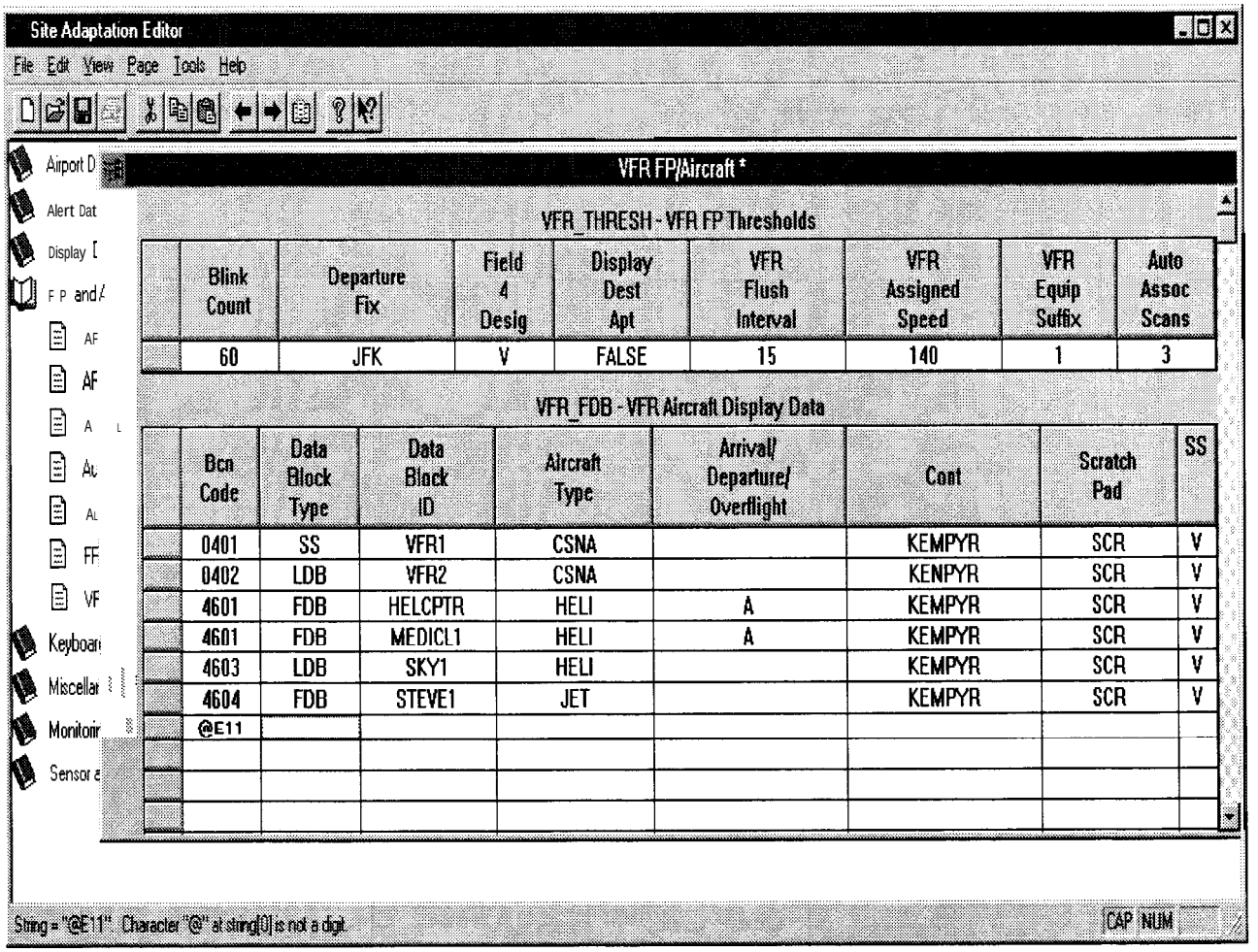


FIGURE 4-38. SAMPLE SITE ADAPTATION DATA WINDOW, MODIFIED (ASTERISK AFTER TITLE)

(j) Select Page/Update or click the Update Page button from the Toolbar.

(k) Observe the asterisk is removed indicating a successful store from the parameter page to the working set of Site Adaptation parameter values.

(l) The window may be stored or left in an open condition while other parameter windows are retrieved and modified. Multiple parameter windows may be displayed at the same time (Figure 4-39). The active parameter window is indicated by the highlighted color of its title bar.

(1) Select Page/Prev or Next or the ← or → in the Toolbar to move forward or backward through the list of parameter windows, or

(2) Double click on the specific window to be opened and modified.

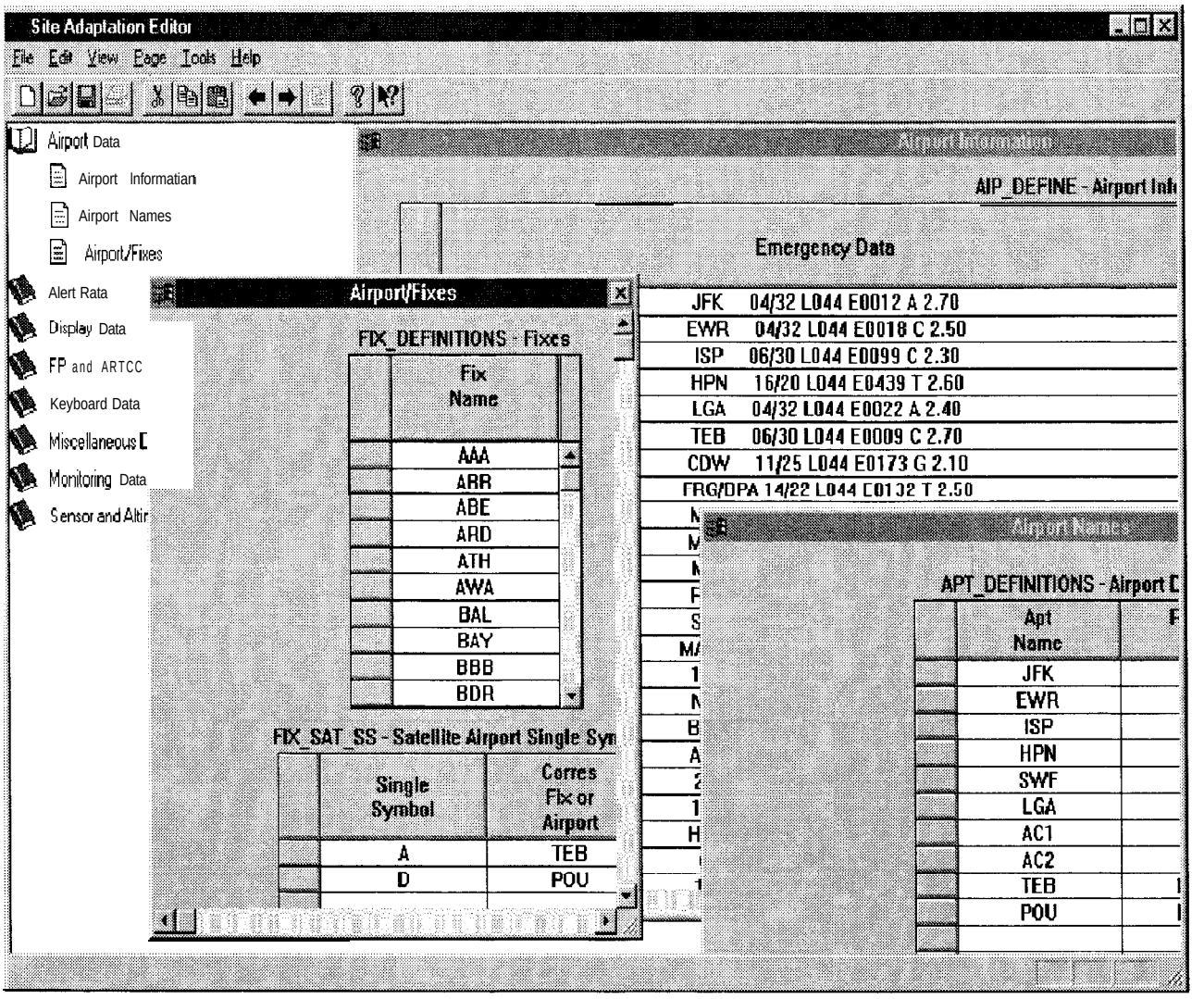


FIGURE 4-39. DISPLAY OF MULTIPLE SITE ADAPTATION PARAMETER WINDOW

(m) If closing a modified window without storing, a warning (Figure 4-40) is displayed.

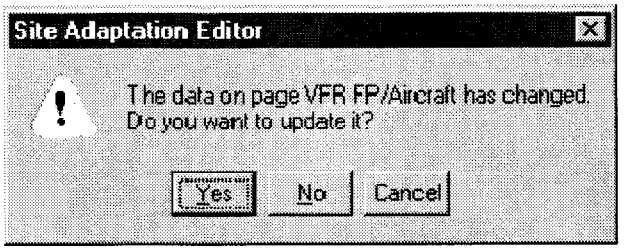


FIGURE 4-40. SAVE MODIFIED DATA DIALOG BOX

(n) When all parameter pages have been modified without errors, select File/Validate to validate all Site Adaptation data and dependencies.

(1) If validation errors occur during this process, a popup error window is displayed (Figure 4-41).

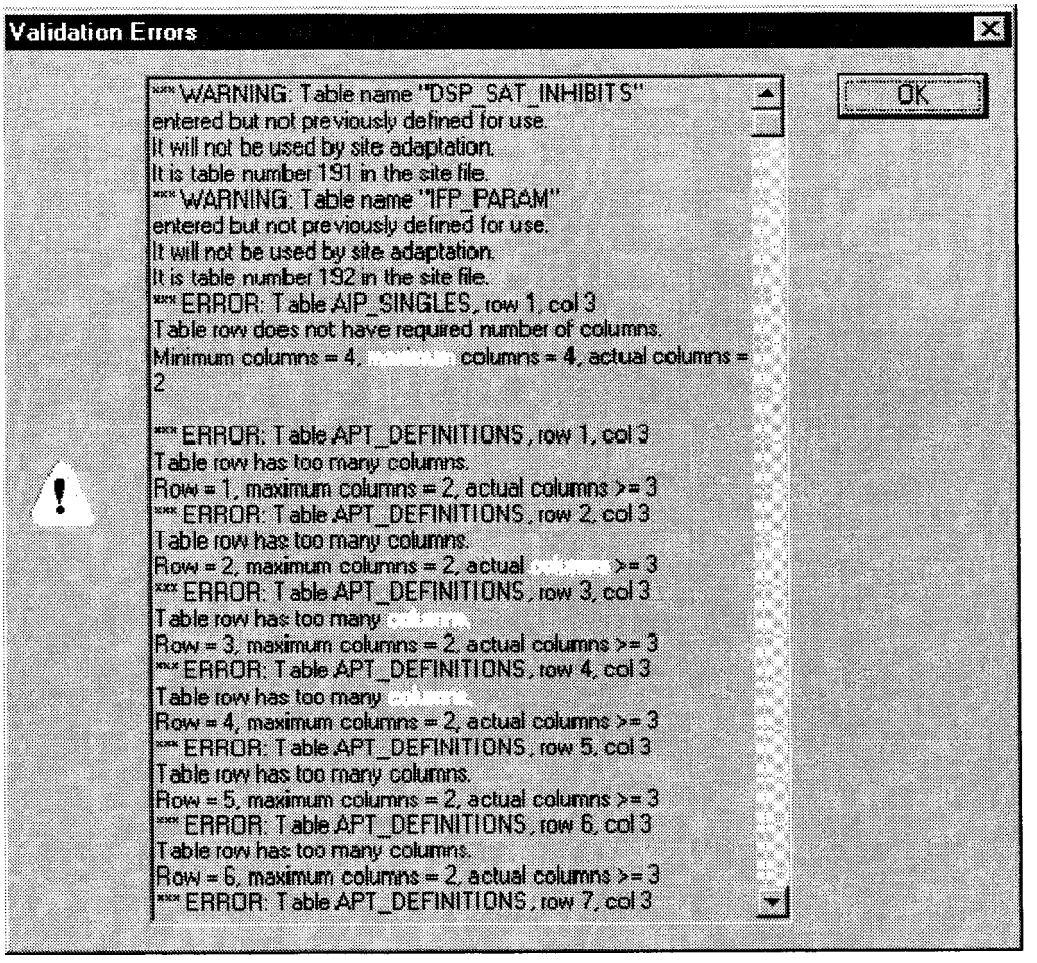


FIGURE 4-41. VALIDATION ERROR DIALOG WINDOW

(2) These errors must be corrected by the Site Adaptation Editor.

(3) A successful validation message is displayed in the Status bar (Figure 4-42).

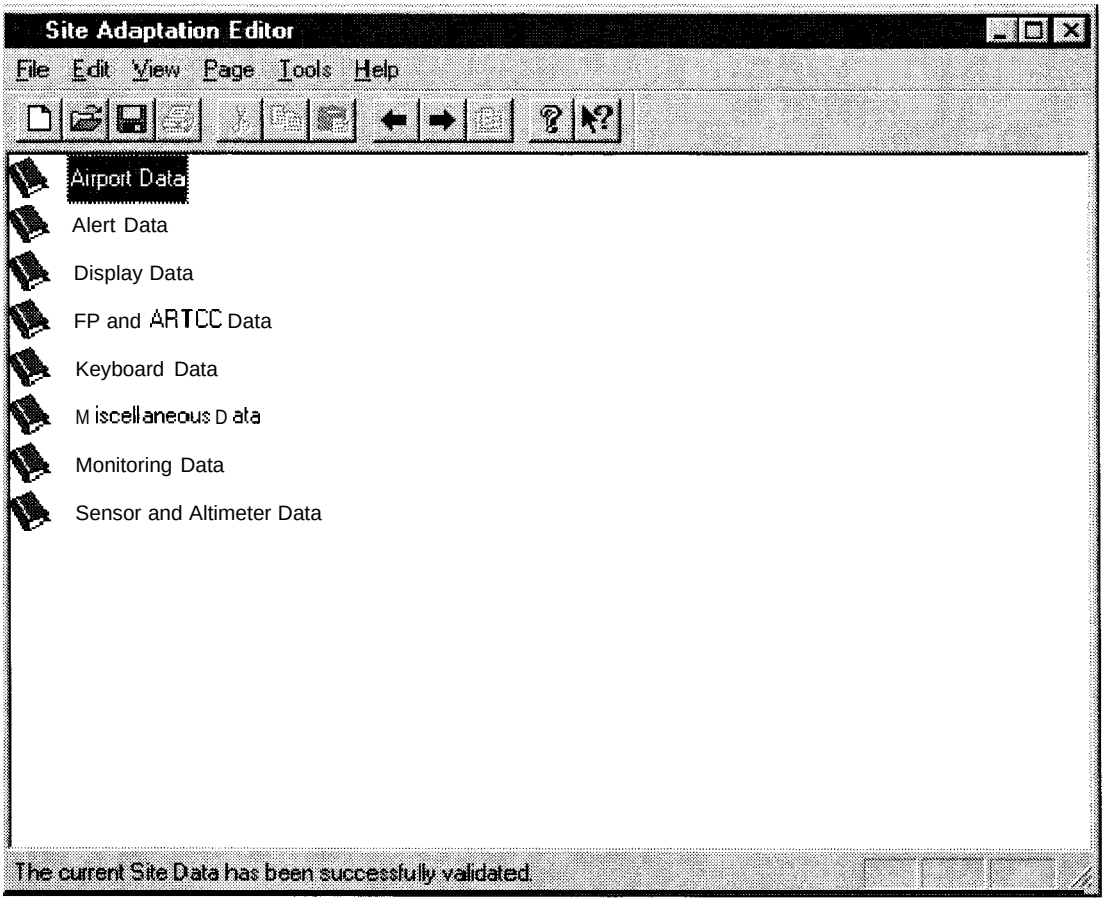


FIGURE 4-42. SUCCESSFUL VALIDATION MESSAGE SHOWN IN STATUS BOX

9. To create a Site Adaptation binary file:

(a) Binary files can only be generated from a preceding error free validation function.

(b) Select File/Generate .i86 file.

(c) Observe a Save Dialog box (Figure 4-43).

(d) Click until the appropriate directory is displayed.

(e) Type in a filename prefix. The proper filename extension is supplemented based on the binary file format (Motorola or Intel).

(f) Click Save to activate the generate/save function and exit or Cancel to exit without generating the binaries.

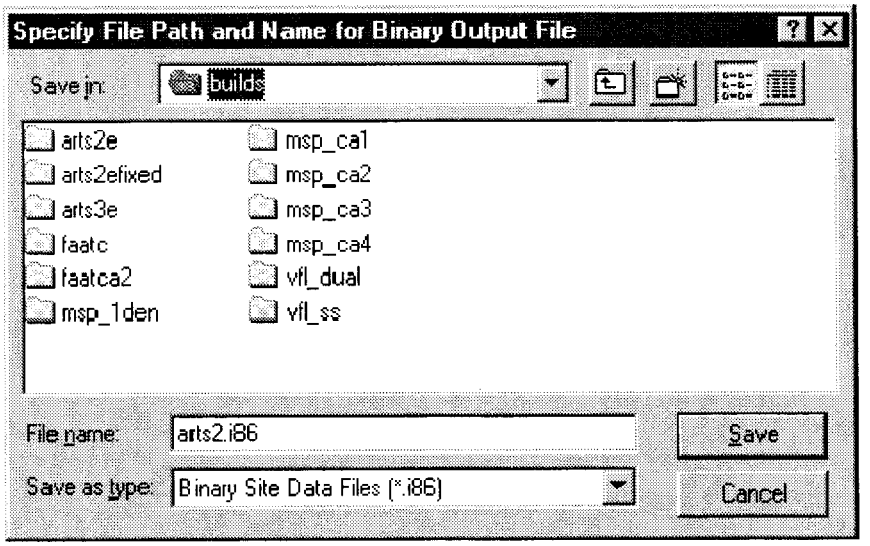


FIGURE 4-43. SAVE BINARY FILE WINDOW

(g) A successful binary generation message is displayed in the Status bar (Figure 4-44).

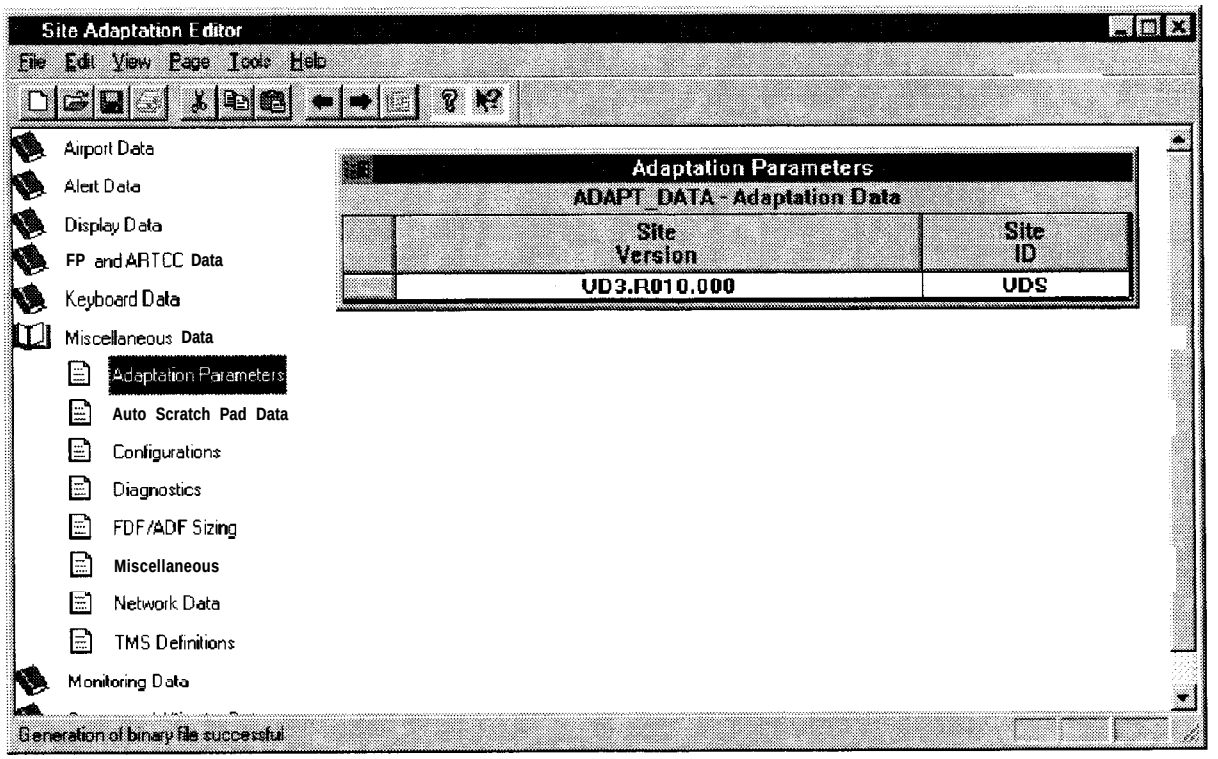


FIGURE 4-44. SUCCESSFUL BINARY SAVE MESSAGE SHOWN IN STATUS BOX

10. To generate plot files:

(a) Plot files can only be generated from an error free validation function.

(b) Select File/Generate Plot Files.

(c) Observe a Save Dialog box (Figure 4-45).

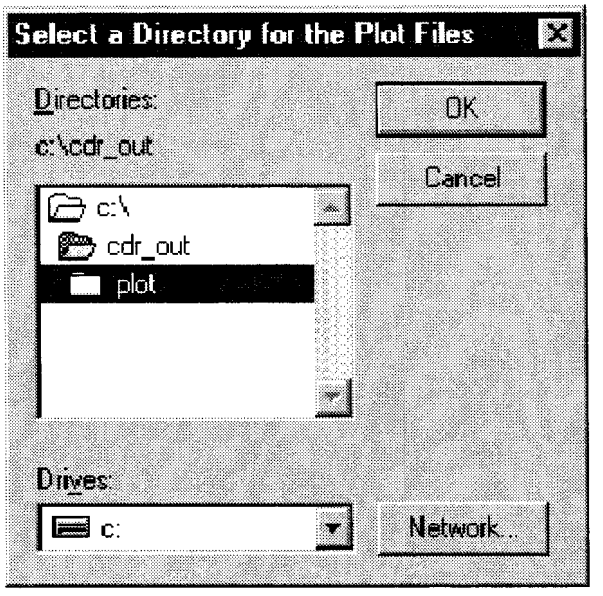


FIGURE 4-45. SELECT PLOT FILE DIRECTORY WINDOW

(d) Click until the appropriate directory is displayed.

(e) Type in a filename prefix. The plot files are stored to standard filenames in a user-specified directory.

(1) If a file in the selected directory already exists, a dialog is displayed asking the user whether or not to replace the existing file (Figure 4-46).

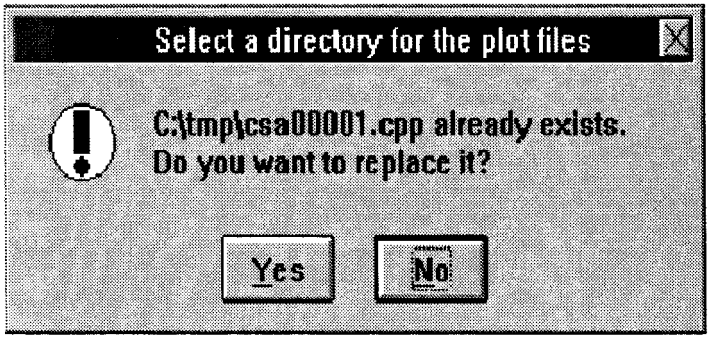


FIGURE 4-46. SAVE PLOT FILE CONFIRMATION DIALOG WINDOW

(2) A successful generation message is displayed in the Status bar (Figure 4-47) when the plot file is generated.

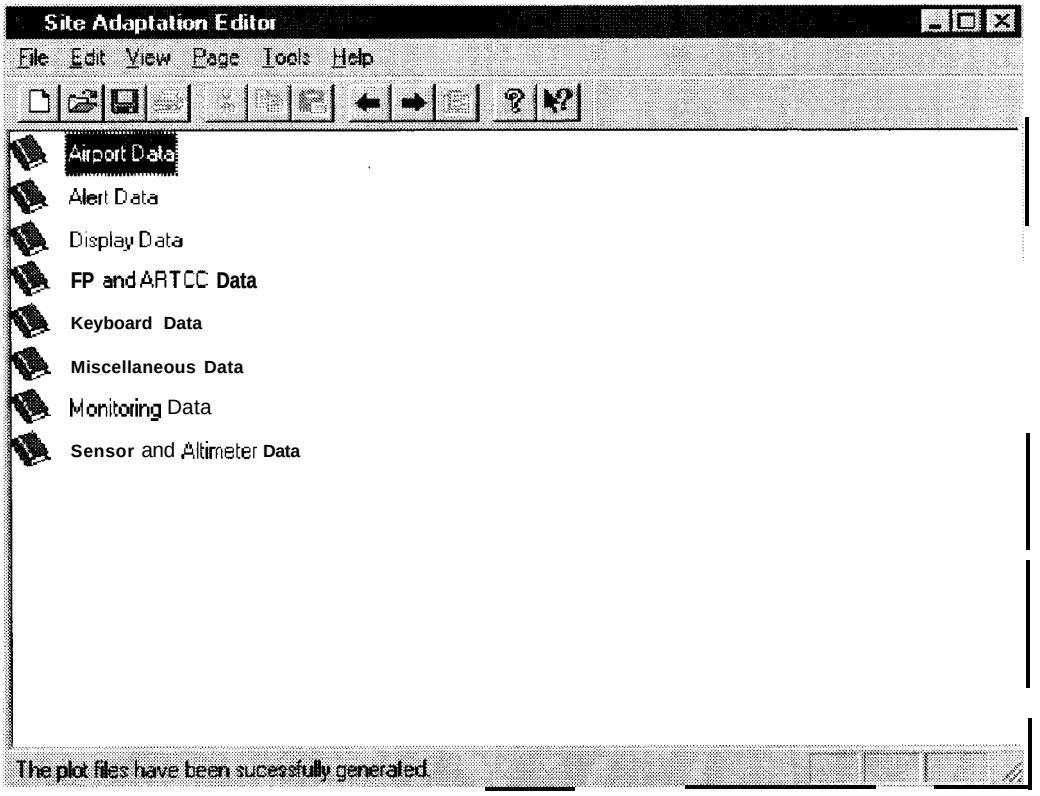


FIGURE 4-47. SUCCESSFUL SAVE OF PLOT FILE MESSAGE SHOWN IN STATUS BOX

(f) Click OK to activate the generate/save function and exit or Cancel to exit without generating the plot files.

11. To Import Terrain Map:

(a) This map is incorporated into the current Site Adaptation data set.

(b) Select File/Import Terrain Map.

(c) Observe a Select a Terrain Map File window (Figure 4-48).

(d) Observe the extension .dat in the List Files of Type at the bottom of the window indicating the type of file the user should load.

(e) Click until the appropriate directory is displayed.

(f) Click Open to activate the load function and exit or Cancel to exit without saving the map data.

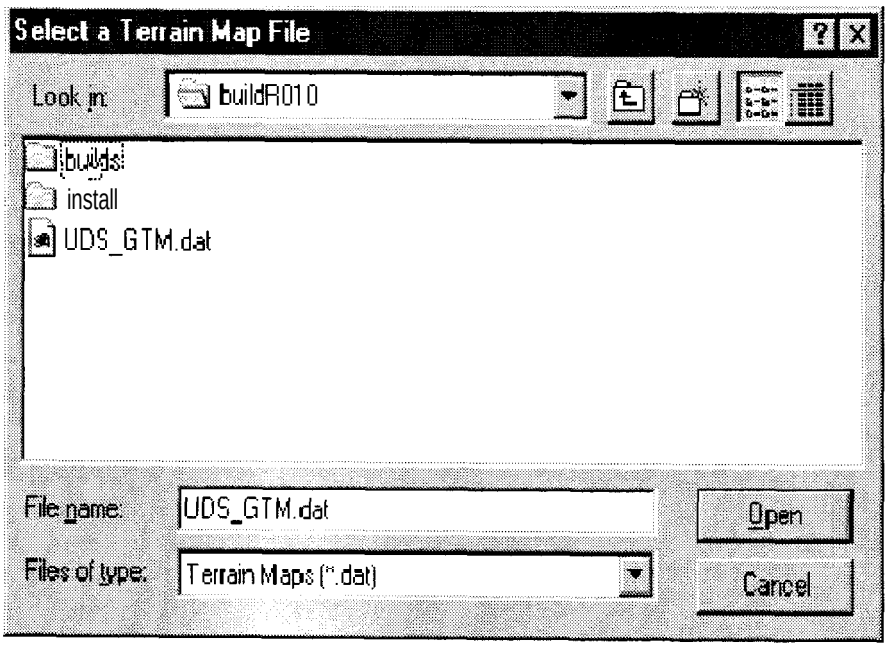


FIGURE 4-48. SELECT TERRAIN MAP FILE WINDOW

(g) A popup error window (Figure 4-49) is displayed if any syntax or file I/O errors are encountered when importing the Terrain Map file.

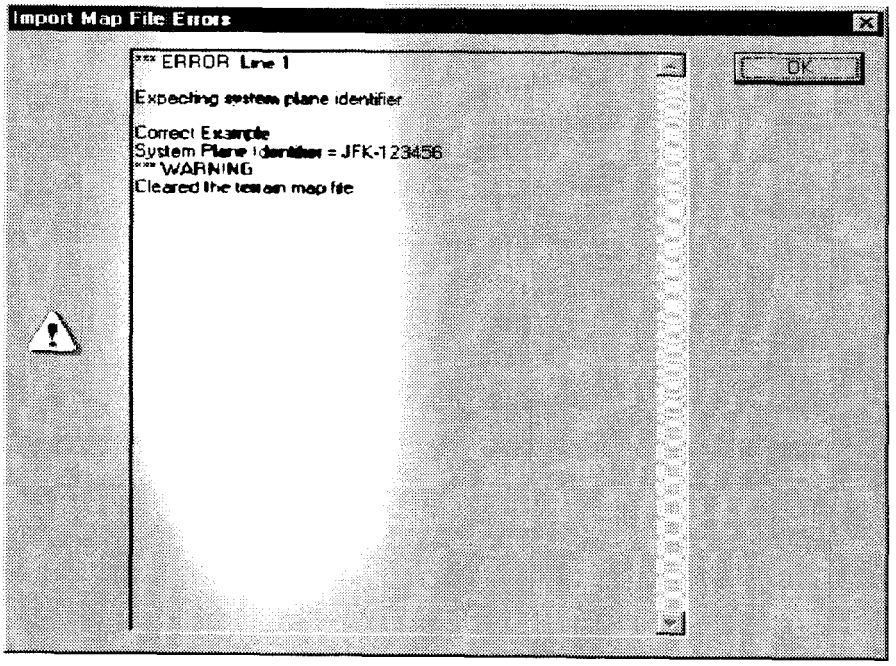


FIGURE 4-49. IMPORT MAP FILE ERROR DIALOG WINDOW

(h) If the load is successful, observe “Terrain Map loaded successfully” in Status bar.

12. To import Lat/Long X/Y Calculator, Plot Tool (GNU Plot), or Site Adaptation Downloader:

    (a) Select Tools/Lat/Long to X/Y Calc. (For more information, see paragraph 4.5.9).

    (b) Select Tools/Plot Tools. (For more information, see paragraph 4.5.8).

    (c) Select Tools/SA Data Downloader. (For more information, see paragraph 4.3.9).

13. To print every Parameter Page:

    (a) Select Run from the Start menu. Browse to the Site Adaptation application.

    (b) Append a command line parameter to the existing text in the “Command Line” edit control (do not change any of the text that was present when the dialog appeared, only add text to the right of the existing text). The format for the command line parameter is: -sd <directory for documentation> where “<directory for documentation>” is any directory you choose. You will need approximately 60 Mbytes of free disk space on the drive that contains this directory. Remember to remove the -sd <dir> parameter after printing.

    (c) Click the OK button.

14. Maximize the Site Adaptation Editor:

    (a) (Optional step) Select File/Open to open a Site Adaptation text file.

    (b) Select Page/Next or click the Next Toolbar button. This causes the Site Adaptation Editor to open each parameter page, capture a complete image of it (even if the parameter is wider or taller than the screen), save the bitmap to a file in the directory specified on the command line, and then create a Rich Text Format (RTF) document that combines the bitmaps with additional descriptive text. This process can take 10 minutes to an hour, depending on the system in use and whether or not a Site Adaptation file has been opened.

4.3.9 Site Adaptation Data Downloader

Site Adaptation Data Downloader provides the user the ability to download Site Adaptation files. When this function is initiated, it allows the user to select a Site Adaptation file for downloading and to select one or more chassis from an NID table of available chassis (CPs, TPs, ACDs, RDMs, SMCs, SMC-PCs, and AGWs in an ARTS IIIE configuration), as the destination(s) for the downloaded data file.

a. Special Notes:

    1. Do not attempt to download adaptation to the active partition.

    2. See paragraph 4.2.3 for information on Software Downloader. Site Adaptation data may also be loaded using this process.

b. Menu Bar Functions:

File Menu

Exit	Quits the application after giving the user the opportunity to save data.

Control Menu

Download	Starts the download operation.
Burn PO	Burns selected NID(s) flash memory with the contents of HDO.
Burn P1	Burns selected NID(s) flash memory with the contents of HD1.

View Menu

Toolbar	Toggles the Toolbar between displayed and hidden.
Status Bar	Toggles the Status Bar between displayed and hidden.
Selections Menu	Allows the user to specify the target chassis to be downloaded. As each target is selected, the client area grid is updated to indicate the target(s) that have been selected for downloading.
All CPs	Selects all CP NIDs as download targets.
All TPs	Selects all TP NIDs as download targets.
All SMCs	Selects all SMC NIDs as download targets.
All RDMs	Selects all RDM NIDs as download targets.
All AGWs	Selects all AGW NIDs as download targets.
All ACDs	Selects all ACD NIDs as download targets.
All FDEs	Selects all FDE NIDs as download targets.
All PCs	Selects all PC NIDs as download targets.
Clear All	Clears all NID selections.
All Configured	Selects all configured NIDs as download targets.

c. Toolbar Functions:

CP Button	Selects all CP NIDs as download targets.
TP Button	Selects all TP NIDs as download targets.
SM Button	Selects all SMC NIDs as download targets.
RD Button	Selects all RDM NIDs as download targets.
AG Button	Selects all AGW NIDs as download targets.
AC Button	Selects all ACD NIDS as download targets.
FE Button	Selects all FDE NIDs as download targets.
PC Button	Selects all PC NIDs as download targets.
Erase Button	Clears all NID selections.

World Button	Selects all NIDs as download targets.
DL	Starts the download operation.
MO	Burns selected NID(s) flash memory with the contents of HDO.
MI	Burns selected NID(s) flash memory with the contents of HD1.

d. Site Adaptation Data Downloader operation:

1. Click Site Adaptation Data Downloader (Figure 4-13).
2. Observe the Site Adaptation Data Downloader window (Figure 4-50).

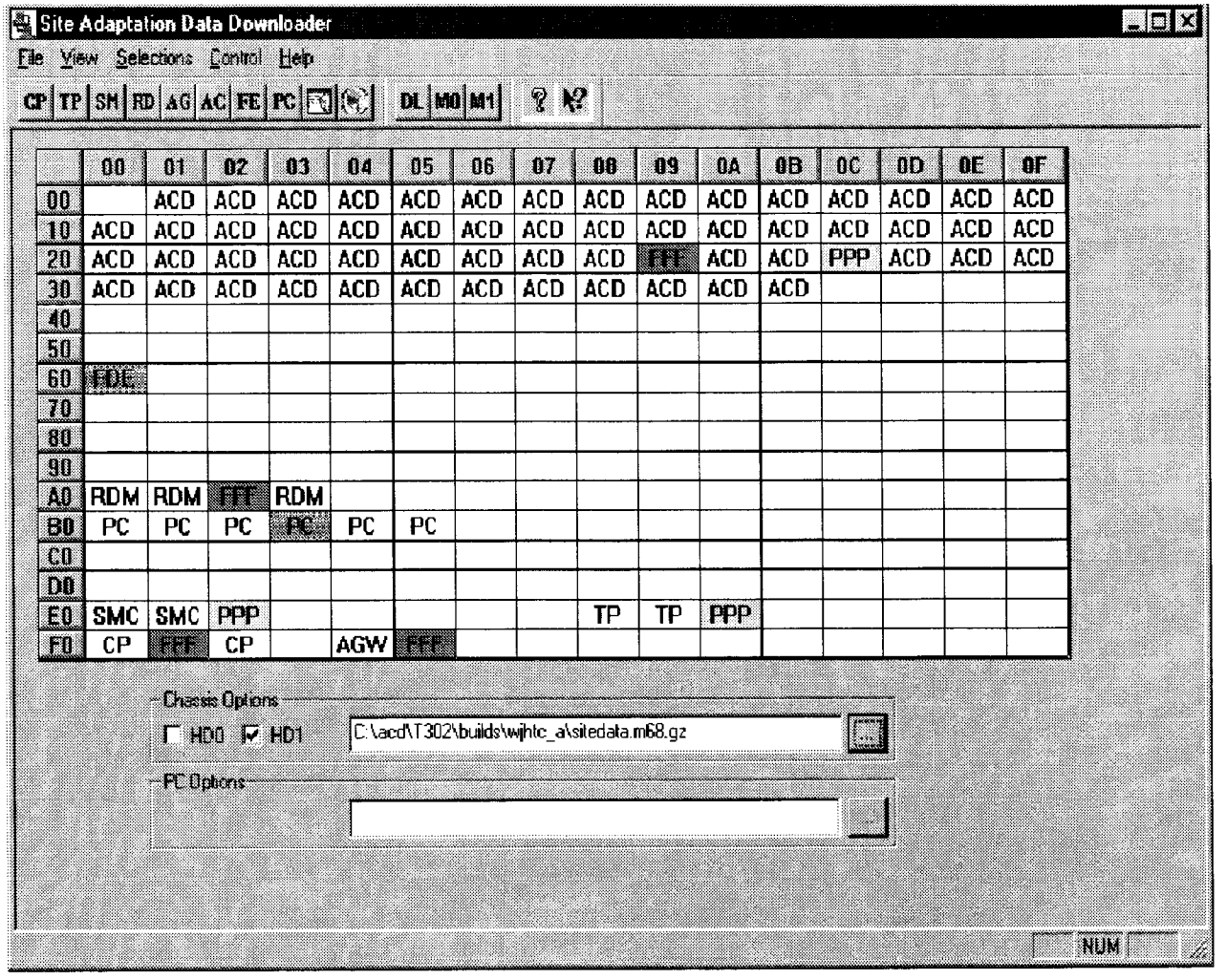


FIGURE 4-50. SITE ADAPTATION DATA DOWNLOADER WINDOW

3. To select/deselect individual NID(s) to receive download Site Adaptation images:

   (a) Place the cursor in individual grid location(s), in the Selection Table, for a specific NID(s) and click.

(b) Observe the grid location turns blue.

(c) Selections may be deselected by clicking the same grid location.

4. To select/deselect a group of NIDs to receive download Site Adaptation images:

(a) Click on the grid column or row to select all chassis within that column or row.

(b) Observe with column or row selected, the selected grid locations turn blue.

(c) Selections may be deselected by clicking the same column or row.

5. To select the Site Adaptation file to be downloaded to all chassis except SMC-PCs:

(a) Observe the Chassis Options box.

(b) Click in the HDO and/or HD1 to select which hard drive(s) the Site Adaptation will be copied from.

(c) Optionally, select Control/Burn PO or P1 or click MO or M1 from the Toolbar to select a partition of Flash memory (0 or 1) to copy the Site Adaptation data.

(d) Click on the button on the right side of the Chassis Options box.

(e) Observe an Open selection window.

(f) Observe in the List Files of Type window, an extension of .m68.gz is present.

(1) This is the system filename extension for Site Adaptation data for all chassis except SMC-PCs.

(g) Click the drive, directory(ies) until the Site Adaptation filename desired is located.

(h) Click OK to select filename and exit selection window or Cancel to exit without selection.

(i) Observe the selected path in the Chassis Options box.

6. To select the Site Adaptation file to be downloaded to the SMC-PCs:

(a) Observe the PC Options box.

(b) Click on the button on the right side of the PC Options box.

(c) Observe an Open selection window.

(d) Observe in the List Files of Type window, an extension of .i86 is present.

(1) This is the system filename extension for Site Adaptation data for all SMC-PCs.

(e) Click the drive, directory(ies) until the Site Adaptation filename desired is located.

(f) Click OK to select filename and exit selection window or Cancel to exit without selection.

(g) Observe the selected path in the PC Options box.

7. To start the Site Adaptation data download:

   (a) Select Control/Download.

   (b) Observe a three-character indication in the grid at the NID position.

      (1) PPP = green indication that the download passes.

      (2) FFF = red indication that the download fails.

4.3.10 RSM Config

RSM Config allows a user to request changes in the status of the RSM (Remote System Monitor) Configuration.

a. Special Notes:

   1. When enabling an RSM, the status of that RSM for each sensor also changes to enabled in the RSM Config Table. The user can then change the RSM status for individual sensors as desired.

   2. When inhibiting an RSM, the status of that RSM for each sensor also changes to inhibited in the RSM Config Table. The user cannot change the RSM status for a selected sensor if the overall status for that RSM is inhibited.

   3. Gray cells in the RSM Config Table indicate RSMs that are not adapted.

   4. The number of RSM sensor columns is dependent on the data provided by the site adaptation file.

   5. An SMC-PC in the Non-SMS or Host Down state cannot request this function.

b. RSM Configuration operation:

   1. Click the RSM Config icon (Figure 4-13).

   2. Observe the RSM Config window (Figure 4-51).

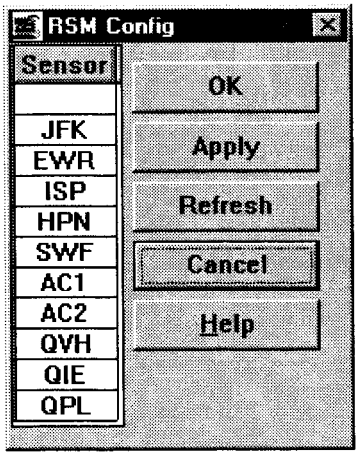


FIGURE 4-51. RSM CONFIG WINDOW

(a) RSM Status:

(1) To enable an RSM for all sensors:

a Locate the first row entry under the appropriate RSM column.

b If green with an "E" (Enabled), the RSM is already enabled.

c If red with an "I" (inhibited), click on the red box.

d Observe the cell becomes green with an "E".

(2) To inhibit an RSM for all sensors:

a Locate the first row entry under the appropriate RSM column.

b If red with an "I" (Inhibited), the RSM is already inhibited.

c If green with an "E" (Enabled), click on the green box.

d Observe the cell becomes red with an "I".

(3) Click on OK to change RSM status and exit or cancel to exit without change or,

(4) Click on Apply to execute the function and not exit and/or Refresh to set selection window to original status.

(5) Observe the Sensor Status Report (Figure 4-150) to confirm the RSM status.

(b) RSM Status for a Selected Sector:

(1) To enable an RSM for a selected sensor:

a Locate the cell in the RSM Config Table corresponding to the selected sensor and RSM.

b If green with an "E" (Enabled), the RSM is already enabled for that sensor.

c If red with an "I" (Inhibited), click on the red box.

d Observe the cell becomes green with an "E".

(2) To inhibit an RSM for a selected sensor:

a Locate the cell in the RSM Config Table corresponding to the selected sensor and RSM.

b If red with an "I" (Inhibited), the RSM is already inhibited for that sensor.

c If green with an "E" (Enabled), click on the green box.

d Observe the cell becomes red with an "I".

(3) Click on OK to change RSM status for sensor and exit, or cancel to exit without change or,

(4) Click on Apply to execute the function and not exit and/or Refresh to set selection window to original status.

(5) Observe the Sensor Status Report (Figure 4-150) to confirm the RSM status for selected sensor.

4.3.11 RDM Automatic Switching

RDM Automatic Switching allows a user to enable or disable automatic switching to either of its Remote Display Multiplexer (RDM) interfaces for individual remote displays or for all displays with interfaces to a specified RDM pair.

a. Special Notes:

1. Enable automatic switching to either RDM interface for the Remote Display Buffer Memory (RDBM) connected to the user-specified display number.

2. Disable automatic switching for the RDBM connected to the user-specified display number, locking the RDBM onto the RDM selected by the user.

3. Enable automatic switching for all RDBMs with interfaces to the user-specified RDM pair.

4. Disable automatic switching for all RDBMs with an interface to the RDM selected by the user, locking the RDBMs onto that RDM.

5. An SMC-PC in the Non-SMS or Host Down state cannot request this function.

b. RDM Automatic Switching operation:

1. Click the RDM Automatic Switching icon (Figure 4-13).

2. Observe the RDM Automatic Switching window (Figure 4-52).

3. To individually set **a** remote display:

(a) Review the Remote Display # column to locate the individual display.

(b) Use the scroll bar on the right side of the columns.

(1) Click on the up/down arrows to move the list one position up or down or,

(2) Click in the area between the slider bar and an arrow will move the list several positions or,

(3) Click and hold on the slider bar, then move the mouse position forward or backward to rapidly move through the list.

(c) In the Auto Switching Status column for the display, click to toggle the current condition. Green with an "E" enables auto switching; red with an "I" inhibits switching.

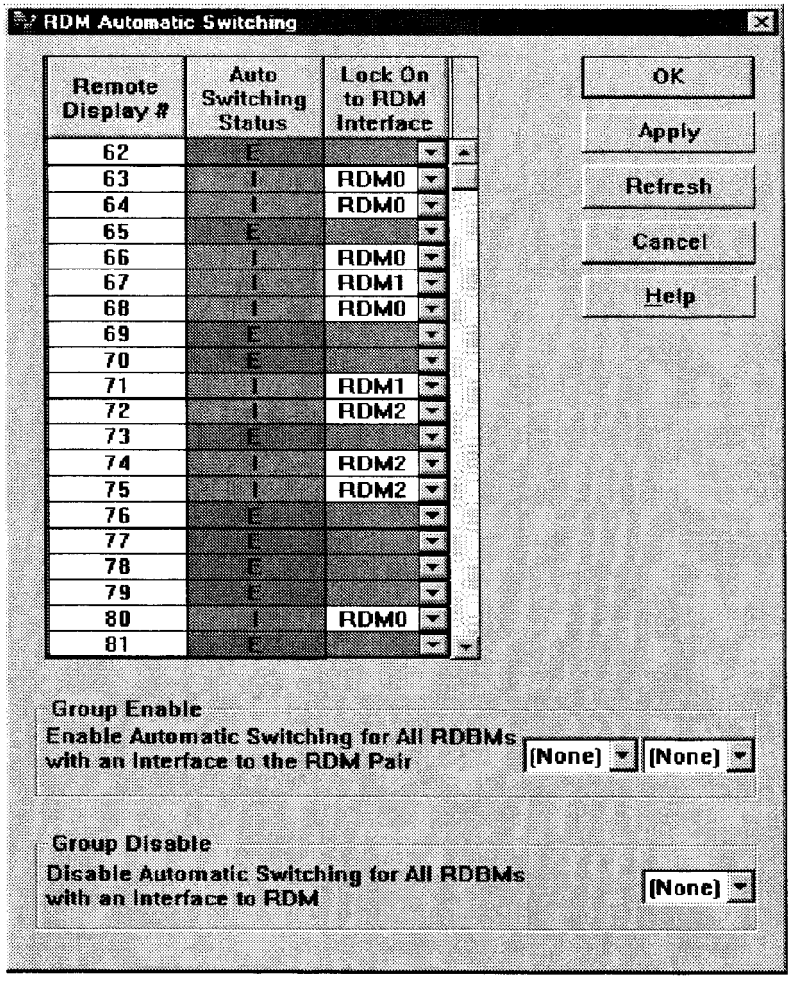


FIGURE 4-52. RDM AUTOMATIC SWITCHING WINDOW

(d) If Auto Switching Status is inhibited, an optional setting may be made in the Lock On to RDM Interface column:

(1) Click on the arrow associated with the individual display.

(2) Observe a menu with (None), along with a list of RDMs.

(3) Click on the desired RDM to lock on to if auto switching is inhibited, or (None) if no lock on desired.

(4) Observe the selected RDM is retained in the Lock On to RDM Interface column window.

(5) Click OK to set a remote display for auto switching and exit or Cancel to exit without change or,

(6) Click Apply to execute the function and not exit and/or Refresh to set selection window to original status.

4. To enable group automatic switching:

   (a) Observe Group Enable box with statement about Automatic Switching for all RDBMs.

   (b) To select the RDM pair:

      (1) Click on the arrow(s) in the Group Enable box.

      (2) Observe menus with (None), along with a list of RDMs.

      (3) Click on the desired RDM in each menu.

      (4) Observe the selected RDM pair is retained in the windows.

      (5) Click OK to enable a group of RDBMs for auto switching and exit or Cancel to exit without change or,

      (6) Click Apply to execute the function and not exit and/or Refresh to set selection window to original status.

5. To disable automatic switching:

   (a) Observe Group Disable box with statement about Automatic Switching for all RDBMs.

   (b) To select the RDM:

      (1) Click on the arrow in the Group Disable box.

      (2) Observe menus with (None), along with a list of RDMs.

      (3) Click on the desired RDM in each menu.

      (4) Observe the selected RDM pair is retained in the windows.

      (5) Click OK to disable a group of RDBMs for auto switching and exit or Cancel to exit without change or,

      (6) Click Apply to execute the function and not exit and/or Refresh to set selection window to original status.

4.3.12 Sign On/Sign Off

Sign On/Sign Off allows the user to sign on or off one or more keyboard positions and/or request a summary status report.

a. Special Notes:

   1. A time field may be specified by the user, otherwise the system time is used.

   2. System time may be adjusted to local time at the discretion of the site.

   3. When signing off a keyboard position, the user specifies the position with which the closing position will be combined.

   4. A Summary Report may be requested and printed.

5. An SMC-PC in the Non-SMS or Host Down state cannot request this function.

b. Sign On/Sign Off operation:

1. Click SignOn/SignOff (Figure 4-l 3).

2. Observe the SignOn/SignOff window (Figure 4-53).

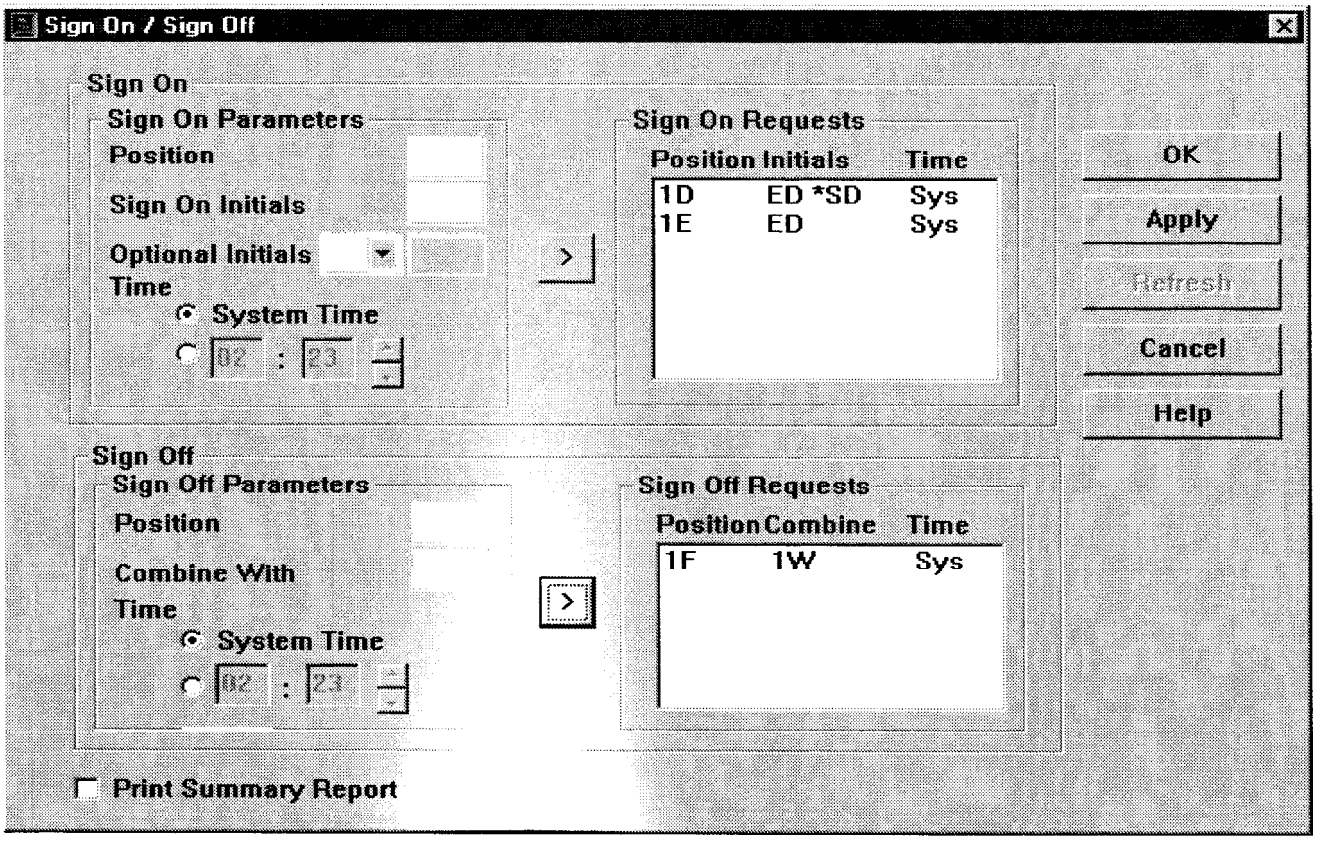


FIGURE 4-53. SIGN ON/SIGN OFF WINDOW

3. To sign on:

(a) Place the cursor in the Position box.

(b) Click and enter the keyboard position.

(c) Place the cursor in the Sign On Initials box.

(d) Click and enter the initials of the individual controlling this position.

(e) Place the cursor in the Optional Initials box.

(f) Optionally click and enter the developmental operator's initials.

(g) Optionally click the developmental operator's function.

(h) Select the arrow to scroll through the optional initial functions (SI = Instructor, SE = Evaluator, SC = Certifier).

(i) Select the correct function and click.

(j) Optionally click the System Time button or local time button:

(1) System time indicates WWVB time.

(2) Local time may be set by clicking in the hours or minutes box(es) and using the arrows to set the appropriate time. The up arrow increases the hours or minutes, the down arrow decreases the hours or minutes or,

a Place the cursor in either box, delete the numeric, and type in the new numeric or,

b Place the cursor in either box, hold the left mouse button down, and select/block the numeric. Type in the new numeric.

(k) Observe the Sign On Requests box contains the entered data.

(1) Click on right side of Sign-On box.

(2) Click OK to implement the sign on and exit or Cancel to exit without Sign On, or

(3) Click Apply to execute the function and not exit and/or Refresh to set selection window to original status.

4. To sign off:

(a) Place the cursor in the Position box.

(b) Click and enter the keyboard position that will be signed off.

(c) Place the cursor in the Combine With box.

(d) Click and enter the keyboard position which the sign off position will be combined with.

(e) Optionally click the System Time button or local time button

(1) System time indicates WWVB time.

(2) Local time may be set by clicking in the hours or minutes box(es) and using the arrows to set the appropriate time. The up arrow increases the hours or minutes, the down arrow decreases the hours or minutes or,

a Place the cursor in either box, delete the numeric, and type in the new numeric or,

b Place the cursor in either box, hold the left mouse button down, and select/block the numeric. Type in the new numeric.

(f) Observe the Sign Off Requests box contains the entered data.

(1) Click on right side of Sign-On box.

(g) Click OK to implement the sign off and exit or Cancel to exit without Sign Off or,

(h) Click Apply to execute the function and not exit and/or Refresh to set selection window to original status.

5. To print a Summary Report:

(a) Click in the Print Summary Report box.

(b) Observe an “x” in the box adjacent to the Print Summary Report box.

(c) A summary report of the open/closed status of all adapted keyboard positions is printed on the HSP.

(d) When the report is printed, the “x” disappears from the box.

4.3.13 Preference Set Config

Preference Set Config allows the user to synchronize preference sets between two displays.

a. Special Notes:

1. An SMC-PC in the Non-SMS or Host Down state cannot request this function.

b. Preference Set Configuration operation:

1. Click Preference Set Config (Figure 4-13).

2. Observe the Preference Set Config window (Figure 4-53A).

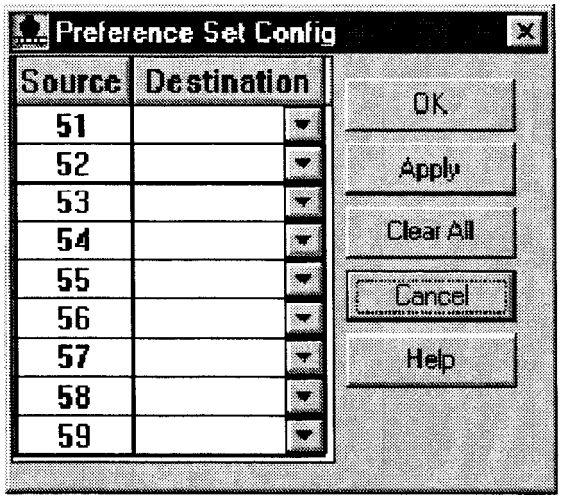


FIGURE 4-53A. PREFERENCE SET CONFIG WINDOW

3. To synchronize preference sets between two displays, select the destination display in the dropdown next to the source display (Figure 4-53B).

(a) Click OK to complete synchronization and exit or Cancel to exit without change or,

(b) Click Apply to execute the function and not exit and/or Clear All to clear selection.

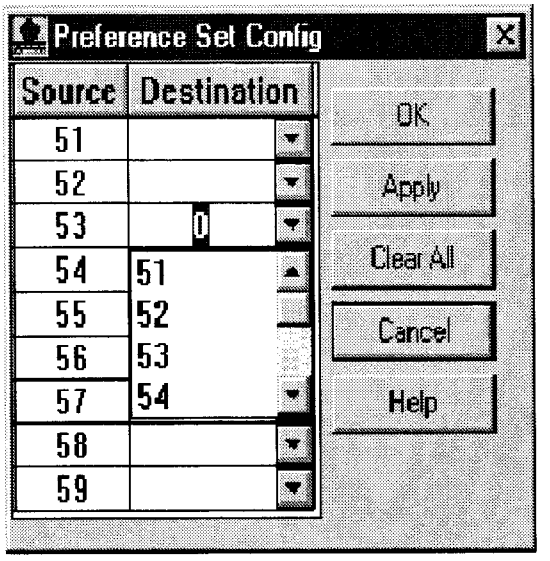


FIGURE 4-53B. DESTINATION DISPLAY PREFERENCE SET CONFIG WINDOW

4.4 FUNCTION CONFIGURATION

The Function Config group contains a suite of applications which controls the status and configuration of ARTS system functions.

a. Function Configuration operation:

1. Click Function Config in the Programs group (Figure **4-4).**

2. Observe the Function Config program group (Figure **4-54).**

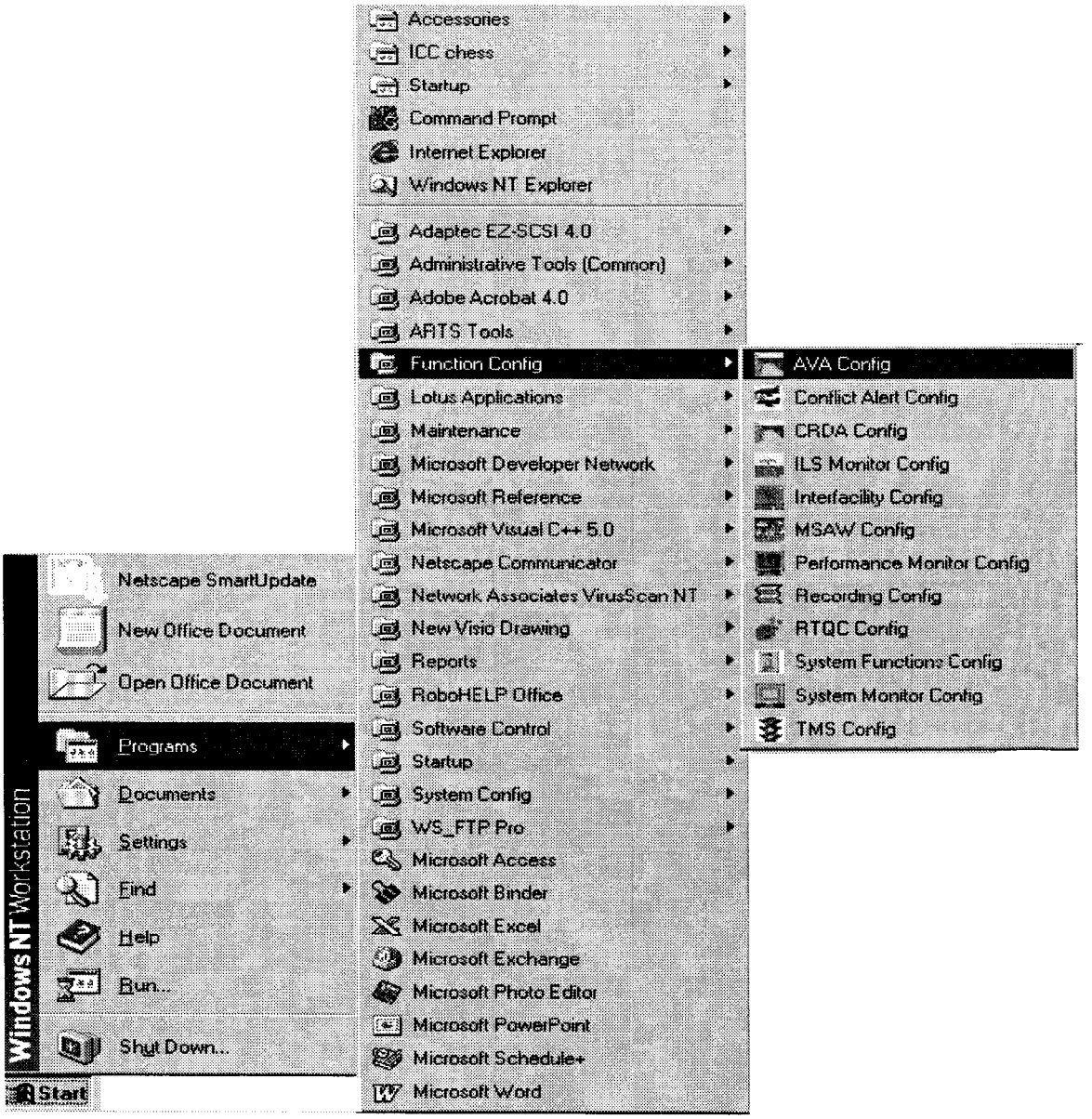


FIGURE 4-54. FUNCTION CONFIGURATION GROUP

4.4.1 MSAW Config

MSAW Config allows a user to modify MSAW related settings. From this window the user can enable or inhibit MSAW, Approach Path Monitor, and one or more MSAW General Terrain Map (GTM) regions.

a. Special Notes

1. An SMC-PC in the Non-SMS or Host Down state cannot request this function.

b. MSAW Configuration operation:

1. Click MSAW Config (Figure 4-54).

2. Observe the MSAW Config window (Figure 4-55).

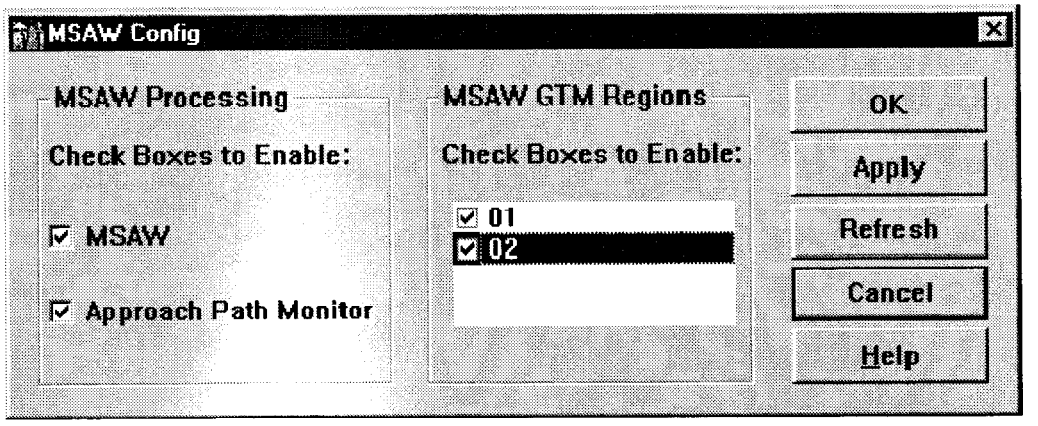


FIGURE 4-55. MSAW CONFIGURATION WINDOW

(a) MSAW Processing:

(1) Click **in the** MSAW and/or the Approach Path Monitor box(es) to enable one or **both** of these functions.

(2) A "✓" **appears** in the box indicating an enable of that function. A blank window **indicates an** inhibit of that function.

(3) Click **OK to** inhibit/enable MSAW processing and exit or Cancel to exit with no **change** to previous settings.

(4) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

(5) Observe the Function Status Report (Figure 4-158) to confirm the selected MSAW Configuration function(s).

(b) MSAW GTM Regions:

(1) Click in box(es) to change GTM region. A check mark in a region box indicates enabled; a blank box indicates inhibited.

a Ensure you click the checkbox and not the GTM Region number. Highlighting the number does not select.

(2) Click OK to inhibit/enable MSAW GTM regions and exit or Cancel to exit with no change to previous settings.

(3) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

4.4.2 Interfacility Config

Interfacility Config allows a user to specify IF related settings.

a. Special Notes:

1. The user may also toggle the status of any or all print classes to be enabled/disabled for printing.

2. Setting multiple boxes in this window requires only one selection of the OK button.

3. If the ARTCC interface is disabled, no data processing selection is possible.

4. An SMC-PC in the Non-SMS or Host Down state cannot request this function.

b. Interfacility Configuration operation:

1. Click Inter-facility Config (Figure 4-54).

2. Observe the inter-facility Config window (Figure 4-56).

(a) Interfacility Processing:

(1) To enable or disable Inter-facility processing, click in the box(es) next to the site adapted ARTCC Interface designator (ZCN, ZCB, or UDS). An initial blank box indicates disabled, and a box with a "✓" indicates enabled. Clicking in the box toggles the enabled/disabled state.

(2) Click OK to enable/disable Inter-facility processing of ARTCC interfaces and exit or Cancel to exit without change.

(3) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

(4) Observe the Function Status Report to confirm the selected Inter-facility Processing.

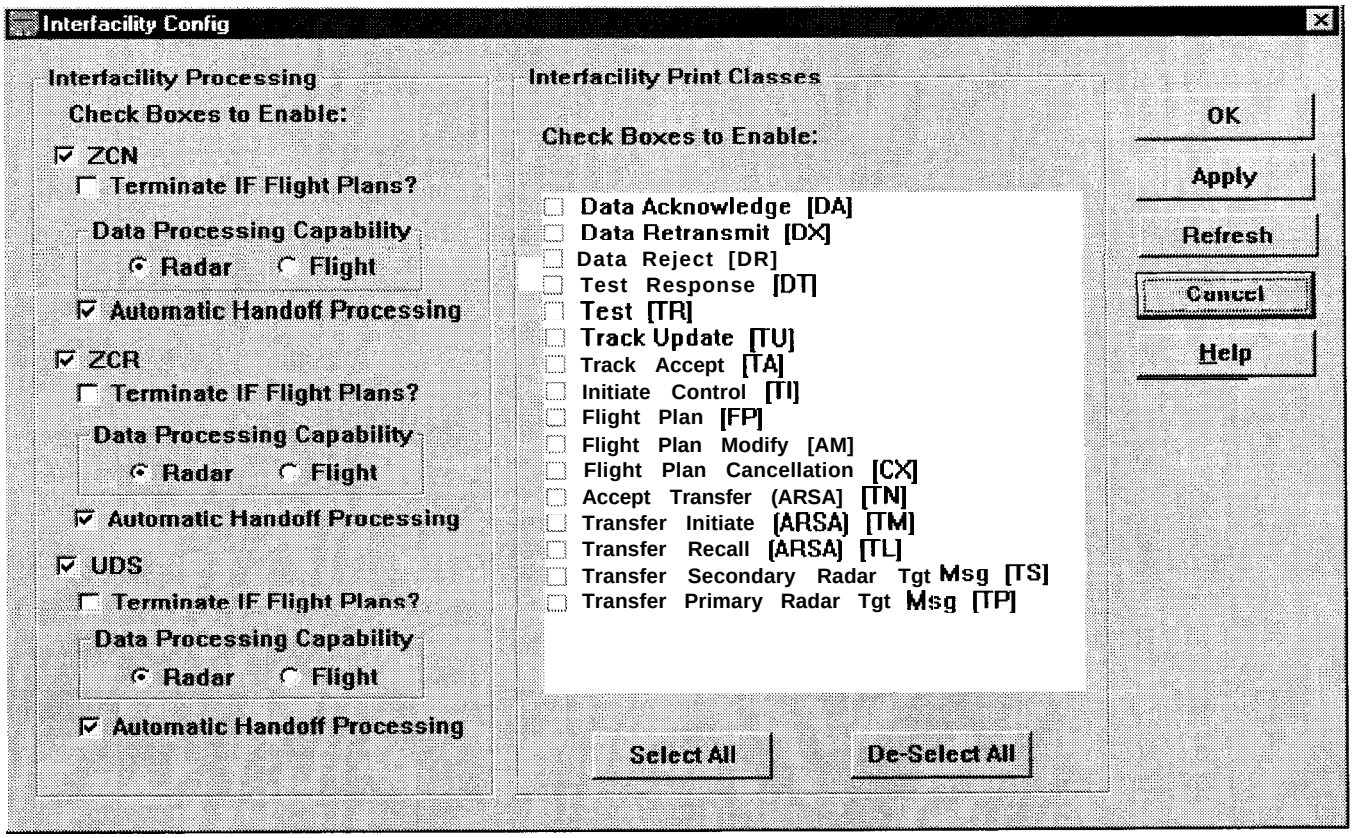


FIGURE 4-56. INTERFACILITY CONFIG WINDOW

(b) Terminate IF Flight Plans:

(1) To select Terminate IF Flight Plans? for each of the ARTCC interfaces, click the box(es) next to Terminate IF Flight Plans. A box with a "✓" indicates enabled. Clicking in the box toggles the enabled/disabled state.

(2) Click OK to select Terminate IF Flight Plans Processing and exit or Cancel to exit without change.

(3) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

(4) Observe a confirmation message appears (Figure 4-57). Click Yes to confirm or No to cancel the Terminate IF Flight Plan for the selected ARTCC.

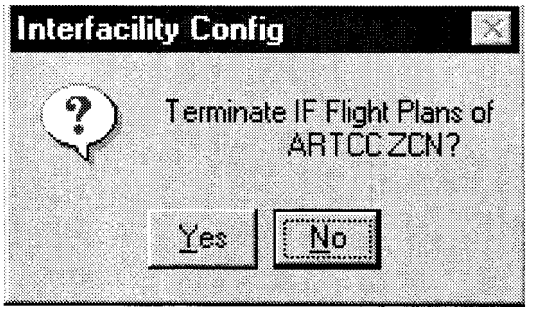


FIGURE 4-57. INTERFACILITY DIALOG WINDOW

(c) Data Processing Capability:

(1) To select Radar or Flight data processing, click on either Radar or Flight for each of the ARTCC interfaces. Only one may be selected/highlighted.

(2) Observe if Radar data processing is selected, Automatic Handoff Processing is available for enabling or disabling. If Flight data processing is selected, Automatic Handoff is not available for enabling or disabling.

(3) Click OK to select the current Radar or Flight data processing indications and exit or Cancel to exit without change.

(4) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

(d) Automatic Handoff Processing:

(1) To select Automatic Handoff processing for each of the ARTCC interfaces, click the box(es) next to Automatic Handoff Processing. A box with a "✓" indicates enabled. Clicking in the box toggles the enabled/disabled state.

(2) Click OK to select the current Automatic Handoff processing indications and exit or Cancel to exit without change.

(3) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

(e) Inter-facility Print Classes:

(1) Click in box(es) to change the Print Classes. A check mark in a box indicates enabled: a blank box indicates inhibited.

a Ensure you click in the checkbox and not on the Print Class name. Highlighting the name does not select.

b Click Select All to have all of the checkboxes automatically checked.

c Click Deselect All to have all the checkboxes automatically cleared.

(2) Click OK to enable/disable the current Inter-facility Print Classes and exit or Cancel to exit with no change to previous settings.

(3) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

(4) The Function Status Report can be observed to confirm the I/F print classes.

4.4.3 Conflict Alert Config

Conflict Alert Config allows a user to modify Conflict Alert related settings.

a. Special Notes:

1. An SMC-PC in the Non-SMS or Host Down state cannot request this function.

b. Conflict Alert operation:

1. Click Conflict Alert Config (Figure 4-54).

2. Observe the Conflict Alert Config window (Figure 4-58).

(a) Processing Status:

(1) To enable Conflict Alert and/or Mode C Intruder:

a Place the cursor in the blank box(es) adjacent to Conflict Alert and/or Mode C Intruder and click.

b Observe a "✓" appears in the box(es).

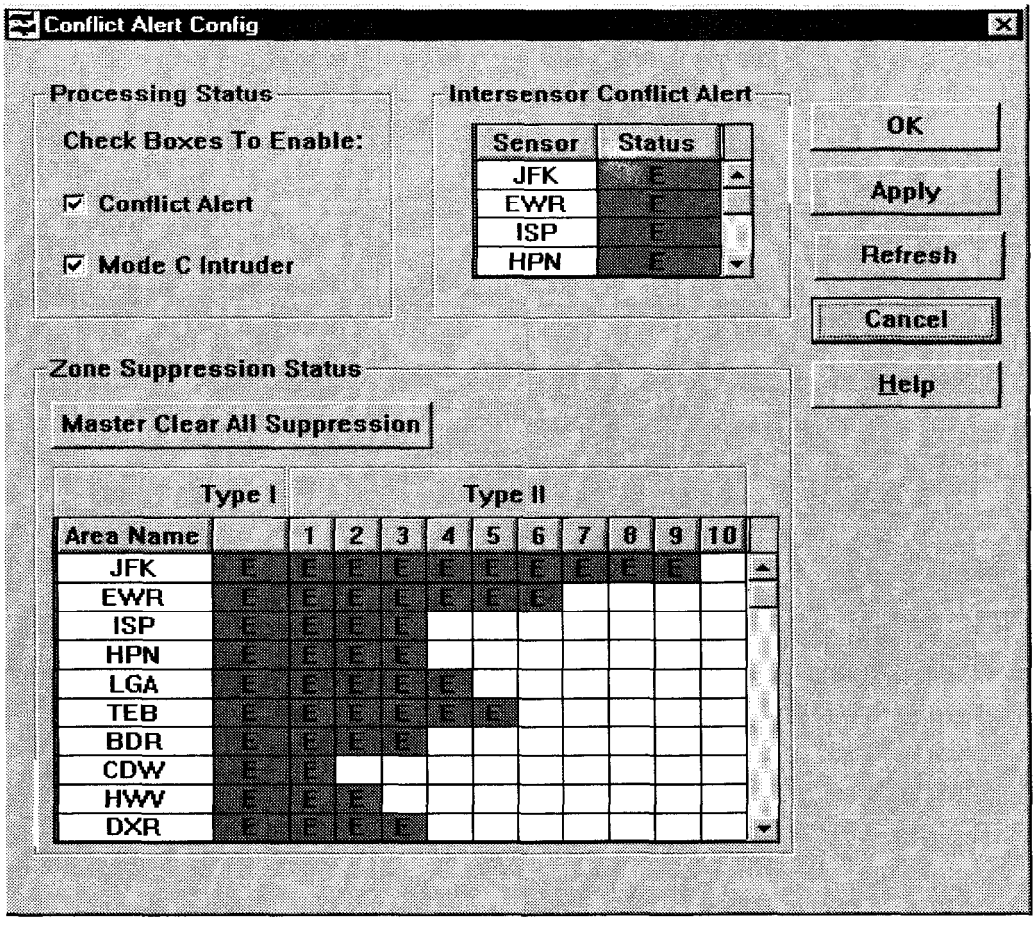


FIGURE 4-58. CONFLICT ALERT CONFIG WINDOW

(2) To disable Conflict Alert and/or Mode C Intruder:

a Place the cursor in the box(es) adjacent to Conflict Alert and/or Mode C intruder and click.

b Observe the "✓" is removed.

(3) Click OK to complete enable/disable and exit or Cancel to exit without change or,

(4) Click Apply to execute the function and not exit and/or Refresh to set selection window to original status.

(5) The Function Status Report can be observed to confirm the CA/MCI processing status.

(6) When CA is enabled via this window, any type I/II areas previously suppressed (Red S) will be cleared after exiting the window.

(b) Intersensor Conflict Alert:

(1) To enable Intersensor Conflict Alert for each of the sensors in the system:

a Click on the arrows to display a particular sensor identifier,

b If green with an "E" (Enabled) in the status column for that sensor, it is enabled.

c If red with an "I" (Inhibited) in the status column for that sensor, click on the red box.

d Observe cell becomes green with an "E" in the status column.

(2) To inhibit Intersensor Conflict Alert for each of the sensors in the system, click on the arrows to display a particular sensor identifier.

a If red with an "I" (Inhibited) in the status column for that sensor, it is inhibited.

b If green with an "E" (Enabled) in the status column for that sensor, click on the green box.

c Observe cell becomes red with an "I" in the status column.

(3) Click on OK to activate Intersensor Conflict Alert change and exit or Cancel to exit without change or,

(4) Click Apply to execute the function and not exit and/or Refresh to set selection window to original status.

(5) Observe the Function Status Report (Figure 4-158) to confirm the selected Intersensor Conflict Alert function.

(c) Zone Suppression Status:

(1) To enable or suppress Conflict Alert for an airport Type I/II areas:

a Click in the Type I or Type II column for a specific airport. Each airport row is adapted for the Type II areas (I-10).

b If green with an "E", Conflict Alert is enabled for that area.

c If red with an "S", Conflict Alert is suppressed for that area.

(2) Clicking on the Master Clear All Suppression button removes all suppression (red with “S”) to enabled for both Type I and Type II areas.

(3) Click on OK to activate Zone Suppression Status change and exit or Cancel to exit without change or,

(4) Click Apply to execute the function and not exit and/or Refresh to set selection window to original status.

3. The Conflict Alert Config function validates each entry and sends the message to a chassis application. If the entry is a valid entry, but not appropriate in the current chassis state, an error message is displayed in the System Monitor window. Observe the Function Status Report (Figure **4-158)** for confirmation of the modified system function.

4.4.4 System Monitor Config

System Monitor Config allows a user to specify which classes of messages from the System Monitor will be displayed/printed and the printer destination.

a. Special Notes:

1. An SMC-PC in the Non-SMS or Host Down state cannot request this function.

2. The default for this function is all message classes are enabled and printed on the Echo Printer.

b. System Monitor operation:

1. Click System Monitor Config (Figure 4-54).

2. Observe the System Monitor Config window (Figure 4-59).

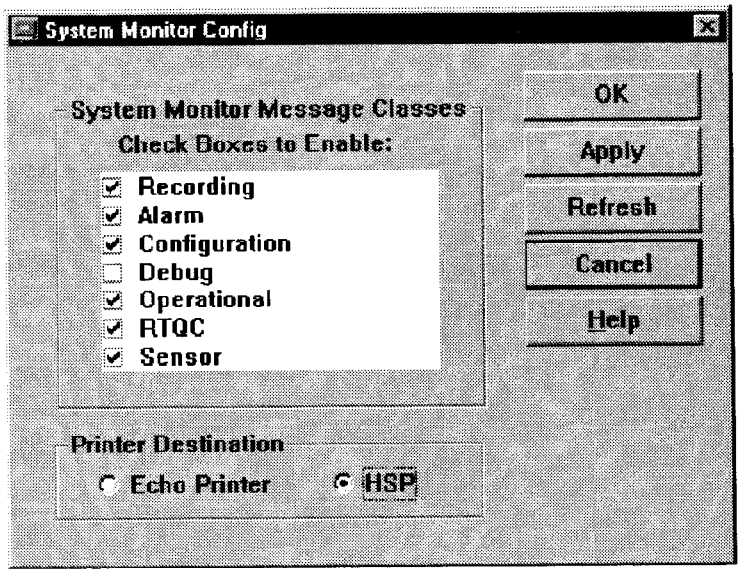


FIGURE 4-59. SYSTEM MONITOR CONFIG WINDOW

3. To enable a System Monitor Message Class:

   (a) Click in the box(es) next to the message class to be changed. An initial blank box indicates disabled, and a box with a check mark indicates enabled. Clicking in the box toggles the enabled/disabled state.

   (b) Ensure you click in the checkbox and not on the message class name. Highlighting the name does not select.

4. To direct the printing output from the enabled messages:

   (a) Click on either the Echo Printer or High Speed Printer (HSP).

5. Click on OK to complete the enable/disable classes and/or printer change and exit or Cancel to exit without change or,

6. Click Apply to execute the function and not exit and/or Refresh to set selection window to original status.

7. Observe the Function Status Report (Figure 4-158) to confirm the selected PC message print classes.

4.4.5 Performance Monitor Config

Performance Monitor Config allows the user to enable or disable performance monitoring and reporting:

a. Special Notes:

   1. The TP and CP Summary and Coordinated reports are initiated at system start-up and/or restart with an output/print interval of one hour.

   2. The TP Coordinated Report must be disabled before the TP CPU Performance Monitoring or the Radar/Beacon Target Report Monitoring may be enabled.

   3. The CP Coordinated Report must be disabled before the CP CPU Performance Monitoring or the Central Track Store Monitoring may be enabled.

   4. Performance Monitoring is not available on RDBM or Training displays.

   5. Maximum reports carry over report values from one interval to another.

   6. The following reports are available for enabling or disabling. Unless otherwise specified, the operator can also enable/inhibit the maximum function, enable/inhibit reporting, and enter a report interval in hours and minutes.

      (a) Central Track Store (CTS) Monitoring

      (b) Radar/Beacon Target Report (RTR) Monitoring

      (c) CP CPU Performance Monitoring

      (d) TP CPU Performance Monitoring

      (e) CP Coordinated Report (COR)

      (f) TP Coordinated Report

(g) CP Summary Report (SUM)

(h) TP Summary Report

(i) DP Performance Report

(j) Beacon/Radar On-line Performance Monitor (BROPM)

(k) CQARS On-Line Performance Monitor.

7. An SMC-PC in the non-SMS or Host Down state cannot request this function.

b. Performance Monitoring operation:

1. Click Performance Monitor Config (Figure 4-54).

2. Observe the Performance Monitor Config window (Figure 4-60).

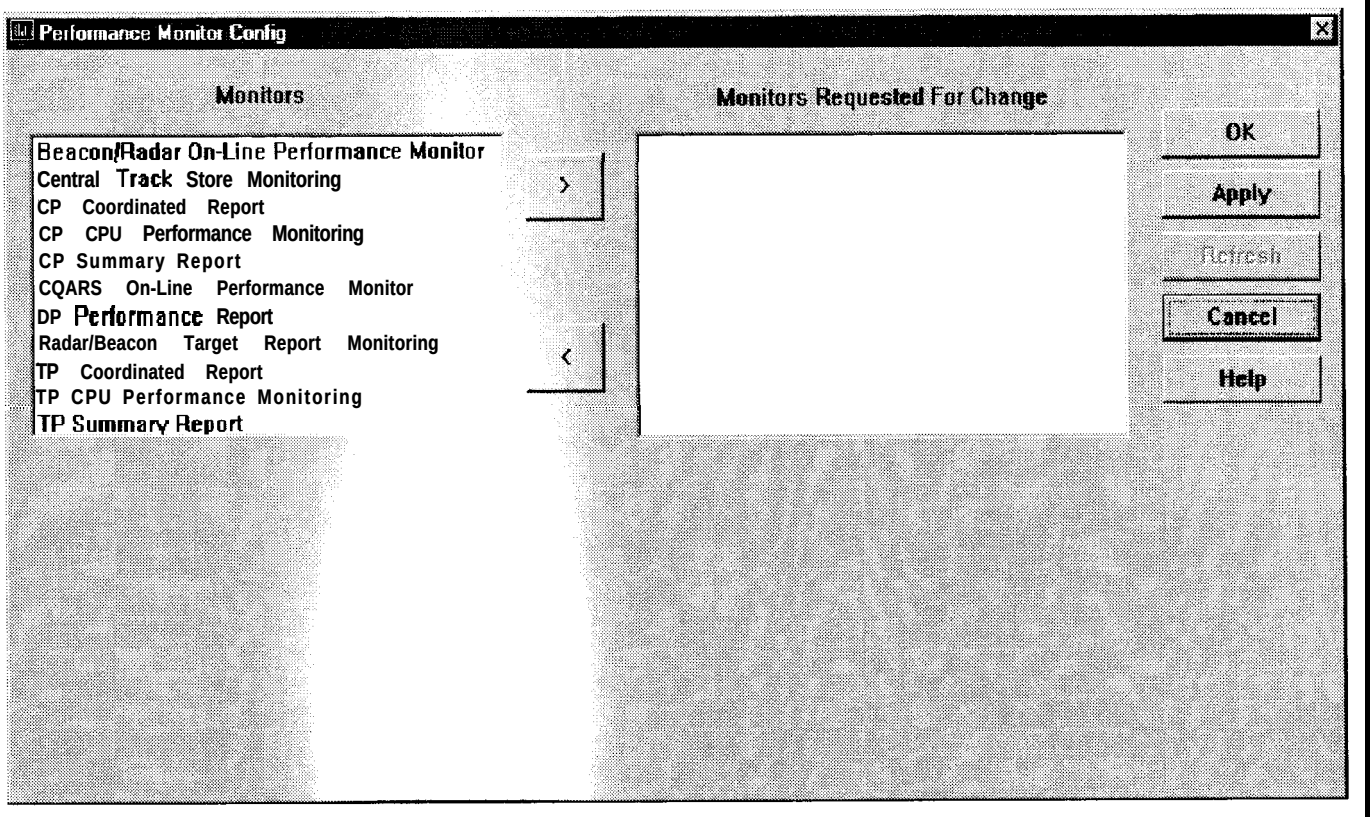


FIGURE 4-60. PERFORMANCE MONITOR CONFIG WINDOW

3. Observe lists of Monitors and Monitors Requested For Change.

4. To move individual Monitors between lists:

(a) Click on a Monitor in either list (it becomes highlighted) and then click on the < or the > button to move that class to the alternate list.

(b) Double clicking on a Monitor also moves that class to the alternate list.

5. Moving a Monitor to Monitors Requested For Change creates other parameter fields necessary to complete the monitor report.

6. If Central Track Store Monitoring, CP Coordinated Report, CP CPU Performance Monitoring, Radar/Beacon Target Report Monitoring, TP Coordinated Report, or TP CPU Performance Monitoring is selected:

   (a) Observe parameter fields in lower portion of client area.

   (b) Observe the selected monitor title is the title of the parameter boxes.

      (1) If the Enable Report With These Parameters box is gray shaded, the report is disabled.

      (2) Clicking on the Enable Monitoring radio button enables the parameter fields to be functional.

      (3) Clicking on the Toggle Monitoring radio button disables the parameter fields, if enabled.

   (c) Click on one of the radio buttons to select Inhibit Maximum Function, Maximum Data, No Report, or Maximum Data, With Report.

   (d) To select the Report Interval:

      (1) Place the cursor in either of the boxes and click. Then use the up/down arrows to increase/decrease the report interval (HH:MM) or,

      (2) Place the cursor in either box, delete the numeric, and type in the new numeric or,

      (3) Place the cursor in either box, hold the left mouse button down, and select/block the numeric. Type in the new numeric.

   (e) To select the Print Report interval between maximum reports:

      (1) Click on the up/down arrows to increase/decrease the print report or,

      (2) Place the cursor in the box, delete the numeric, and type in the new numeric or,

      (3) Place the cursor in the box, hold the left mouse button down, and select/block the numeric. Type in the new numeric.

   (f) Click OK to change the parameters for the selection in the Monitors Requested For Change box and exit or Cancel to exit without change or,

   (g) Click Apply to execute the function and not exit and/or Refresh to set selection window to original status.

   (h) See the following figures for a sample printout of the selected reports:

      (1) Figure 6-10 — Central Track Store (CTS) Monitoring

      (2) Figure 6-12 — CP Coordinated Report

(3) Figure 6-15 — CP CPU Performance Monitoring

(4) Figure 6-17 — Radar/Beacon Target Report (RTR) Monitoring

(5) Figure 6-21 — TP Coordinated Report

(6) Figure 6-19 — TP CPU Performance Monitoring

7. If CP Summary Report is selected (Figure 4-61):

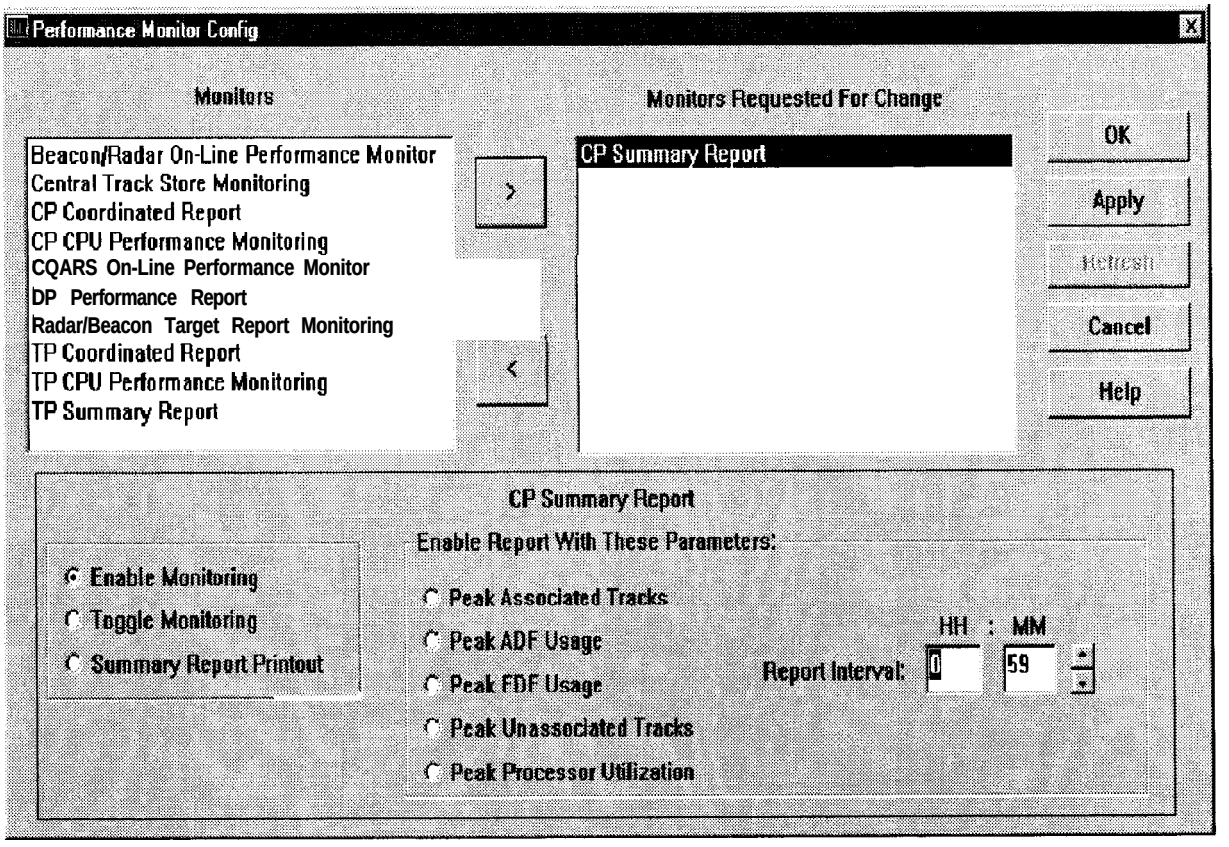


FIGURE 4-61. CP SUMMARY REPORT

(a) Observe parameter fields in lower portion of client area.

(b) Observe the selected monitor title is the title of the parameter boxes.

(1) If the Enable Report With These Parameters box is gray shaded, the report is disabled.

(2) Clicking on the Enable Monitoring radio button enables the parameter fields to be functional.

(3) Clicking on the Toggle Monitoring radio button disables the parameter fields, if enabled.

(c) Click on one of the radio buttons to select Peak Associated Tracks, Peak ADF (Active Data File) Usage, Peak FDF (Flight Data File), Peak Unassociated Tracks, or Peak Processor Utilization. (Only one button may be selected.)

(d) To select a Report Interval:

(1) Place the cursor in either of the boxes and click. Then use the up/down arrows to increase/decrease the report interval (HH:MM), or,

(2) Place the cursor in either box, delete the numeric, and type in the new numeric or,

(3) Place the cursor in either box, hold the left mouse button down and select/block the numeric. Type in the new numeric.

NOTE

OK or Apply data changes are not saved; return only previous selections exist.

(e) Click OK to change the parameters for the selection in the CP Summary Report and exit or Cancel to exit without change or,

(f) Click Apply to execute the function and not exit and/or Refresh to set selection window to original status.

(g) Observe Error Dialog box(es) if Hour (Figure 4-62) or Minute (Figure 4-63) is out of range.

(h) See Figure **6-14** for a sample printout of the CP Summary Report.

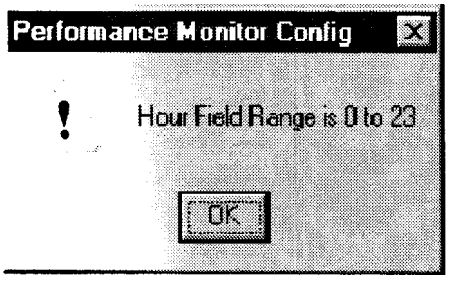


FIGURE 4-62. HOUR OUT OF RANGE DIALOG WINDOW

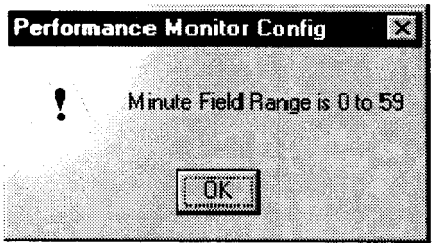


FIGURE 4-63. MINUTE OUT OF RANGE WINDOW

8. If TP Summary Report is selected (Figure 4-64):

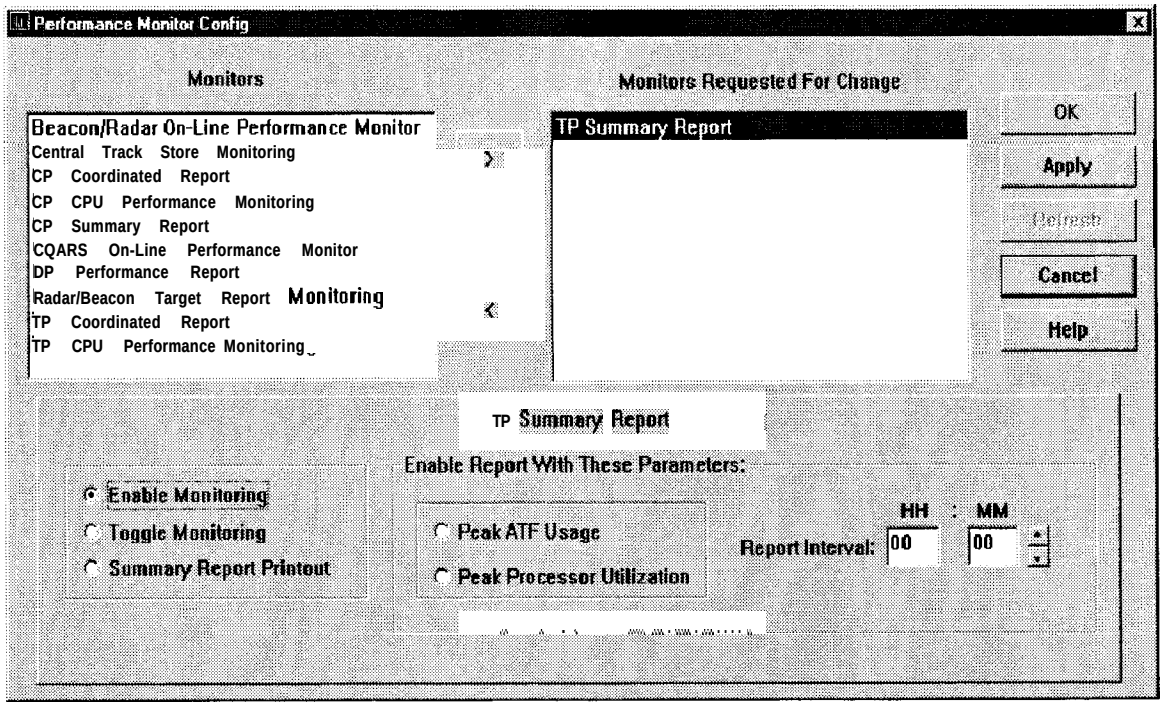


FIGURE 4-64. TP SUMMARY REPORT

(a) Observe parameter fields in lower portion of client area.

(b) Observe the selected monitor title is the title of the parameter boxes.

(1) If the Enable Report With These Parameters box is gray shaded, the report is disabled.

(2) Clicking on the Enable Monitoring radio button enables the parameter fields to be functional.

(3) Clicking on the Toggle Monitoring radio button disables the parameter fields, if enabled.

(c) Click on one of the radio buttons to select Peak ATF (Active Track File), or Peak Processor Utilization. (Only one button may be selected.)

(d) To select a Report interval:

(1) Place the cursor in either box and click. Then use the up/down arrows to increase/decrease the report interval (HH:MM) or,

(2) Place the cursor in either box, delete the numeric, and type in the new numeric or,

(3) Place the cursor in either box, hold the left mouse button down, and select/block the numeric. Type in the new numeric.

(e) Click OK to change the parameters for the TP Summary Report and exit or Cancel to exit without change or,

(f) Click Apply to execute the function and not exit and/or Refresh to set selection window to original status.

(g) Observe Error Dialog box(es) if Hour (Figure 4-62) or Minute (Figure 4-63) is out of range.

(h) See Figure 6-23 for a sample printout of the TP Summary Report.

9. If DP Performance Report is selected (Figure 4-65):

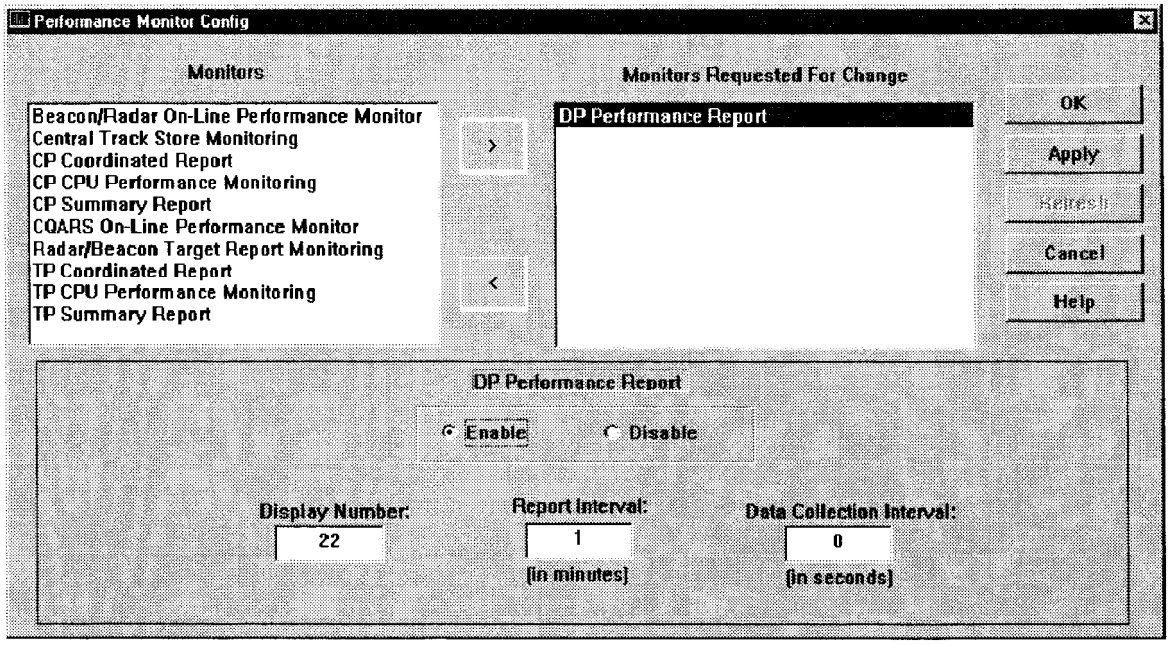


FIGURE 4-65. DP PERFORMANCE REPORT WINDOW

(a) Observe parameter fields in lower portion of client area.

(b) Observe the selected monitor title is the title of the parameter boxes.

(1) If the Enable Report With These Parameters box is gray shaded, the report is disabled.

(2) Clicking on the Enable radio button enables the parameter fields to be functional.

(3) Clicking on the Disable radio button disables the parameter fields, if enabled.

(c) To select a Display Number, Report Interval (in minutes), and/or Data Collection interval (in seconds) for the report:

(1) Place the cursor in any box, delete the numeric, and type in the new numeric or,

(2) Place the cursor in any box, hold the left mouse button down, and select/block the numeric. Type in the new numeric.

(d) Click OK to change the parameters for DP Performance Monitoring and exit or Cancel to exit without change or,

(e) Click Apply to execute the function and not exit and/or Refresh to set selection window to original status.

(f) The following Error Dialog box(es) appear if the specified conditions occur:

(1) DP Performance Report Display Number Out of Range (Figure 4-66).

(2) The display number range is dependent on the number of adapted displays.

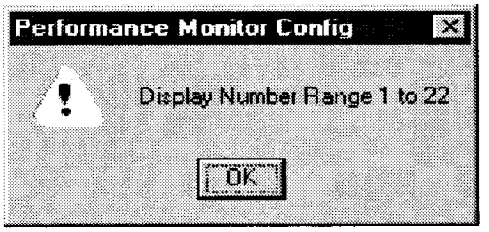


FIGURE 4-66. DP PERFORMANCE REPORT DISPLAY NUMBER OUT OF RANGE WINDOW

(3) DP Performance Report Interval Out of Range (Figure 4-67).

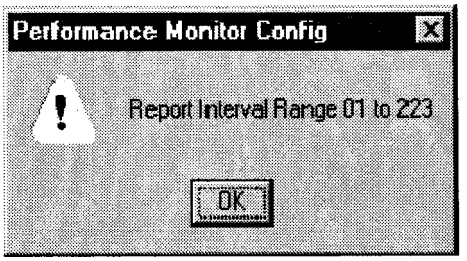


FIGURE 4-67. DP PERFORMANCE REPORT INTERVAL OUT OF RANGE WINDOW

(4) DP Performance Report Data Collection Interval Out of Range with Report Interval Equal to 1 (Figure 4-68).

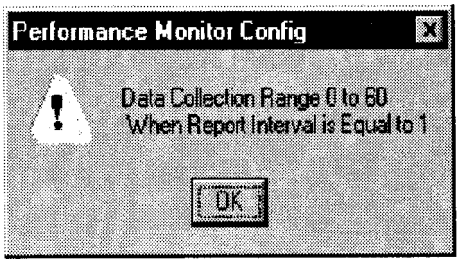


FIGURE 4-68. DP PERFORMANCE REPORT DATA COLLECTION INTERVAL OUT OF RANGE WITH REPORT INTERVAL EQUAL TO 1 WINDOW

(5) DP Performance Report Data Collection Interval Out of Range with Report Interval Greater Than 1 (Figure 4-69).

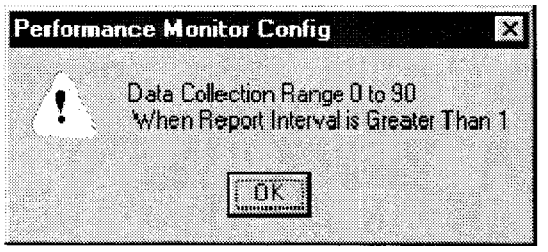


FIGURE 4-69. DP PERFORMANCE REPORT DATA COLLECTION INTERVAL OUT OF RANGE WITH REPORT INTERVAL GREATER THAN 1 WINDOW

(g) See Figure 6-24 for a sample printout of the FDP Performance Report.

10. If Beacon/Radar On-Line Performance Monitoring (BROPM) is selected (Figure 4-70):

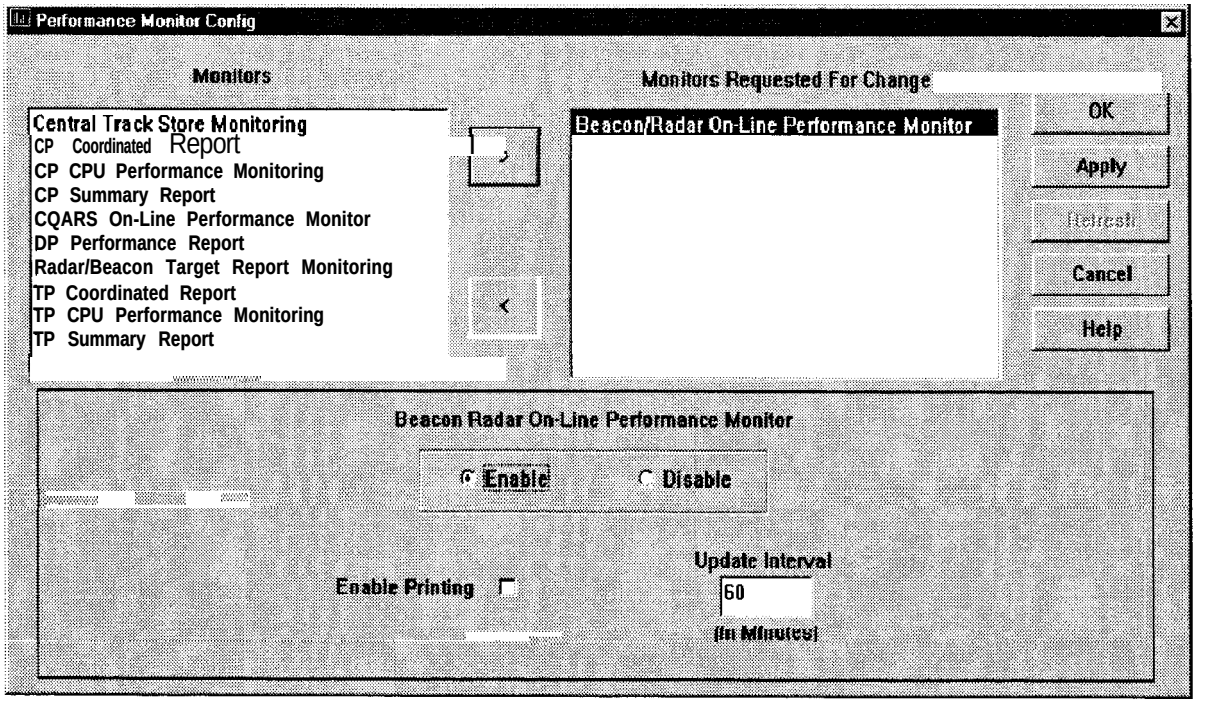


FIGURE 4-70. BROPM PERFORMANCE MONITOR CONFIGURATION WINDOW

(a) Observe parameter fields in lower portion of client area.

(b) Observe the selected monitor title is the title of the parameter boxes:

(1) If the Enable Report With These Parameters box is gray shaded, the report is disabled.

(2) Clicking on the Enable radio button enables the parameter fields to be functional.

(3) Clicking on the Disable radio button disables the parameter fields, if enabled.

(c) To select an Update Interval:

(1) Place the cursor in the box, delete the numeric, and type in the new numeric or,

(2) Place the cursor in the box, hold the left mouse button down, and select/block the numeric. Type in the new numeric.

(3) Observe an Error Dialog box (Figure 4-71) if the Update Interval is Out of Range.

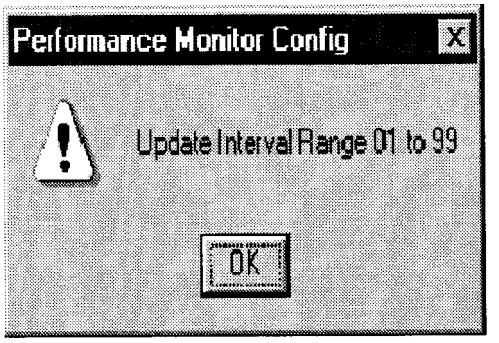


FIGURE 4-71. BEACON/RADAR ON LINE UPDATE INTERVAL OUT OF RANGE WINDOW

(d) To Enable Printing:

(1) Click on the Enable Printing title or checkbox.

(2) A "✓" in the box indicates printing enabled; a blank box indicates printing disabled.

(e) Click OK to change the parameters for the Beacon/Radar On-Line Performance Monitoring and exit or Cancel to exit without change or,

(f) Click Apply to execute the function and not exit and/or Refresh to set selection window to original status.

(g) See Figure 6-9 for a sample printout of the BROPM Performance Report.

11. If CQARS On-Line Performance Monitor is selected (Figure 4-71A):

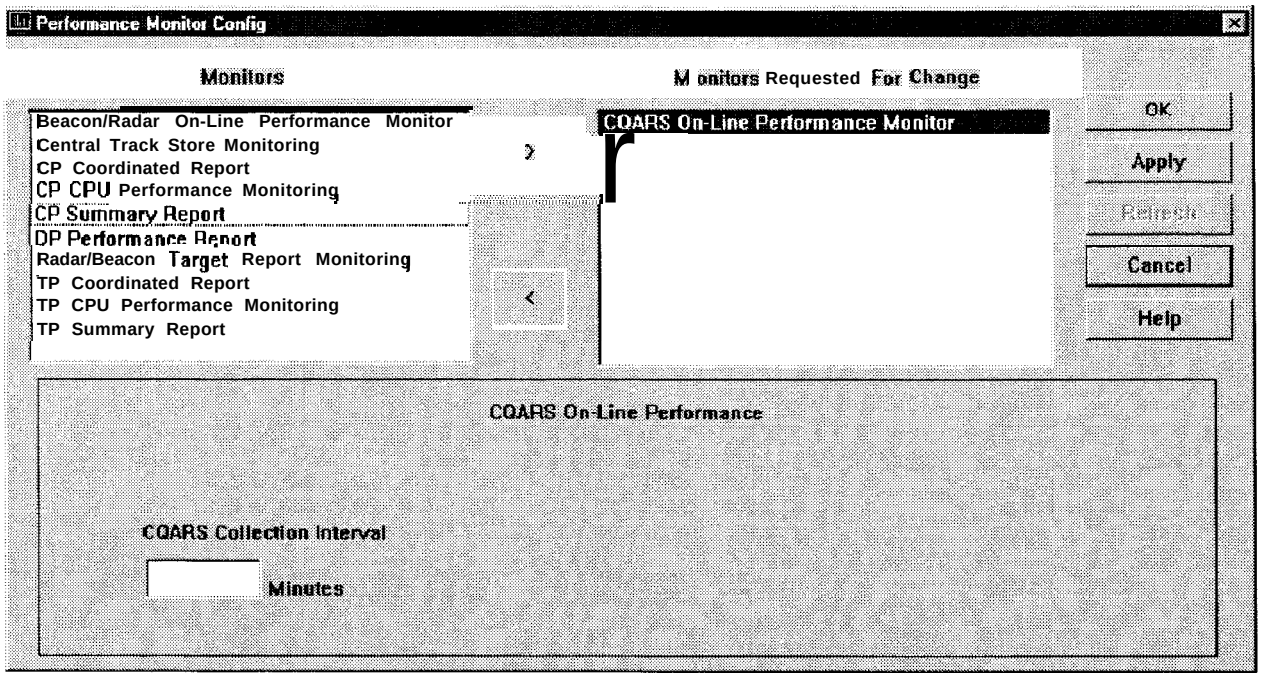


FIGURE 4-71A. CQARS PERFORMANCE MONITOR CONFIGURATION WINDOW

(a) Observe parameter field in lower portion of client area.

(b) Observe the selected monitor title is the title of the parameter boxes.

(c) To select an Update Interval:

(1) Place the cursor in the box, delete the numeric, and type in the new numeric or,

(2) Place the cursor in the box, hold the left mouse button down, and select/block the numeric. Type in the new numeric.

(3) Observe an Error Dialog box (Figure 4-71B) if the Update Interval is Out of Range.

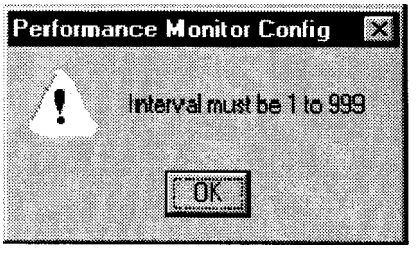


FIGURE 4-71B. CQARS ON LINE UPDATE INTERVAL OUT OF RANGE WINDOW

12. The Performance Monitor Config function validates each entry and sends the message to a chassis application. If the entry is a valid entry, but not appropriate in the current chassis state, an error message is displayed in the System Monitor window. Observe the Function Status Report (Figure 4-l 58) for confirmation of the modified system function.

4.4.6 Recording Config

Recording Config allows the user to specify CDR and PD-PC recording related settings.

a. Special Notes:

1. If a disk is down, it cannot be made available. (See paragraph 4.5.11 for Disk Utilities.)

2. An SMC-PC In the Non-SMS or Host Down state cannot request this function.

b. Recording Config operation:

1. Click Recording Config (Figure 4-54).

2. Observe the Recording Config window (Figure 4-72).

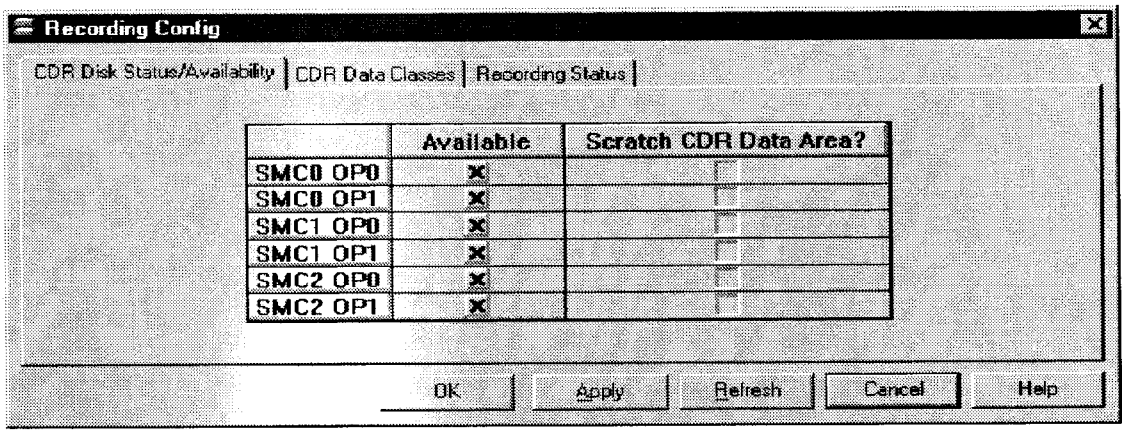


FIGURE 4-72. RECORDING CONFIG WINDOW

NOTE

If the CDR Disk Status/Availability Tab is selected and the CDR Disk is not available, the following Error Display is displayed. (Figure 4-72A).

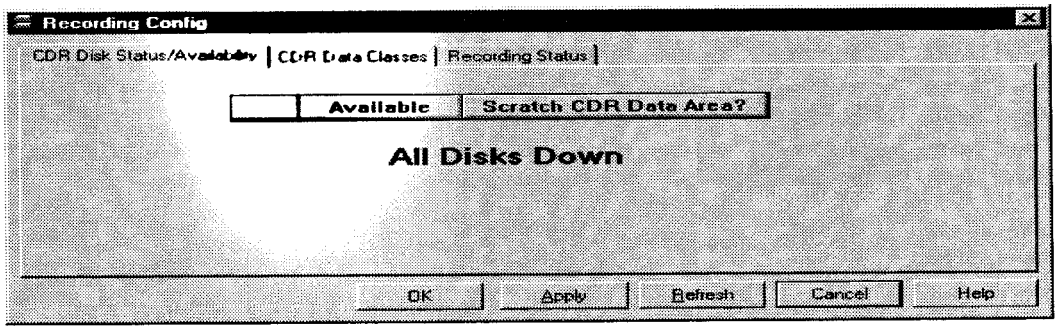


FIGURE 4-72A. CDR DISK NOT AVAILABLE WINDOW

3. Select one of three tabs available (CDR Disk Status/Availability, CDR Data Classes, or Recording Status).

4. CDR Disk Status/Availability tab (Figure 4-72).

   (a) Observe a list of Optical Disks for each SMC.

   (b) To change the availability of each Optical Disk for CDR:

      (1) Place the cursor in the appropriate checkbox in the Available column and click. An “x” in the box indicates availability; a blank box indicates unavailability.

   (c) To scratch a disk (allowing CDR to start at the beginning of the disk):

      (1) Place the cursor in the appropriate checkbox in the Scratch CDR Data Area column and click. An “x” in the box indicates the request to scratch; a blank box indicates writing on the disk (if available) beginning at the last recorded position.

      (2) A warning is displayed if the user attempts to scratch a disk less than 15 days old (Figure 4-73).

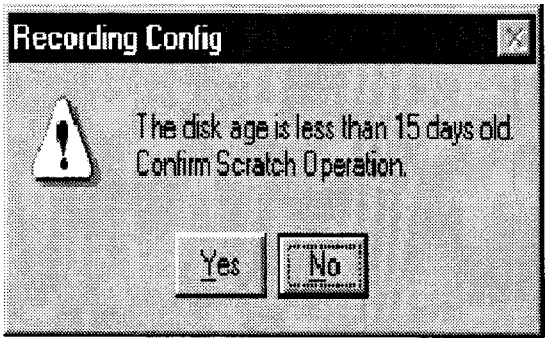


FIGURE 4-73. CDR 15 DAY WARNING WINDOW

   (d) Click OK to change the disk status and/or availability as selected and exit or Cancel to exit without change.

   (e) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

5. CDR Data Classes tab (Figure 4-74).

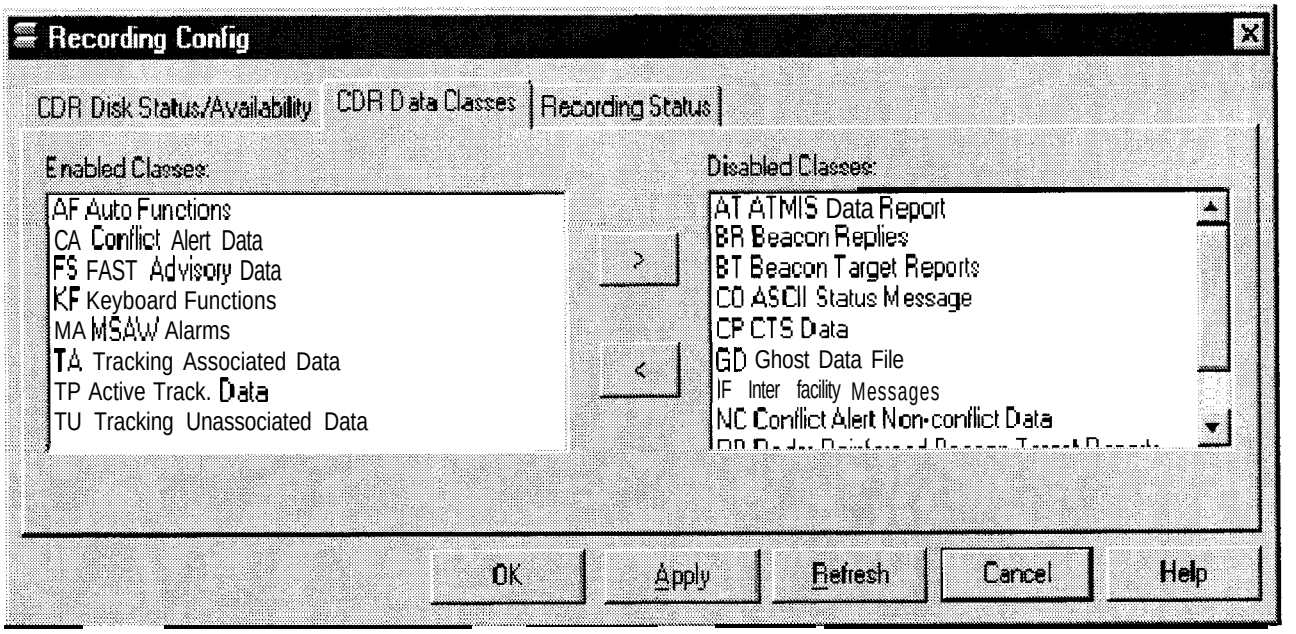


FIGURE 4-74. CDR DATA CLASSES WINDOW

(a) Observe lists of Enabled and Disabled CDR data classes.

(b) To enable a data class:

(1) Select the appropriate class(es) from the disabled list and click on the < butto Double clicking on a class moves that class to the alternate list.

(2) Observe the class(es) move from the disabled list to enabled list.

(c) To disable a data class:

(1) Select the appropriate class(es) from the enabled list and click on the > butto Double clicking on a class moves that class to the alternate list.

(2) Observe the class(es) move from the enabled list to disabled list.

(d) Click OK to change the data class(es) as selected and exit or Cancel to exit without change.

(e) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

6. Recording Status tab (Figure 4-75).

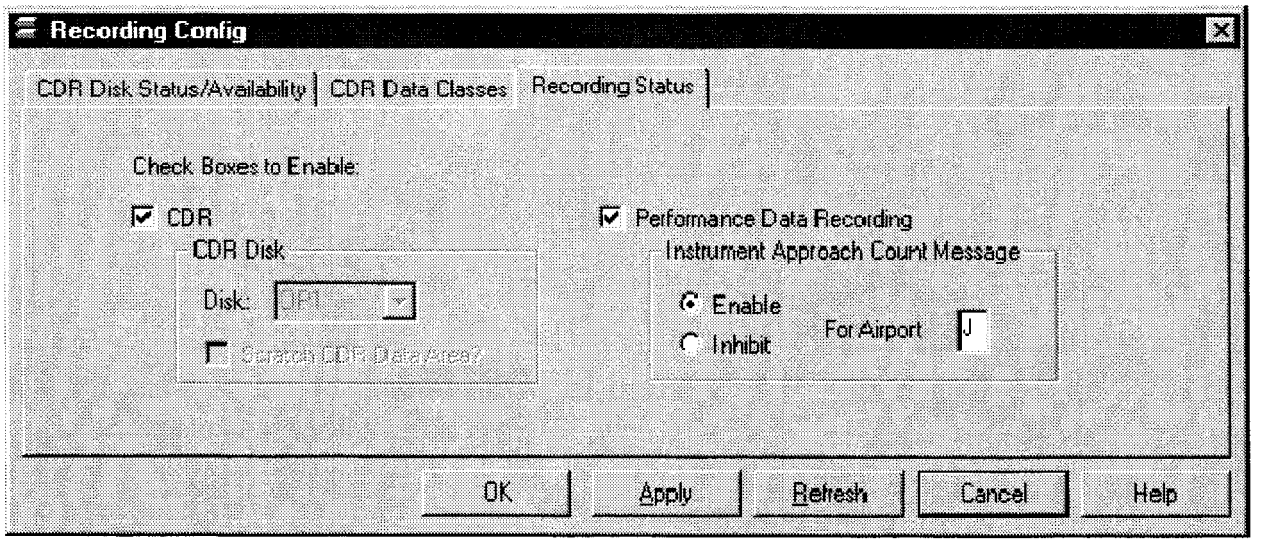


FIGURE 4-75. RECORDING STATUS WINDOW

(a) Observe CDR and Performance Data Recording checkboxes. The CDR checkbox must be checked to initiate CDR.

(1) To initiate CDR:

a Initially identify the optical disk for extraction.

b Click the arrow in the CDR Disk box until the desired optical is displayed.

(2) To terminate CDR:

a Click the CDR checkbox.

b Observe the Terminate CDR Warning dialog box (Figure 4-75A).

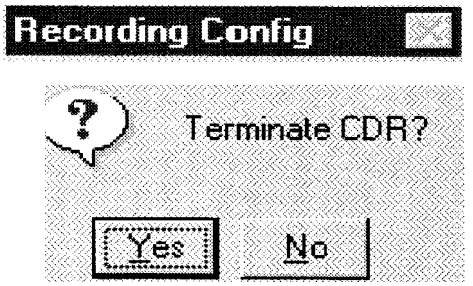


FIGURE 4-75A. TERMINATE CDR WARNING WINDOW

(3) Click OK to initiate/terminate as selected and exit or Cancel to exit with no change.

(4) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

(b) Observe Performance Data Recording checkbox.

(1) To enable PD-PC recording:

a Click the Performance Data Recording checkbox, so that the check appears.

(2) To disable PD-PC recording:

a Click the Performance Data Recording checkbox, if a check is already present click so that the check disappears.

(3) To enable/inhibit Instrument Approach Count message:

a Click on either the Enable or Inhibit radio button until either Enable or Inhibit.

b Enter the single character airport ID.

(4) Click OK to enable/disable PD-PC recording as selected and exit or Cancel with no change.

(5) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

(6) To confirm changes see the Recording Status Report (Figure 4-161).

4.4.7 CRDA Config

CRDA Config allows a user to view or modify the current Converging Runway Display Aid (CRDA) settings.

a. Special Notes:

1. A disabled runway pair will not display a mode.

2. An SMC-PC in the non-SMS or Host Down state cannot request this function.

b. CRDA Configuration operation:

1. Click CRDA Config (Figure 4-54).

2. Observe the CRDA Config window (Figure 4-76).

3. To modify the current status of a runway pair:

(a) Click the E(nable) or D(isable) in the Status column and it toggles to the alternate state.

(b) Observe the colors in the status column also change with the enabling (green) or disabling (red).

CRDA Config

	Airport	Runway Pair	Status	Mode	Primary Controller	Secondary Controller
1	J	13L/04L	E	Tie	2A/2A	25/25
2	E	04R/11	E	Stagger	4P/4P	/
3	I	06 /33L	F	Stagger	3H/3H	/
4	A	13 /22	E	Tie	1F/1F	/
5	A	04 /31	E	APG	1F/1F	/
6	J	22R/31R	D		2A/2A	25/25
7	E	22L/11	D		4P/4P	/
8	J	13L/22L	D		2A/2A	25/25

OK
Apply
Refresh
Cancel
Help

FIGURE 4-76. CRDA CONFIG WINDOW

4. To modify the current mode of a runway pair:

   (a) Clicking the arrow displays a pull down menu that contains the various modes (Tie, Stagger, APG). Click on the desired mode to select.

5. Click OK to change the CRDA function as selected and exit or Cancel to exit without changes or,

6. Click Apply to execute the function and not exit and/or Refresh to set selection window to original status.

7. The CRDA Config function validates each entry and sends the message to a chassis application. If the entry is a valid entry but, not appropriate in the current chassis state, an error message is displayed in the System Monitor window. Observe the Function Status Report (Figure 4-158) for confirmation of the modified system function.

4.4.8 RTQC Conf ig

RTQC Config allows a user to view or modify the current Real-Time Quality Control (RTQC) registration settings.

a. Special Notes:

   1. Range Correction and Azimuth Correction Factors may only be entered if the registration correction mode is manual.

   2. An SMC-PC in the non-SMS or Host Down state cannot request this function.

b. RTQC Configuration operation:

   1. Click RTQC Config icon (Figure 4-54).

   2. Observe the RTQC Config window (Figure 4-77).

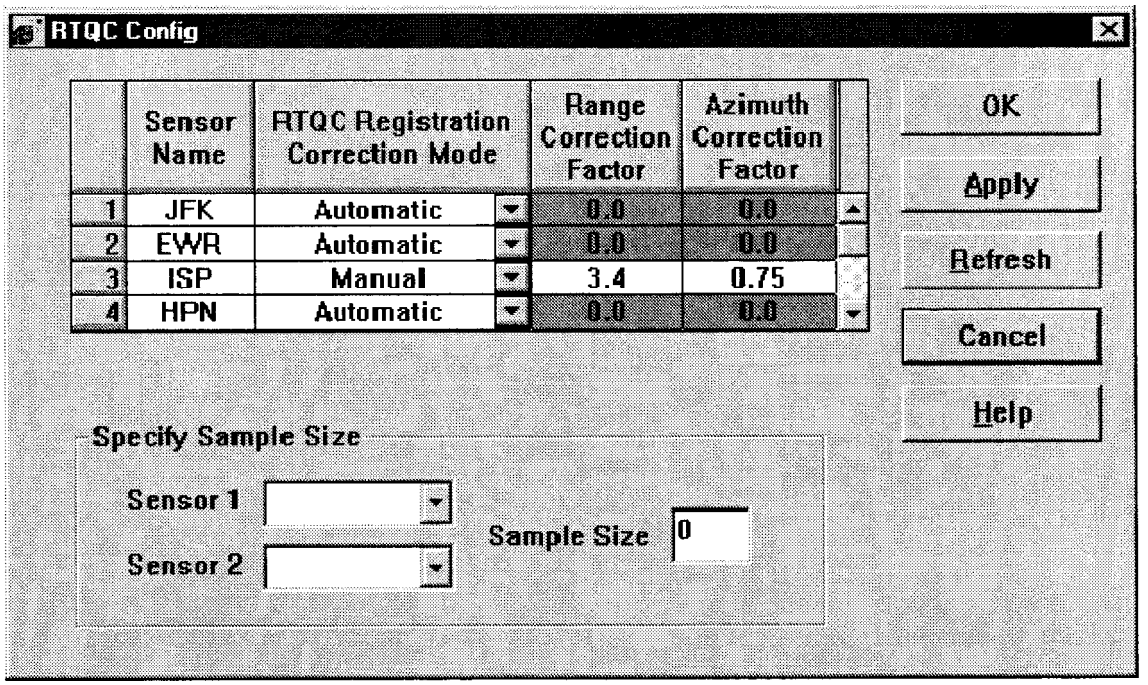


FIGURE 4-77. RTQC CONFIG WINDOW

3. To select the RTQC registration correction mode for a particular sensor:

   (a) Clicking arrow displays a drop down menu, from this menu select either automatic or manual in the RTQC Registration Correction Mode column.

   (b) If Manual mode is selected, Range Correction Factor and Azimuth Correction Factor columns may be entered.

   (c) If Automatic mode is selected, no correction factors are entered.

   (d) Click OK to establish RTQC correction modes/correction factors and exits or Cancel to exit without change.

   (e) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

4. To select the overlapped sensors to which RTQC will be applied:

   (a) Clicking the arrow on Sensor 1 and/or Sensor 2 display a drop down menu, select the desired sensor name.

   (b) To establish a sample number of targets for the sensors selected, delete current value and type in new value or,

   (c) Click and hold left mouse button to block/highlight current value and type in new value.

   (d) Click OK to select sensors and/or sample number and exit, or Cancel to exit without change.

   (e) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

4.4.9 TMS Config

TMS Config allows a user to modify Traffic Management Information System-related settings.

a. Special Notes:

1. An SMC-PC in the non-SMS or Host Down state cannot request this function.

b. TMS Configuration operation:

1. Click TMS Config (Figure 4-54).

2. Observe the TMS Config window (Figure 4-78).

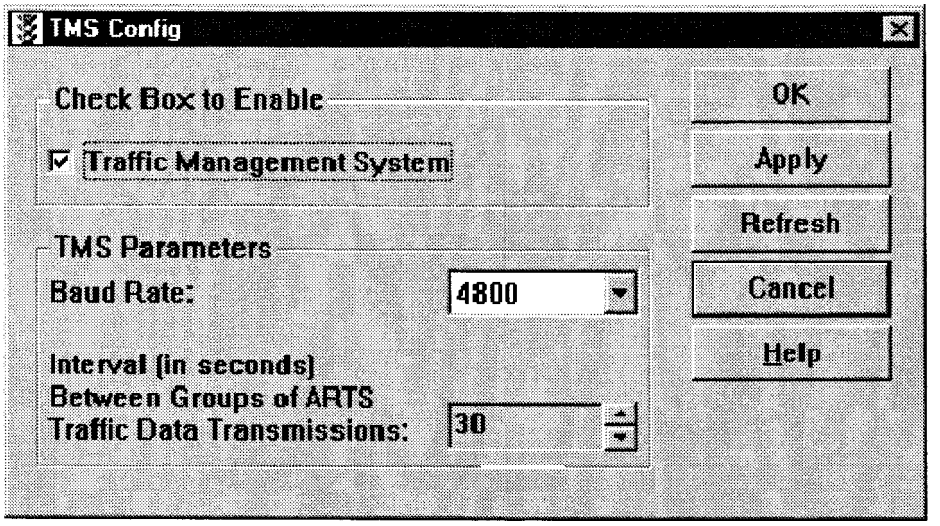


FIGURE 4-78. TMS CONFIG WINDOW

3. To enable/inhibit the Traffic Management System function:

(a) Place the cursor in the box adjacent to Traffic Management System and click. An initial blank box indicates disabled, a box with a "✓" indicates enabled. Clicking in the box toggles the enabled/disabled state, if Traffic Management System box is not checked the TMS Parameters area is shaded.

(b) Click OK to establish the changed function and exit or Cancel to exit without change or,

(c) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

(d) Observe the Function Status Report (Figure 4-158) for confirmation of changed TMS function.

4. To change the Baud Rate:

(a) The Traffic Management System box must be checked (enabled).

(b) Clicking the arrow displays a drop down list, clip to cycle through the available baud rates (2400, 4800, 9600, 19200, or 38400) in the TMS Parameters box until the desired rate appears.

(c) Click OK to establish a new baud rate setting and exit, or Cancel to exit without change.

(d) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

5. To change the Interval Between Groups of ARTS Traffic Data Transmissions (TZ messages):

(a) The Traffic Management System box must be checked (enabled).

(b) Click in the up/down arrows to increase/decrease the present setting until the desired number of seconds appear or,

(c) Click OK to establish a new interval between groups of ARTS traffic data transmissions and exit, or Cancel to exit without change.

(d) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

4.4.10 System Function Config

System Function Config allows the user to enable or inhibit System Functions.

a. Special Notes:

1. The default setting is: MSAW and Supervisory Modes are enabled, Memory Readout and Test Modes are disabled.

2. An SMC-PC in the non-SMS or Host Down state cannot request this function.

b. System Function Configuration operation:

1. Click System Function Config (Figure 4-54).

2. Observe the System Function Config window (Figure 4-79).

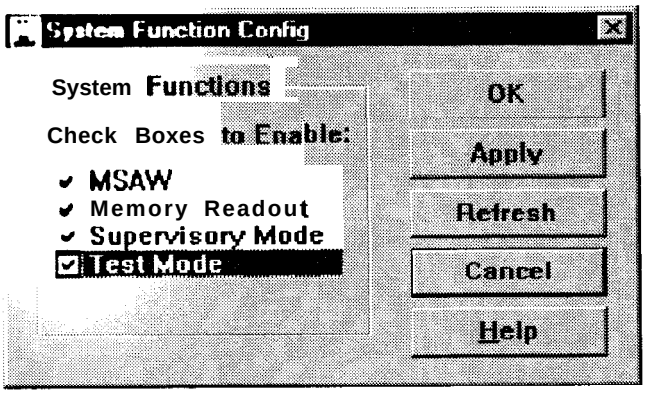


FIGURE 4-79. SYSTEM FUNCTION CONFIG WINDOW

3. To enable selected functions:

(a) Click in the box(es) next to the System Function to be changed in the System Functions box. An initial blank box indicates disabled; a box with a check mark indicates enabled. Clicking in the box toggles the enabled/disabled state.

(1) Ensure you click in the checkbox and not on the System Function name. Highlighting the names does not select.

(b) Click OK to establish the changed function and exit, or Cancel to exit without change or,

(c) Click Apply to execute the function and not exit and/or Refresh to set selection window to original status.

(d) Observe the Function Status Report (Figure 4-l 58) for confirmation of the changed System Function.

4.4.11 ILS Monitor Config

ILS Monitor Config allows the user to modify ILS Monitor-related settings.

a. Special Notes:

1. An SMC-PC in the non-SMS or Host Down state cannot request this function.

b. ILS Monitor Configuration operation:

1. Click ILS Monitor Config (Figure 4-54).

2. Observe the ILS Monitor Config window (Figure 4-80).

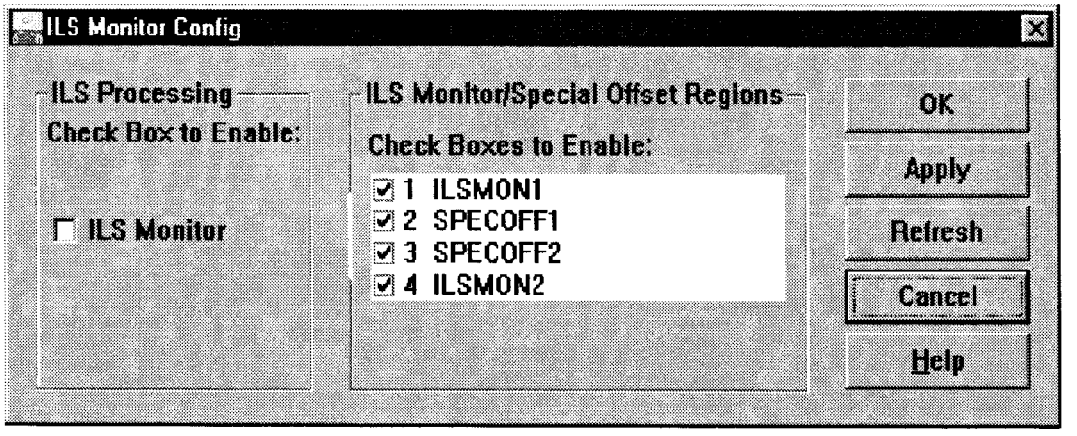


FIGURE 4-80. ILS MONITOR CONFIG WINDOW

3. To enable the ILS Monitor function:

(a) Click in the box next to the ILS Monitor in the ILS Processing box. An initial blank box indicates disabled, a box with a check mark indicates enabled. Clicking in the box toggles the enabled/disabled state.

(b) Click OK to establish the changed function and exit, or Cancel to exit without change.

(c) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

(d) Observe the Function Status Report (Figure 4-158) for confirmation of changed ILS Monitor Config function.

4. To enable the ILS Monitor/Special Offset Regions function:

(a) Click in the box(es) next to the adapted offset regions in the ILS Monitor/Special Offset Regions box. An initial blank box indicates disabled, a box with a check mark indicates enabled. Clicking in the box toggles the enabled/disabled state.

(1) Ensure that you click the checkbox and not the Offset Region name. Highlighting the name does not select.

(b) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

(c) Click OK to set the changed offset regions and exit, or Cancel to exit without change.

5. The ILS Monitor Config function validates each entry and sends the message to a chassis application. If the entry is a valid entry but, not appropriate in the current chassis state, an error message is displayed in the System monitor window. Observe the Function Status Report (Figure 4-158) for confirmation of the changed system function.

6. Note – When selecting ILS Monitor/Special Offset Regions boxes with the ILS Monitor box not checked (disabled), the selected choices are accepted but not applied.

4.4.12 Airspace Violator Alert Config

Airspace Violator Alert Config allows the user to enable or inhibit airspace violator alerts.

a. Special Notes:

1. An SMC-PC in the non-SMS or Host Down state cannot request this function.

b. AVA Config operation:

1. Click AVA Config (Figure 4-54).

2. Observe the AVA Config window (Figure 4-80A).

3. To refresh the display with current-data, click the Refresh button.

4. To get help, click the Help button.

5. To exit without changing the configuration, click the Cancel button.

6. To specify a change in configuration, click any E or I.

7. To implement the specified changes, click the Apply button.

8. To implement the specified changes and exit, click the OK button.

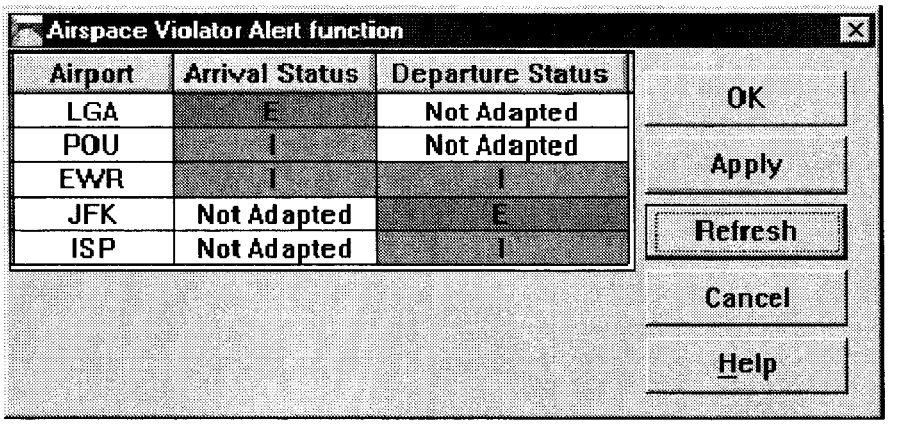


FIGURE 4-80A. AVA CONFIG WINDOW

4.5 ARTS TOOLS

The ARTS Tools group contains miscellaneous and special-purpose ARTS support functions.

a. Function Configuration operation:

1. Click ARTS Tools icon in the Programs group (Figure **4-4).**

2. Observe the ARTS Tools Program group (Figure 4-81).

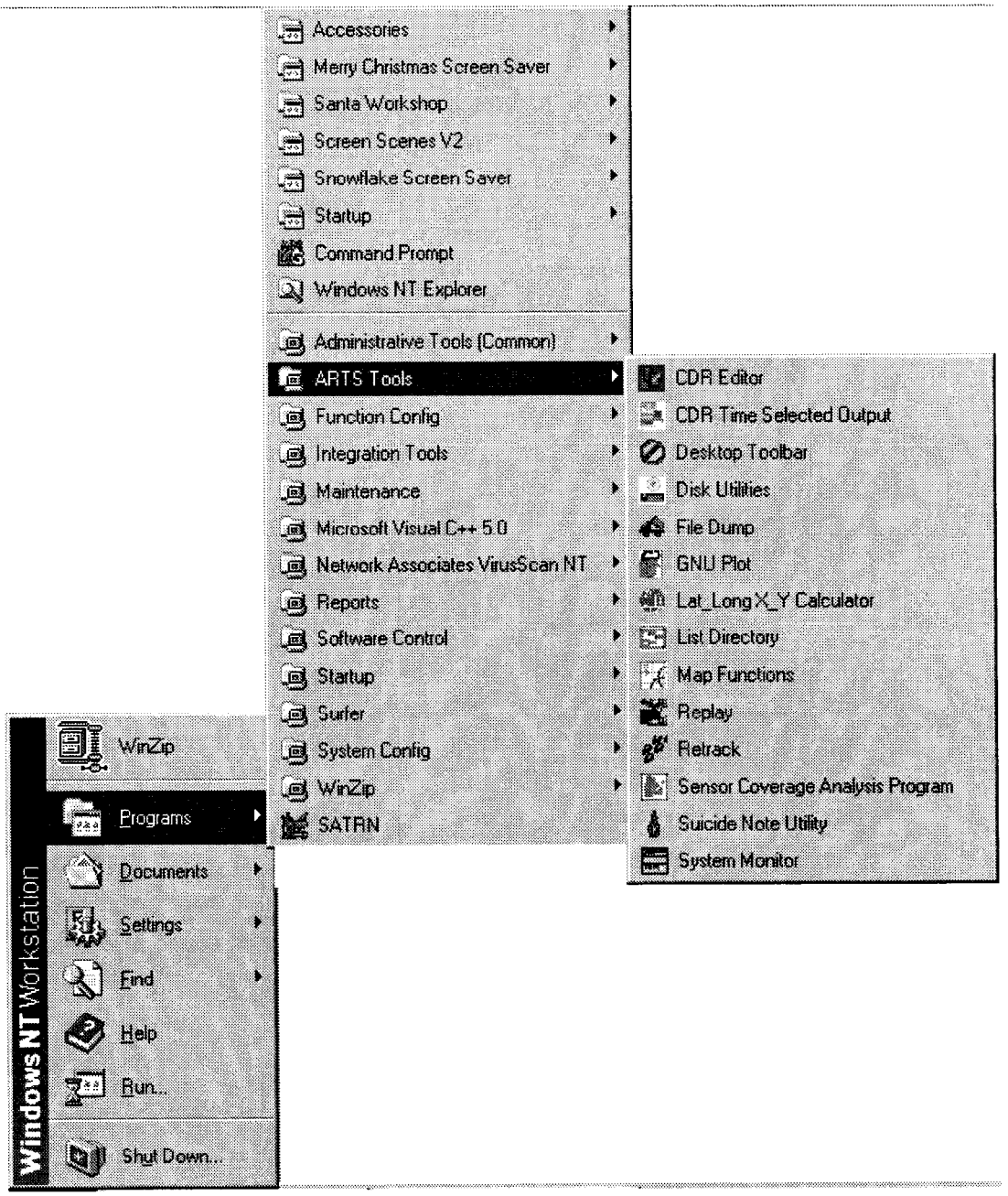


FIGURE 4-81. ARTS TOOLS GROUP WINDOW

4.5.1 CDR Editor

CDR Editor provides the user with formatted output of previously recorded CDR data. During an editing session, the user can define or modify input, output, data class, and filter settings. These editing session settings can be saved in a session setting file that, on subsequent editor sessions, can be loaded or opened to expedite CDR Editor setup and analysis.

a. Special Notes:

1. Refer to Appendix K for formats of the various printouts that may be selected.

2. An editing session (CDR analysis) can be saved in a file that subsequently can be reloaded or recalled at another time.

3. The TRACS Data Dump uses a different format and needs a separate editing session. It removes Sector Report Message, Radar Only Report, and Target Message data from the CDR collection.

4. If a filter entry is not acceptable, a popup window appears with error dialog. Subsequent filter selection is inhibited until corrected.

5. Refer to the Control Tab (Figure **4-103)** to review current selected parameters for CDR editing. The selected parameters will change if modified during the CDR Editor Setup operation.

6. Refer to paragraph 4.7.8 for recording status report information.

7. Refer to Appendix L for CDR Editor Software (CDRES) Status and Error messages.

b. Menu Bar Functions

File Menu

New	Creates a new session.
Open	Opens an existing session file.
Save	Saves current session file.
Save As	Displays a file selection box which allows user to save current session file under a new name.
Exit	Exits the current session.

Edit Menu

Cut	Cuts the selection and puts it on the clipboard.
Copy	Copies the selection and puts it on the clipboard.
Paste	Inserts clipboard contents at insertion point.

View Menu

Toolbar	Toggles the Toolbar between displayed and hidden.

Status Bar	Toggles the Status Bar between displayed and hidden.

Control Menu

Start	Initiates a CDR Editor run.
stop	Terminates a CDR Editor run.
Disk Availability	Displays a dialog that allows the user to make a CDR disk available or unavailable for editing.

c. Toolbar Menu

New Button	Creates a new session.
Open Button	Opens an existing session file.
Save Button	Saves current session file.
Cut Button	Cuts the selection and puts it on the clipboard.
Copy Button	Copies the selection and puts it on the clipboard.
Paste Button	Inserts clipboard contents at insertion point.
Green Circle Button	Initiates a CDR Editor run.
Red Circle Button	Terminates a CDR Editor run.

d. CDR Editor Setup operation:

1. Click CDR Editor (Figure 4-81).

2. Observe the CDR Editor Data Classes window (Figure 4-82).

3. Select one of five tabs available by clicking on a tab (Classes, Filters, Input, Output, or Control).

4. Classes tab (Figure 4-82):

   (a) Observe a list of available data classes and another of selected data classes. The selected data classes are used in the editing process.

   (b) To move individual classes between lists:

      (1) Click on a class in either list (it becomes highlighted) and then click on the < or the > button to move that class to the alternate list.

      (2) Double clicking on a data class moves that class to the alternate list.

      (3) The TRACS Data Dump class must be moved to the selected list exclusively.

      (4) If User attempts to move TRACS Data Dump inclusively, error window “TRACS...exclusive” appears. (Figure 4-82A.)

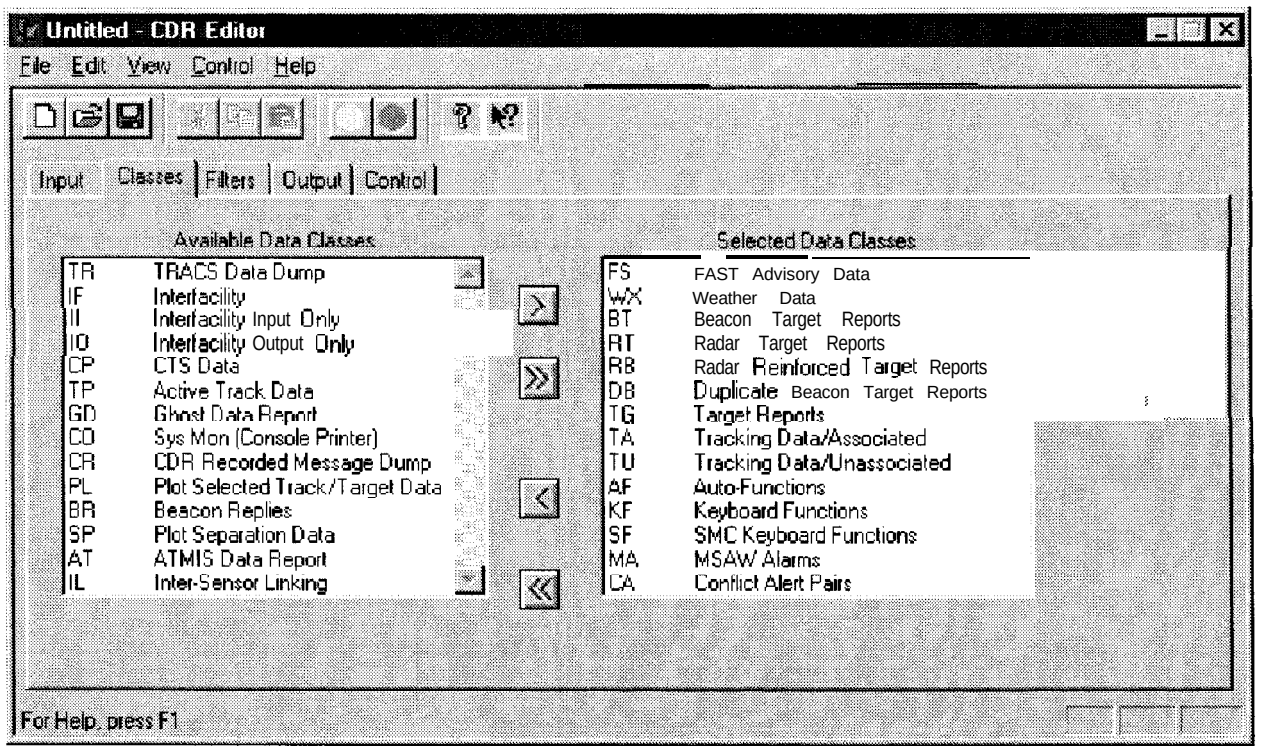


FIGURE 4-82. CDR EDITOR DATA CLASSES WINDOW

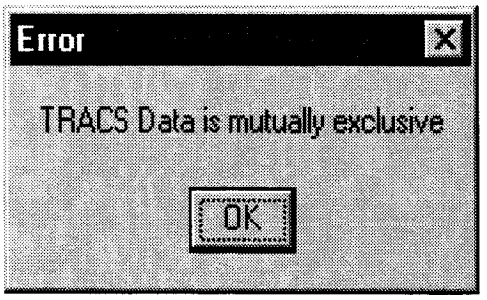


FIGURE 4-82A. TRACS DATA DUMP ERROR WINDOW

(c) To move all classes to the alternate list, click on the << or the >> button.

(1) The TRACS Data Dump class may be moved in this manner (<<) only if it is on the selected list.

(2) To view all classes in the available list, use the scroll bar on right side of box.

(d) Click on the Control Tab to review changes in Selected Parameters box.

5. Filters tab (Figure 4-83):

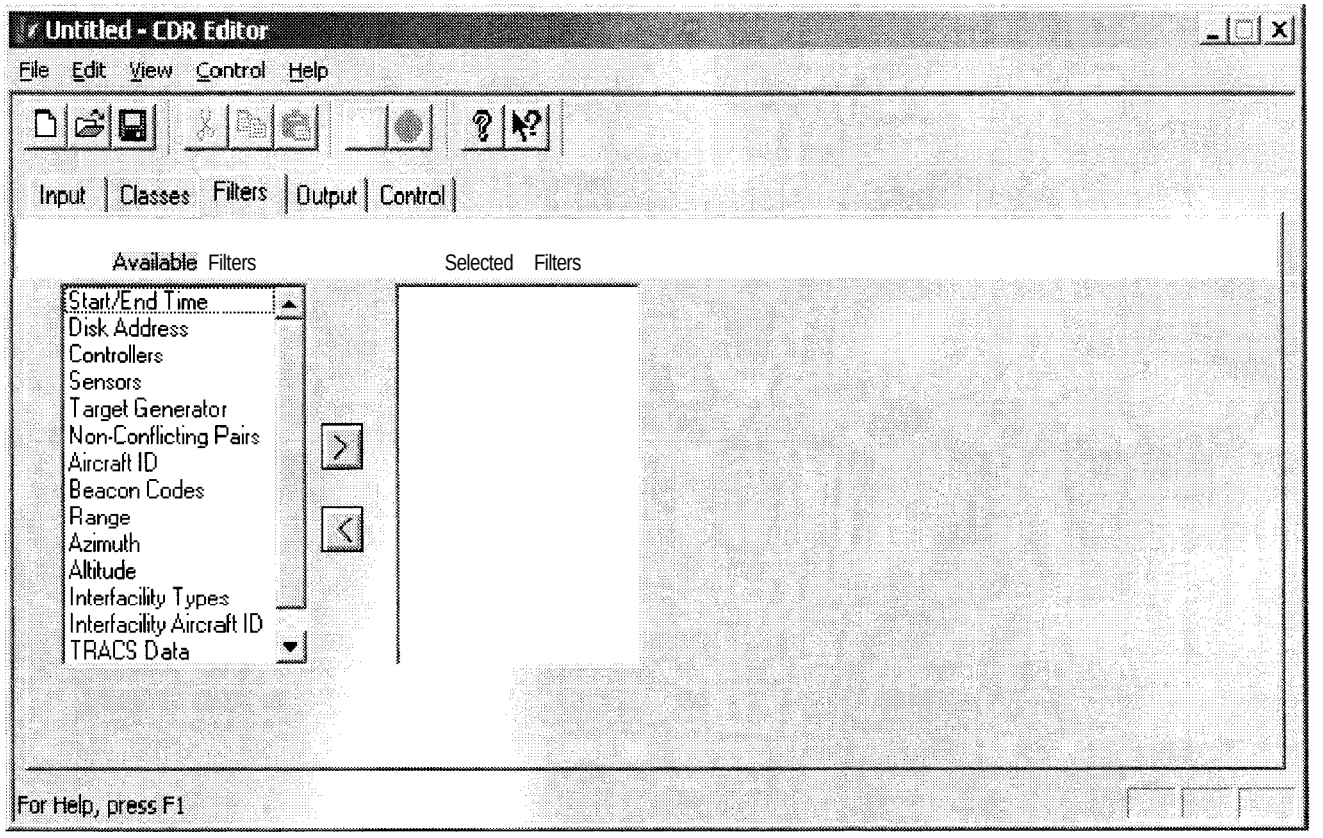


FIGURE 4-83. FILTERS WINDOW

(a) Observe a list of available filters and another list of selected filters. The selected filter list is used in the editing process.

(b) To move individual filters between lists:

(1) Click on a filter in either list (it becomes highlighted) and then click on the < or the > button to move that filter to the alternate list.

(2) Double clicking a filter in either list moves that filter to the alternate list.

(c) Moving a filter from the available list to the selected list displays a page for additional data to be entered pertinent to that filter.

(d) Start/End Time filter (Figure 4-84). If selected, only data which are found between the start date/time and the end date/time pass the filter for editing purposes.

(1) Place the cursor in any of the boxes and click. Then use the up/down arrows to increase/decrease the start date/end date (mmddyy) or the starting time/ending time (hhmmss) or,

(2) Place the cursor in any box, delete the numeric, and type in the new numeric or,

(3) Place the cursor in any box, hold the left mouse button down, and select/block the numeric. Type in the new numeric.

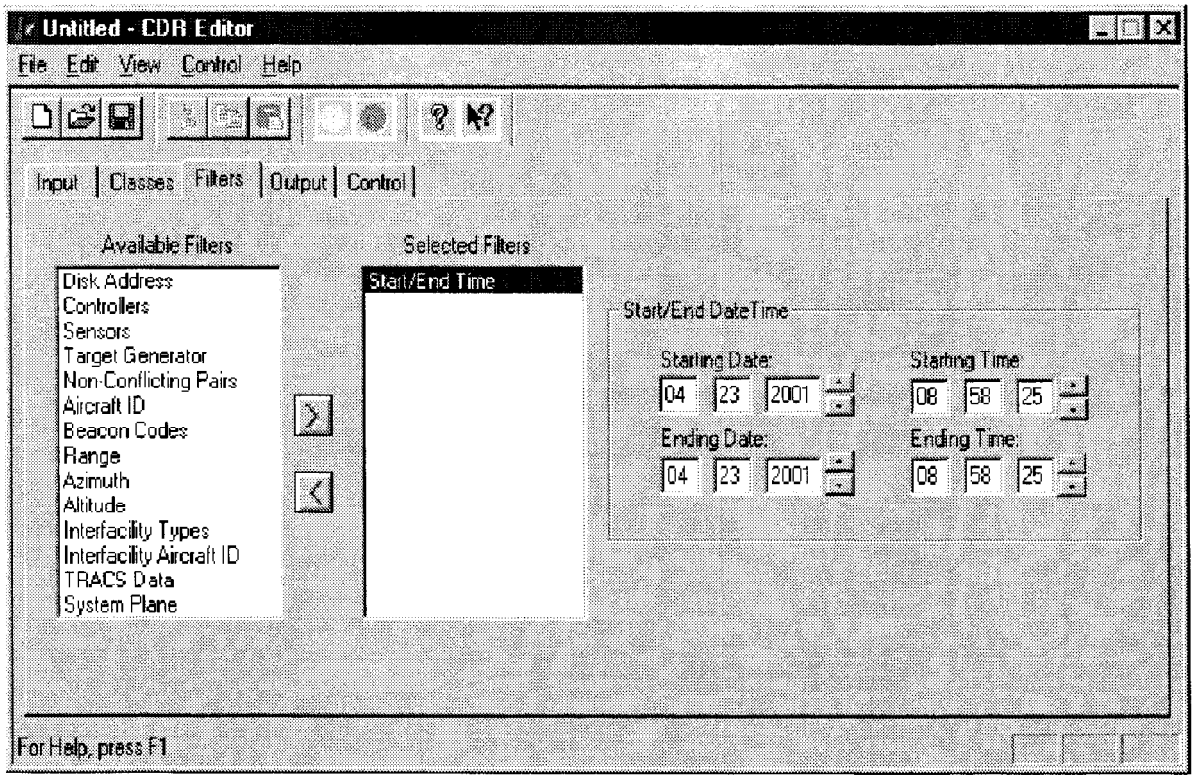


FIGURE 4-84. CDR START/END TIME FILTERS WINDOW

(4) The starting date and ending date may be the same or the ending date may be greater.

a The ending time must be greater than the starting time.

(5) Click on the Control Tab to review changes in Selected Parameters box.

(e) Disk Address filter (Figure 4-85). If selected, only data between the start disk address and the end disk address pass the filter for editing purposes.

(1) Values entered are offset by 1000. (Entering a 2, represents address 2000.)

a Since the granularity of the disk address filter is 1000 care should be taken to round up the end address and not truncate it (e.g., if 1234567 is the end address of the edit desired data use 1235 as the filter end address, not 1234).

(2) Place the cursor in either the Start Disk Address box or the End Disk Address box; if blank, type in the numeric address. If addresses are present, delete the addresses and enter new addresses.

(3) Click on the Control Tab to review changes in Selected Parameters box.

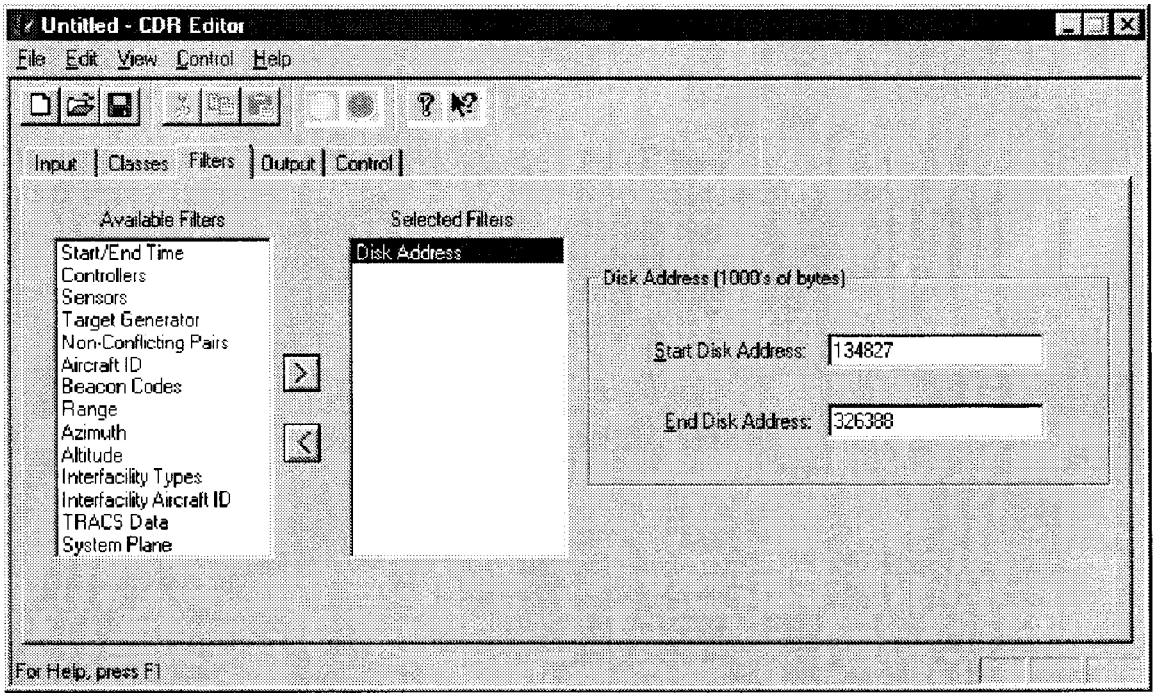


FIGURE 4-85. CDR DISK ADDRESS FILTERS WINDOW

(f) Controllers filter (Figure 4-86). If selected, only data corresponding to the entered controller filter pass the filter for editing purposes.

(1) A controller is identified by a keyboard subset and controller symbol.

(2) Place the cursor in the Controllers box and click. Enter the controller identifier(s). If multiple entries are made, separate each entry with a comma.

(3) Click on the Control Tab to review changes in Selected Parameters box.

(4) This error msg dialog box is displayed if a CID entered is not a digit followed by a letter, or if a CID is preceded or followed by a blank space, or if a space is entered between the digit and letter. (Figure 4-86A.)

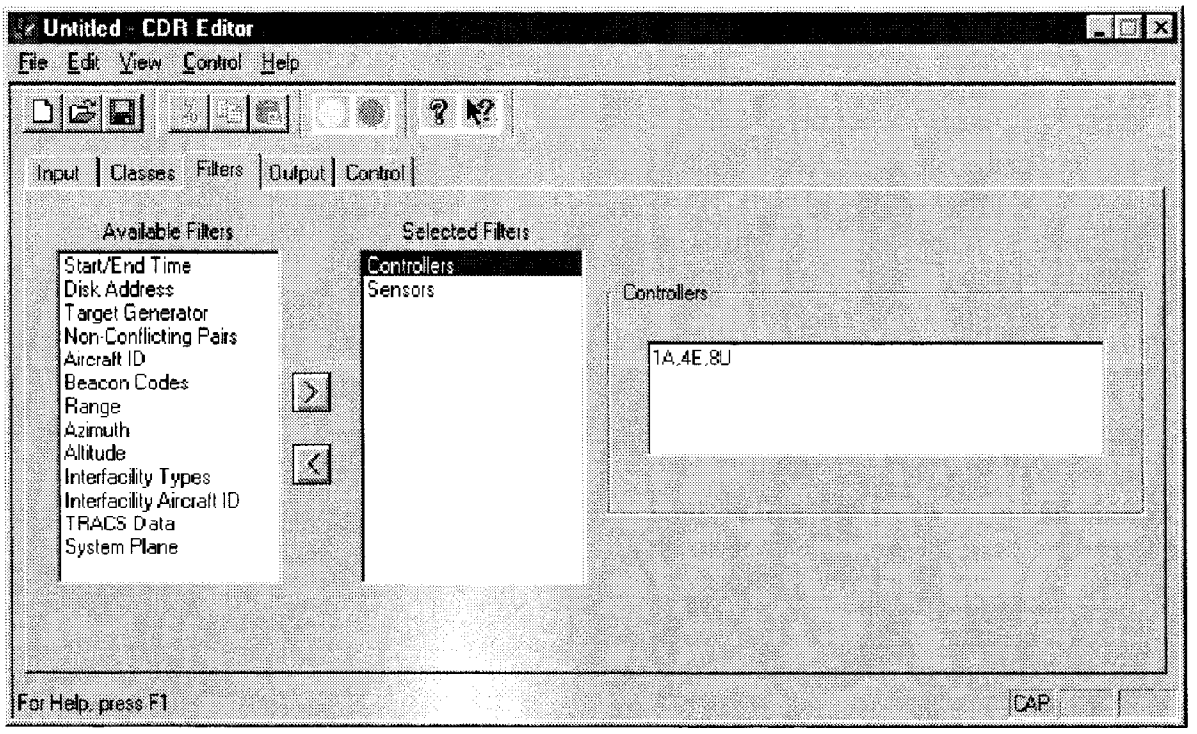


FIGURE 4-86. CDR CONTROLLER FILTERS WINDOW

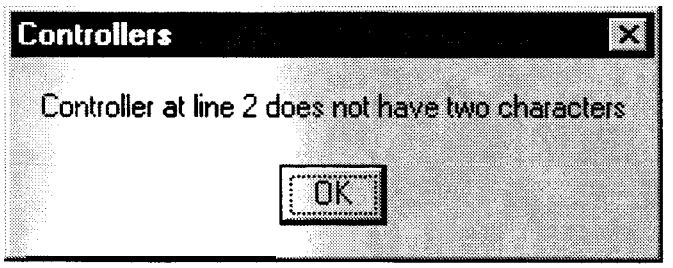


FIGURE 4-86A. CONTROLLER ERROR MSG DIALOG BOX

(g) Sensors filter (Figure 4-87). If selected, data pertaining to the entered sensor(s) pass the filter for editing purposes.

(1) To view all sensors, use the scroll bar on right side of box.

a Click on the up/down arrows to move the list one position up or down or,

b Click in the area between the slider bar and arrow and move the list several positions or,

c Click and hold on the slider bar, then move the mouse position forward or backward to rapidly move through the list.

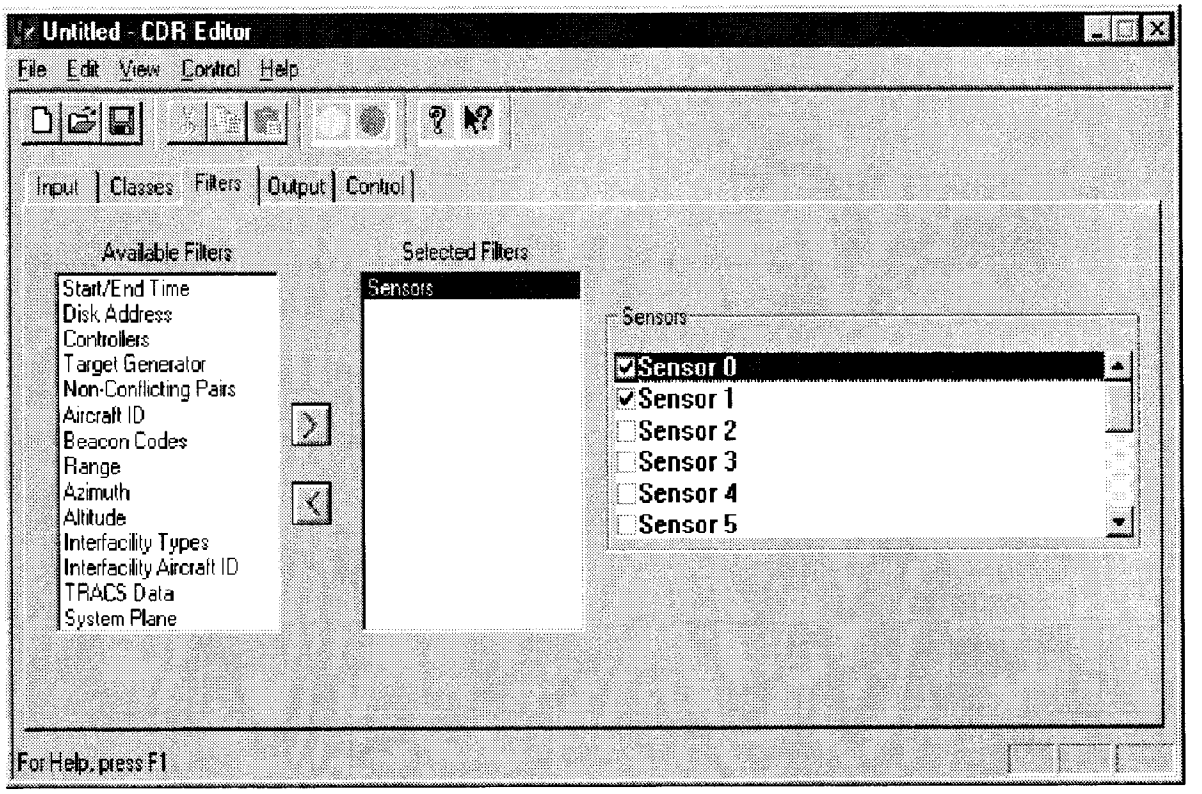


FIGURE 4-87. CDR SENSOR FILTERS WINDOW

(2) Place the cursor in the checkbox of the Sensors box corresponding to the desired sensor and click. The checkbox now contains a "✓" and the sensor is highlighted. (a "✓" enables and a blank box disables.)

a Ensure you click on the checkbox and not the Sensor name. Highlighting the name does not select.

(3) Click on the Control Tab to review changes in Selected Parameters box.

(h) Target Generator filter (Figure 4-88). If selected, data pertaining to live targets, generated targets, or both can be filtered for editing purposes.

(1) Click on either the checkbox(es) or the title(s) to select either the Target Generator Mode or Live Mode, or both.

(2) Clicking on a selected mode (a "✓" in the checkbox) deselects that mode (a blank checkbox).

(3) Click on the Control Tab to review changes in Selected Parameters box.

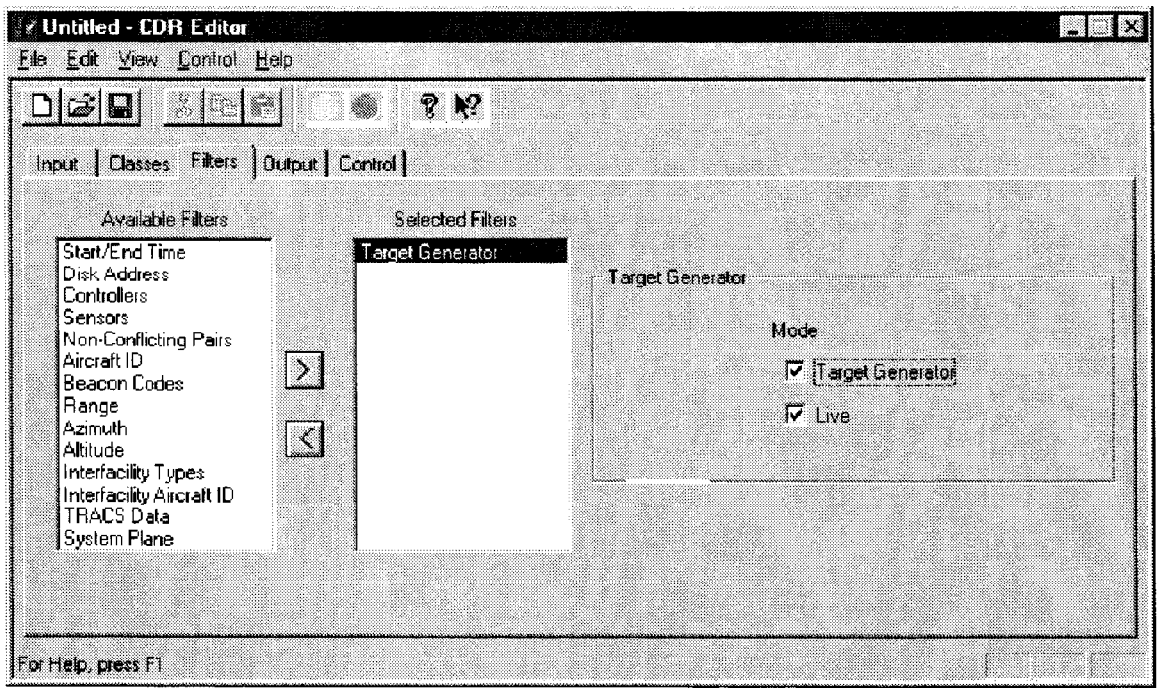


FIGURE 4-88. CDR TARGET GENERATOR FILTERS WINDOW

(i) Non-Conflicting Pairs filter (Figure 4-89). If selected, data pertaining to Conflict Alert (CA) conflicting pairs or non-conflicting pairs can be filtered for editing purposes.

a If Non-Conflicting Pairs is selected, all CA pairs pass the primary filter, not just the data with CA alerts detected.

b Click the Non-Conflicting or the checkbox to select/deselect the Non-Conflicting pairs filter. A "✓" indicates selected. A blank box indicates deselected.

c Click on the Control Tab to review changes in Selected Parameters box.

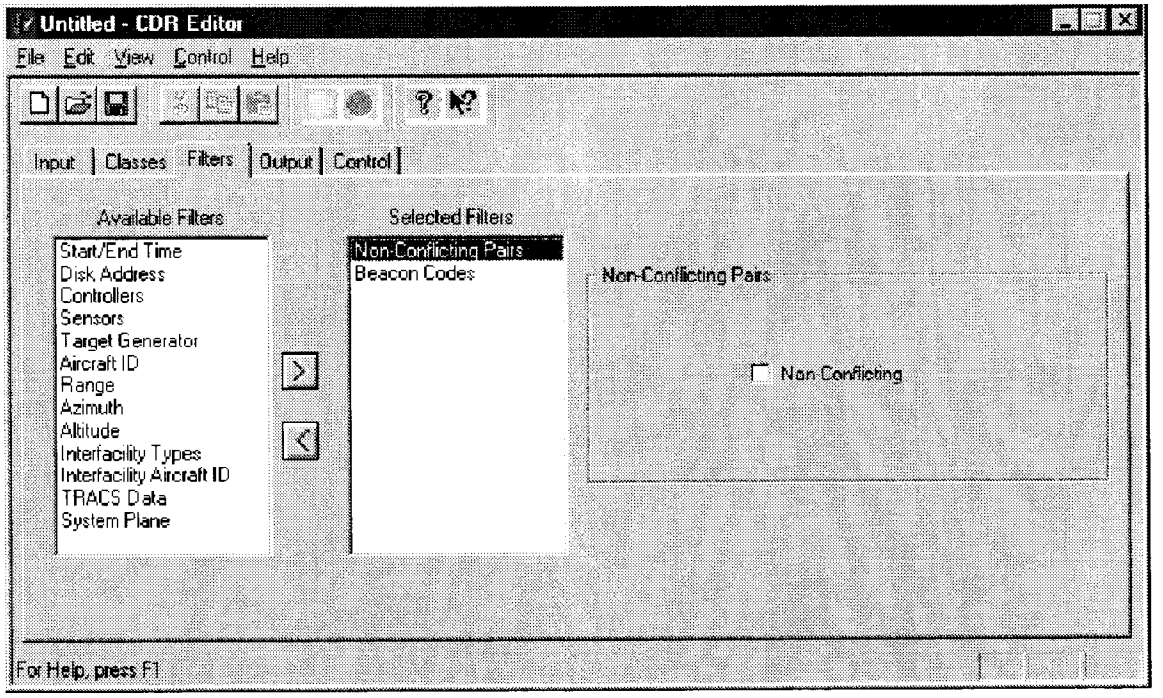


FIGURE 4-89. CDR NON-CONFLICTING PAIRS FILTER WINDOW

(j) Aircraft ID (ACID) filter (Figure 4-90). If selected, data pertaining to the ACID(s) can be filtered for editing purposes.

(1) Click in the Aircraft ID box; if blank, enter up to five ACIDs. If ACIDs present, delete as required and enter new ACIDs.

a ACID may consist of up to seven alphanumeric characters. The first character must be an alpha.

b Each entry must be separated by a comma.

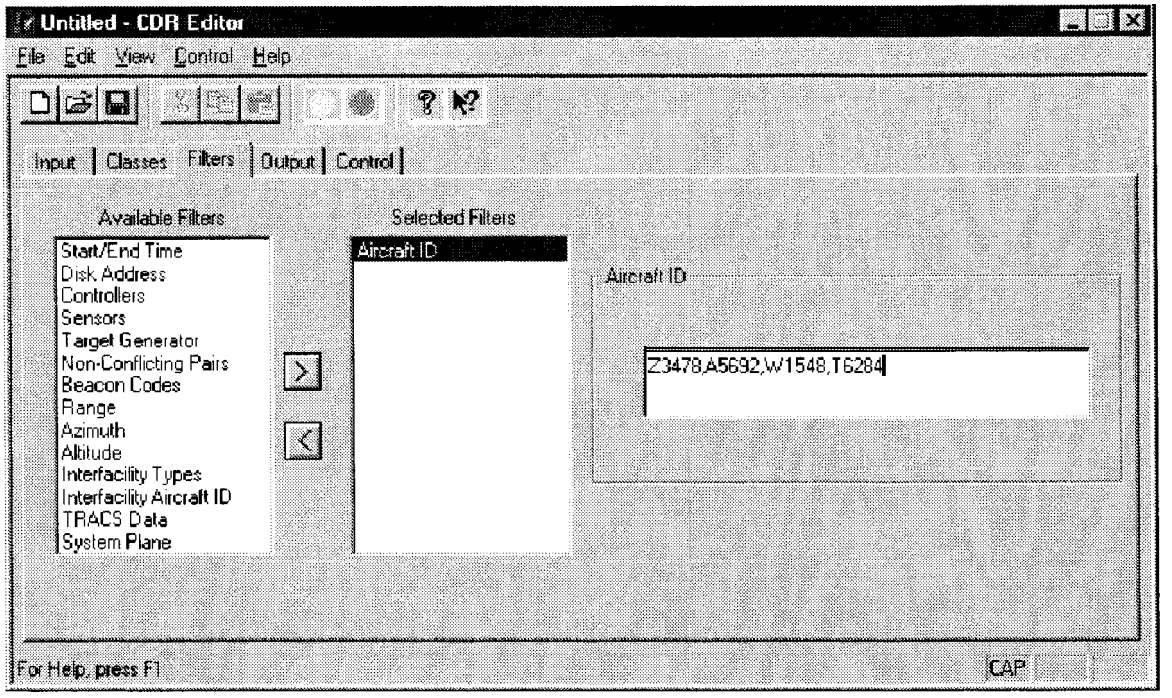


FIGURE 4-90. CDR AIRCRAFT ID FILTERS WINDOW

(2) If the user enters more than 5 ACIDs, the system will display an Error Message box stating too many ACIDs were entered and give the user the maximum number of ACIDs to be entered. (Figure 4-90A).

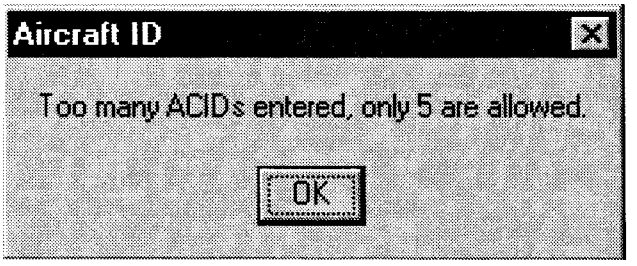


FIGURE 4-90A. TOO MANY ACIDs ERROR MESSAGE WINDOW

(3) If the user enters more than 7 alphanumeric characters, this error message dialog box is displayed. (Figure 4-90B).

(4) Click on the Control Tab to review changes in Selected Parameters box.

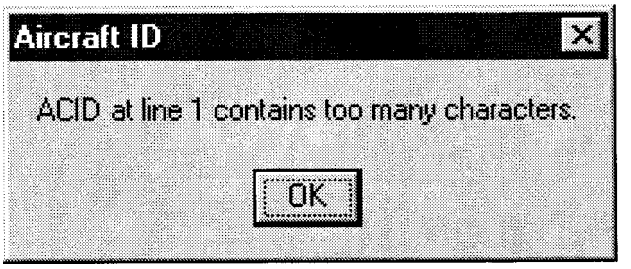


FIGURE 4-90B. TOO MANY CHARACTERS ERROR MESSAGE WINDOW

(k) Beacon Codes filter (Figure 4-91). If selected, data pertaining to the entered beacon code or a beacon code within a beacon code block can be filtered for editing purposes.

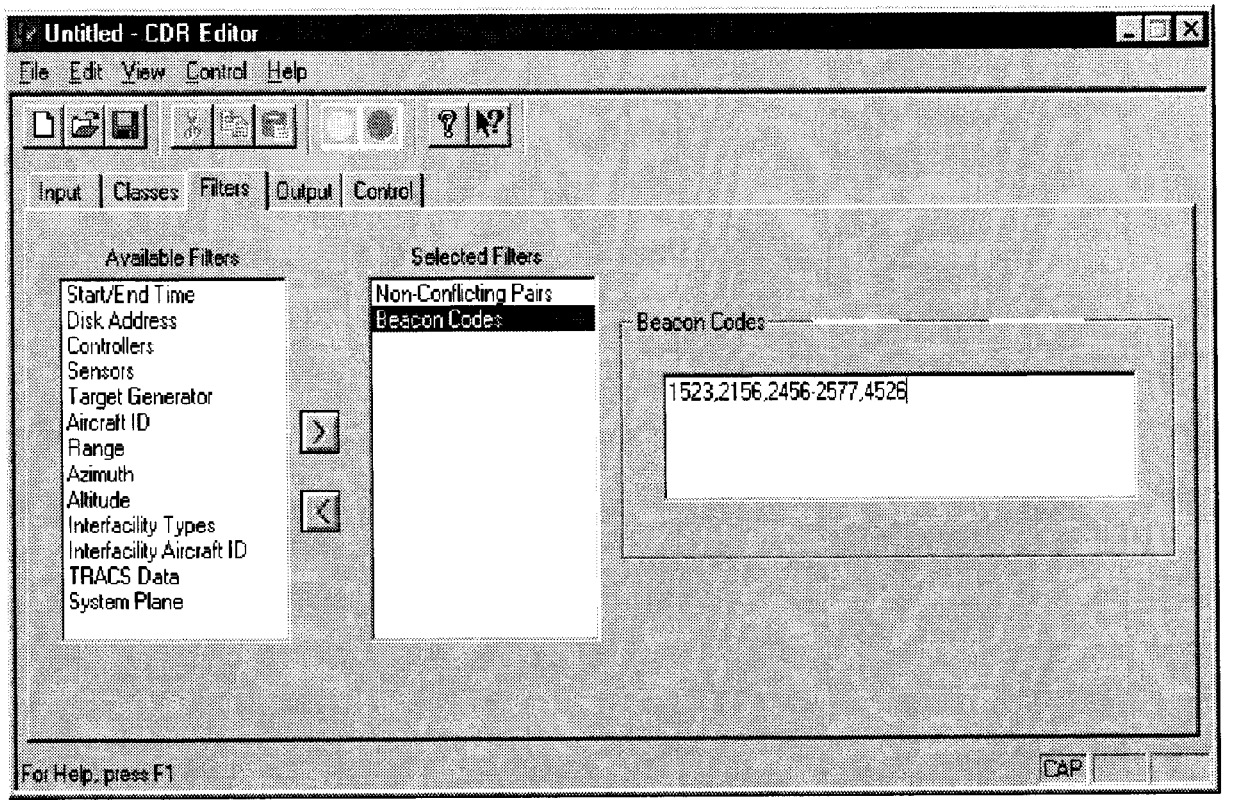


FIGURE 4-91. CDR BEACON CODES FILTER WINDOW

(1) Click in the Beacon Codes box; if blank, enter up to five beacon codes and/or beacon code blocks. If beacon codes/blocks present, delete as required and enter new codes/blocks.

a Codes and code blocks may be intermingled.

b Each code must be a four-digit octal numeric code.

c Codes and code blocks are separated by commas.

d A code block must have a "-" between the code blocks and indicates a sequence of codes (beginning code — ending code).

e Each code block may be followed by an optional beacon discrete designator (N for non-discrete, D for discrete, and blank for processing all codes within the block).

(2) Click on the Control Tab to review changes in Selected Parameters box.

(3) If the user enters more than 5 Beacon Codes, the system will display an Error Message box stating too many beacon codes were entered, and give the user the maximum number of beacon codes that can be entered. (Figure 4-91A.)

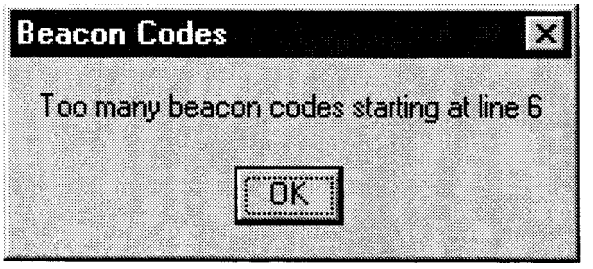


FIGURE 4-91 A. TOO MANY BEACON CODES WINDOW

(4) If an invalid number of beacon codes is entered, this dialog box will appear, telling the user on what line the error occurs. (Figure 4-91B.)

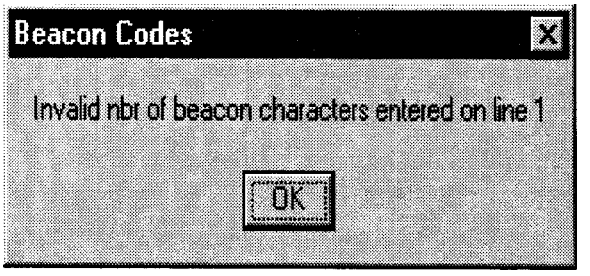


FIGURE 4-91 B. INVALID NUMBER OF BEACON CHARACTERS WINDOW

(5) If the user does not enter digits to represent the beacon codes, this error will appear. (Figure 4-91C.)

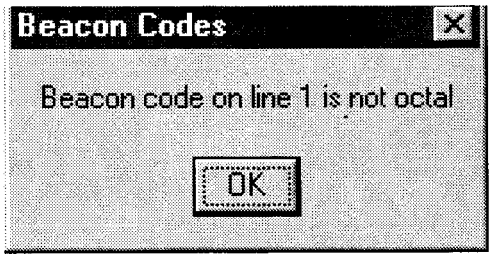


FIGURE 4-91C. BEACON CODE REPRESENTATION ERROR WINDOW

(l) Range filter (Figure 4-92). If selected, data which fall within the range filter limits can be filtered for editing purposes.

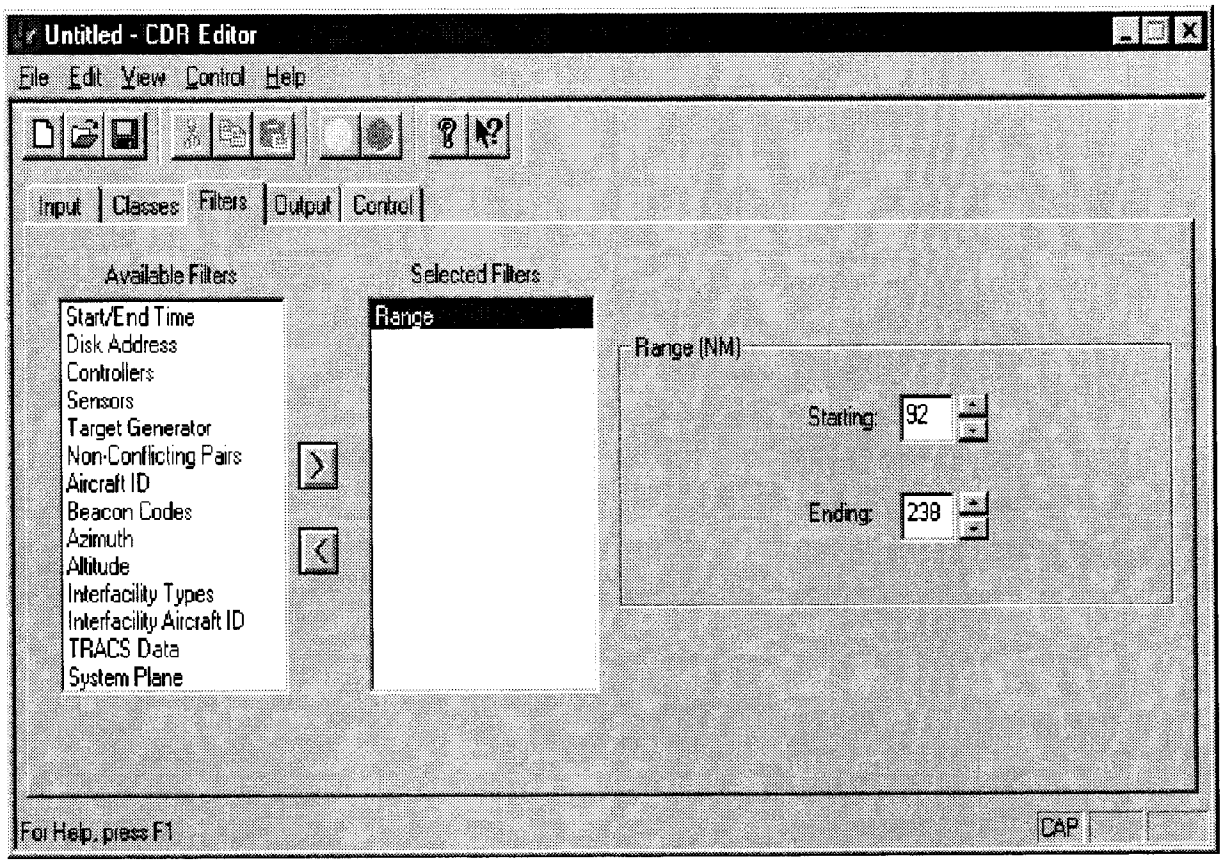


FIGURE 4-92. CDR RANGE FILTERS WINDOW

(1) In either the Starting or Ending box, use the up/down arrows to increase/decrease the starting range (in nautical miles) or the ending range (in nautical miles) (valid range of numbers is O-256) or,

(2) Place the cursor in either box, if blank, type in a numeric. If a numeric is present (end range must be greater than start range) delete the numeric, and type in the new numeric or,

(3) Place the cursor in either box; hold the left mouse button down, and select/block the numeric. Type in the new numeric.

(4) Click on the Control Tab to review changes in Selected Parameters box.

(m) Azimuth filter (Figure 4-93). If selected, data which pertain to either of the two azimuth filters can be filtered for editing purposes.

(1) Place the cursor in any box; if blank, type in a numeric. If a numeric is present, delete the numeric, and type in the new numeric (in degrees) or,

(2) Place the cursor in any box, hold the left mouse button down, and select/block the numeric (valid range of numbers is o-360). Type in the new numeric (in degrees).

(3) Click on the Control Tab to review changes in Selected Parameters box.

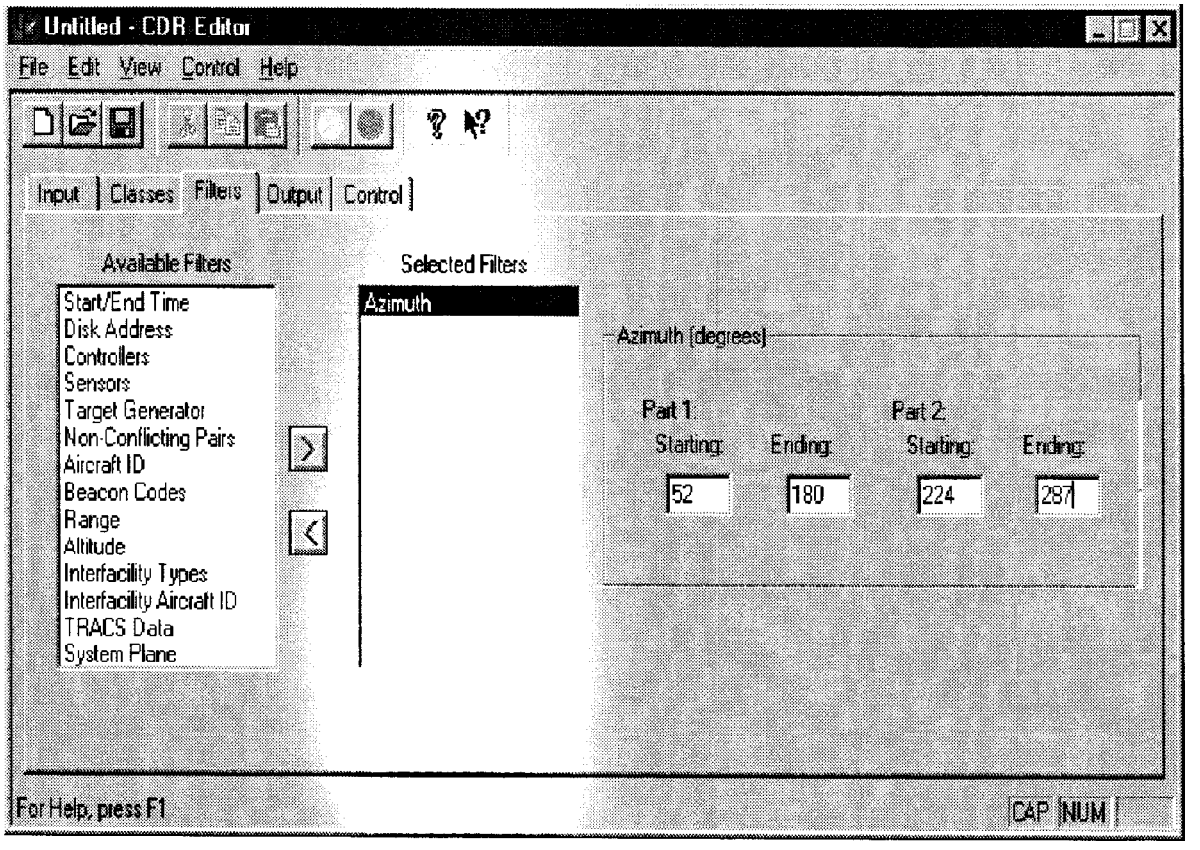


FIGURE 4-93. CDR AZIMUTH FILTERS WINDOW

(n) Altitude filter (Figure 4-94). If selected, data which pertain to the altitude filter can be filtered for editing purposes.

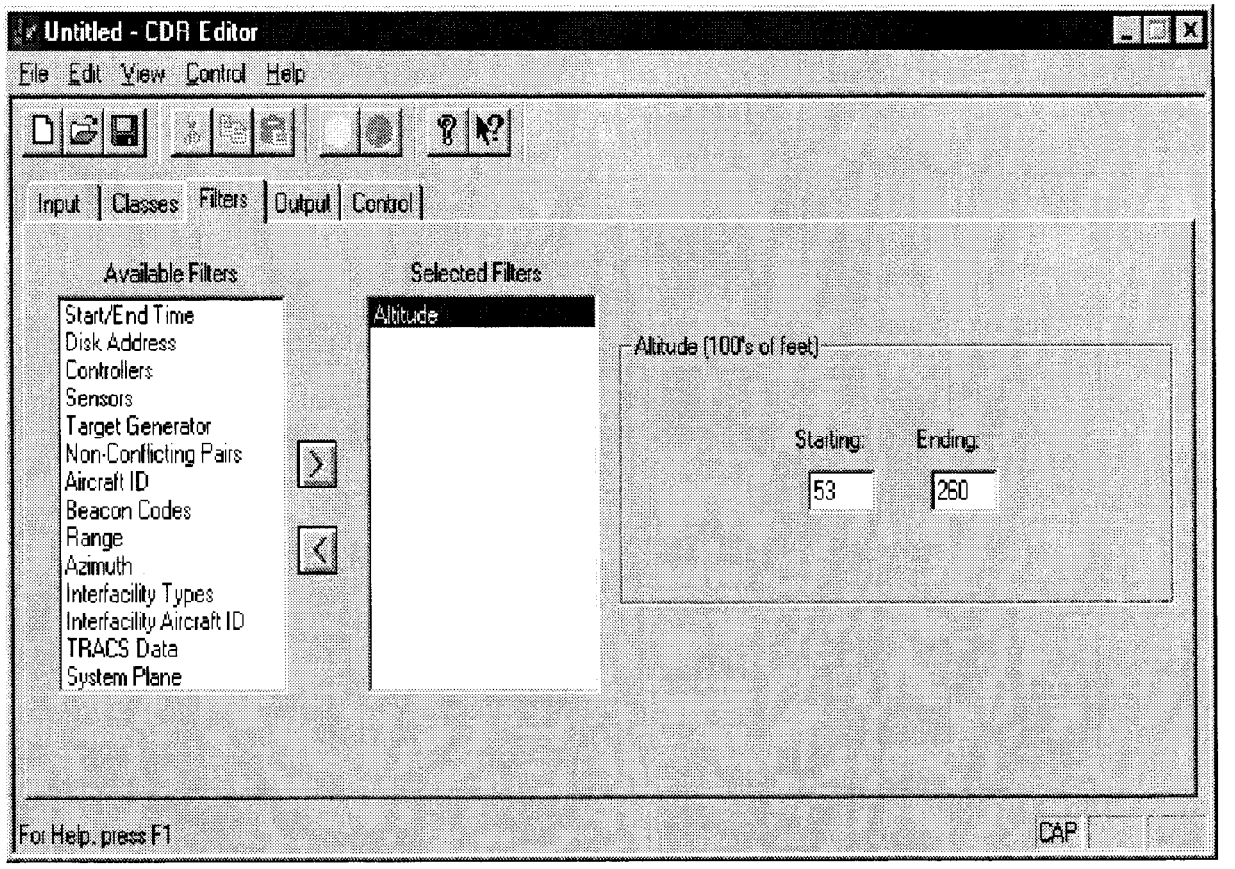


FIGURE 4-94. CDR ALTITUDE FILTERS WINDOW

(o) If the user enters a starting altitude more than ending altitude, an error dialog box will appear (Figure 4-94A).

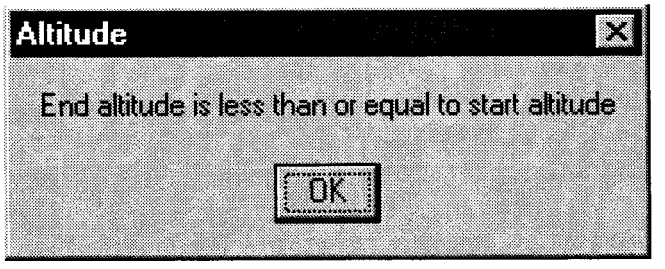


FIGURE 4-94A. ALTITUDE ERROR WINDOW

(p) If the user enters a negative starting point, this message error dialog box will appear (Figure 4-94B).

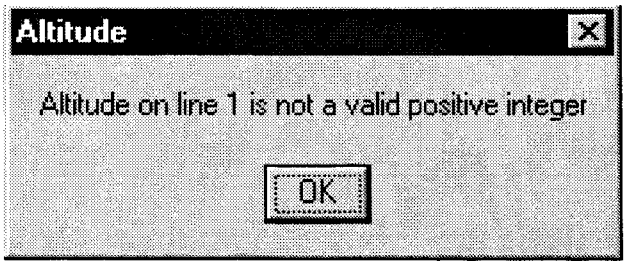


FIGURE 4-94B. INVALID ALTITUDE INTEGER WINDOW

(1) Values entered are in hundreds of feet. (Entering 155, represents 15,500 feet.).

(2) Place the cursor in either box; if blank, type in a numeric. If a numeric is present, delete the numeric, and type in the new numeric or,

(3) Place the cursor in any box, hold the left mouse button down, and select/block the numeric. Type in the new numeric.

(4) Click on the Control Tab to review changes in Selected Parameters box.

(q) Interfacility Types filter (Figure 4-95). If selected, datawhich pertain to the Inter-facility filter can be filtered for editing purposes.

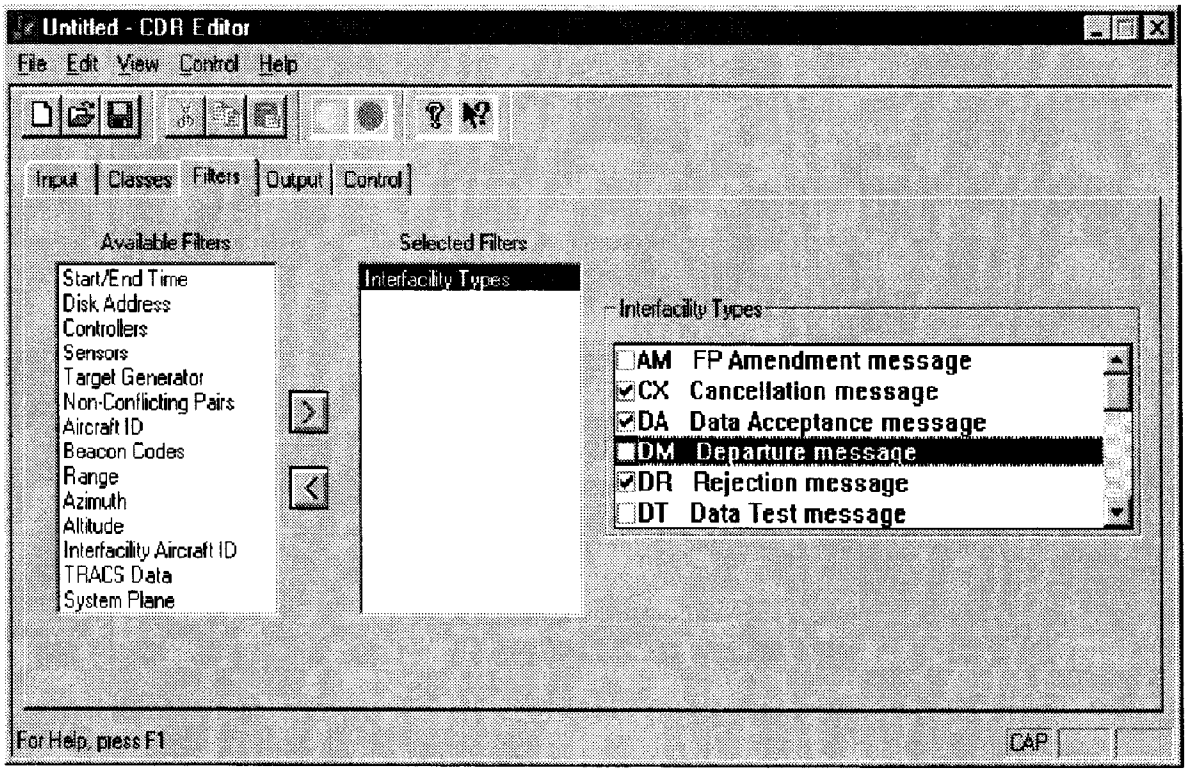


FIGURE 4-95. CDR INTERFACILITY TYPES FILTER WINDOW

(1) To view all Inter-facility types, use the scroll bar on right side of box.

a Click on the up/down arrows to move the list one position up or down or,

b Click in the area between the slider bar and arrow and move the list several positions or,

c Click and hold on the slider bar, then move the mouse position forward or backward to rapidly move through the list.

(2) Place the cursor in the checkbox of the Interfacility Types box corresponding to the desired message type and click. The checkbox now contains a "✓" and the sensor selected.

a Ensure you click the checkbox and not the Inter-facility Type name. High-lighting the name does not select.

(3) Click on the Control Tab to review changes in Selected Parameters box.

(r) Inter-facility Aircraft ID filter (Figure 4-96). If selected, data which pertain to the Inter-facility Aircraft ID filter can be filtered for editing purposes. When selected, Interfacility Types filter is also selected. and the FP inter-facility type is automatically selected. All other interfacility types are disabled.

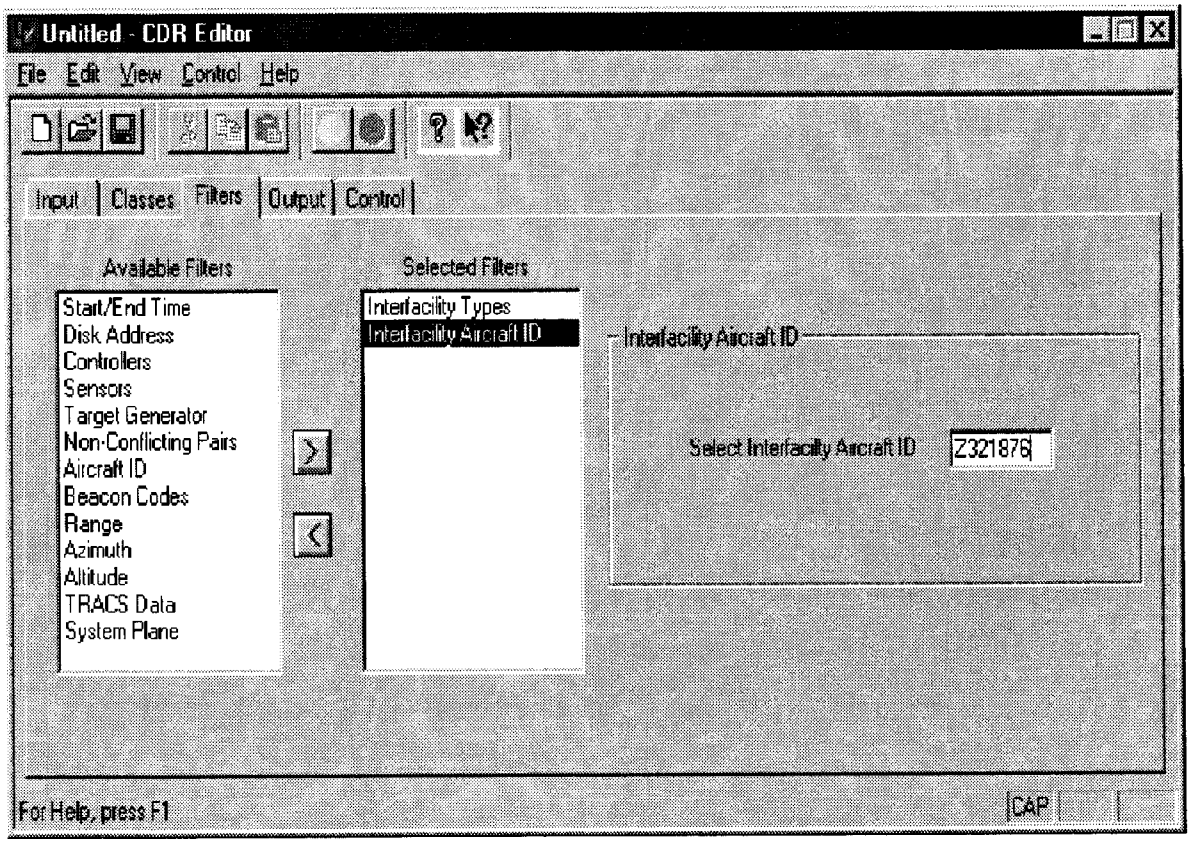


FIGURE 4-96. CDR INTERFACILITY AIRCRAFT ID FILTER WINDOW

(1) Aircraft IDs may consist of up to seven alphanumeric characters. The first character must be an alpha.

(2) Place the cursor in Select Interfacility Aircraft ID box; if blank, type in new alphanumeric. To change an existing aircraft ID, delete the alphanumeric, and type in the new alphanumeric or,

(3) Place the cursor in any box, hold the left mouse button down, and select/block the alphanumeric. Type in the new alphanumeric.

(4) Click on Control Tab to review changes in Selected Parameters box.

(s) TRACS Data filter (Figure 4-97). If selected, a checkbox is displayed which allows the user to select/deselect a Radar Only Reports filter.

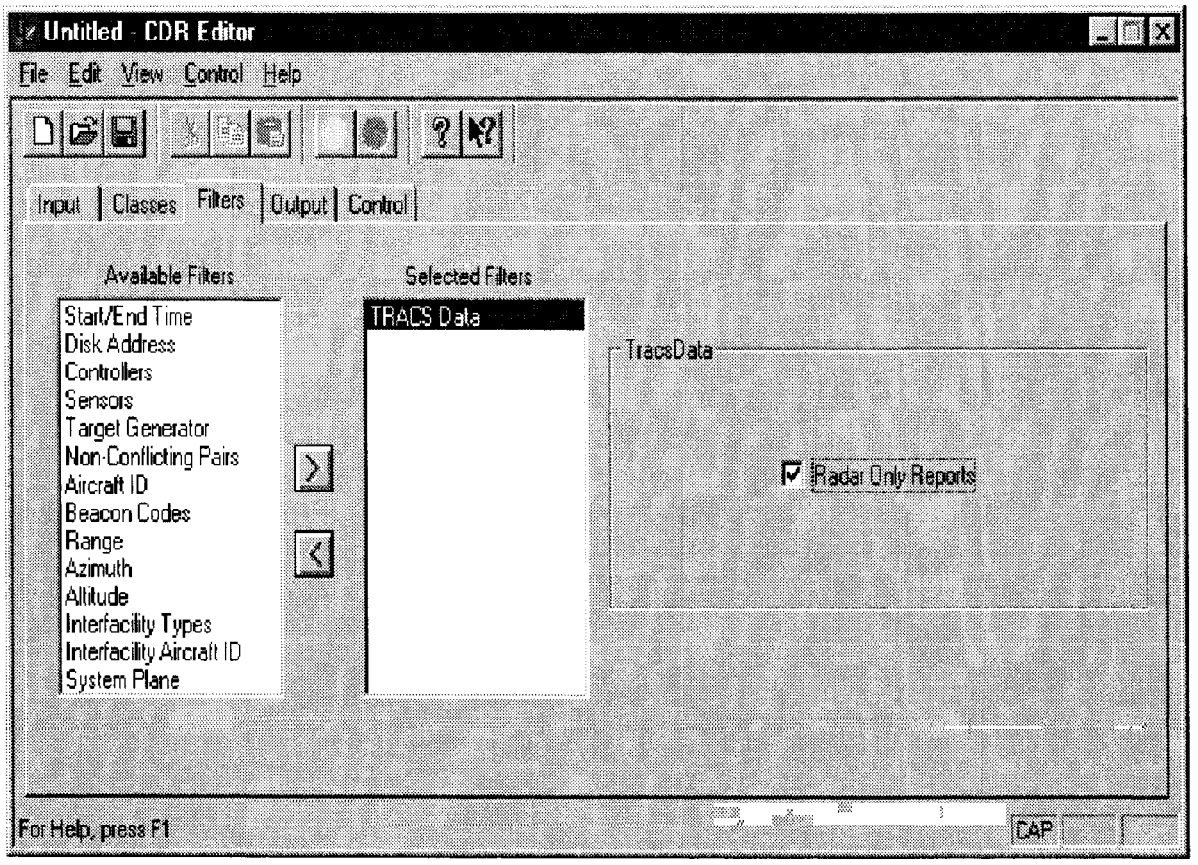


FIGURE 4-97. CDR TRACS FILTER WINDOW

(1) Click the Radar Only Reports or the checkbox to select/deselect the radar only reports filter. A "✓" indicates selected. A blank box indicates deselected.

(t) System Plane Filter (Figure 4-97A).

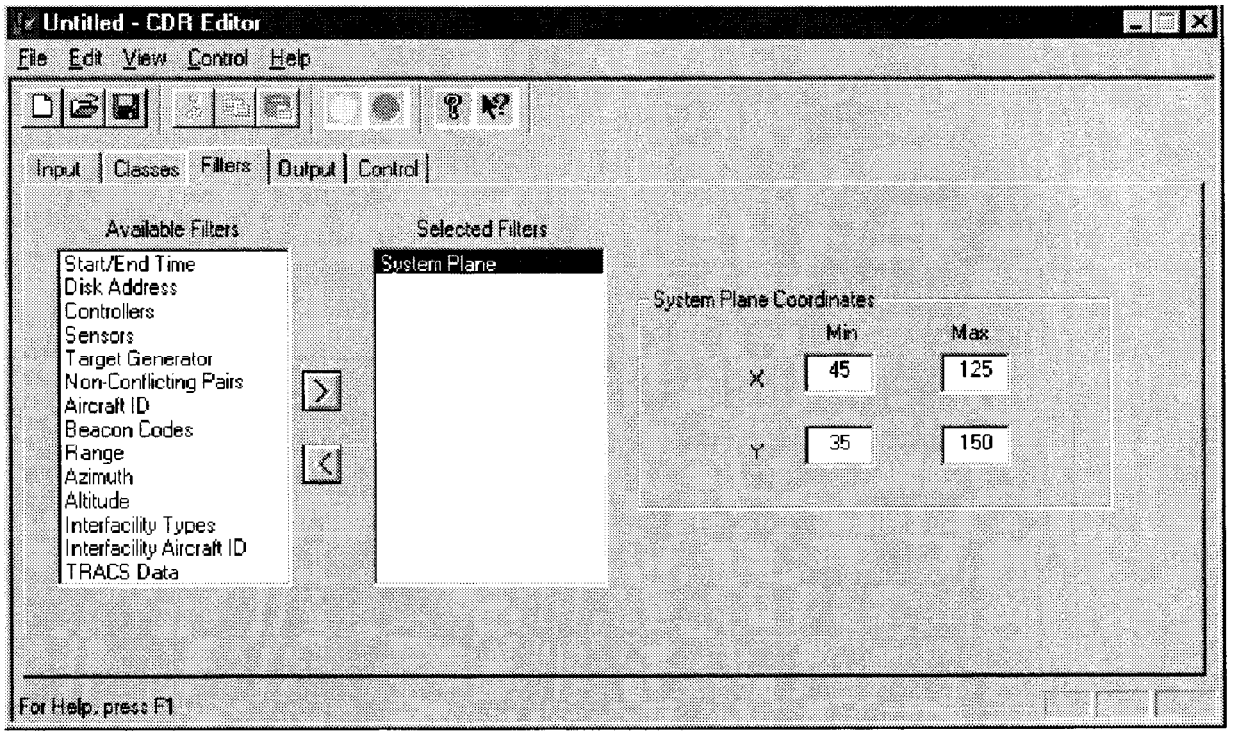


FIGURE 4-97A. CDR SYSTEM PLANE FILTER WINDOW

(1) Fill in the Min and Max System Plane Coordinates by placing the cursor on the field and selecting a numeric value in the range 0 to MAX_SYS_X (SV) or MAX_SYS_Y (SV). For invalid coordinates error messages will be displayed.

6. Input tab (Figure 4-98):

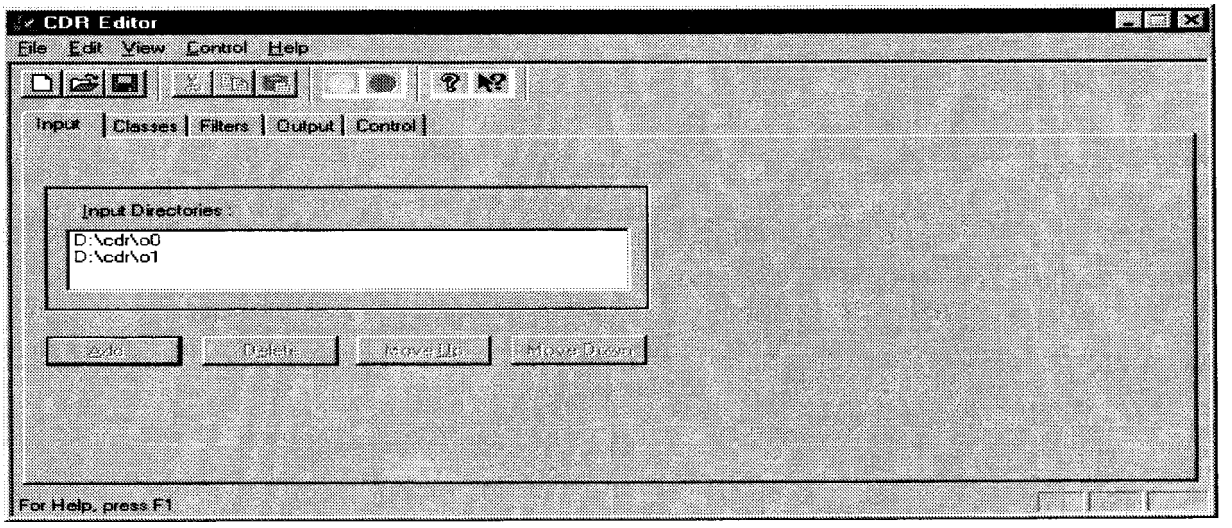


FIGURE 4-98. CDR INPUT FILTER WINDOW

(a) Observe a box for Input Directories. Selecting a file(s) from this box is used in the editing process to reference where the CDR extraction data are located.

(b) To use one or two of the files listed in this box, click on the appropriate pathname.

(1) The order of selection determines the processing order (Input Path 1 then Input Path 2).

(2) The processing order can be changed by highlighting a pathname and clicking on the Move Up or Move Down button, depending on its current input path position.

(c) To enter new pathnames, click on the Add button.

(1) Observe an Open window (Figure 4-99).

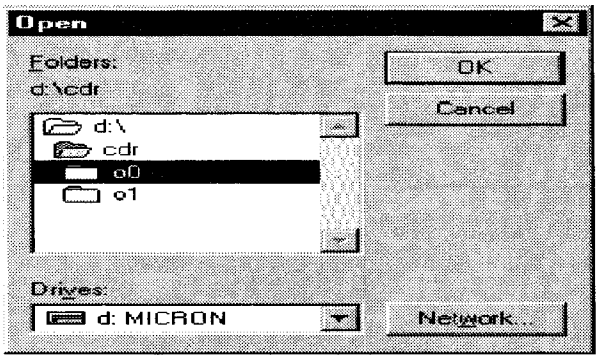


FIGURE 4-99. CDR INPUT OPEN DIRECTORY WINDOW

(2) Select the path by clicking on the appropriate drive, directory, subdirectory(ies), and file.

(3) Click OK to select file highlighted and return or Cancel to return without file selected.

(4) Observe the pathname appears in the Input Directories box and as a CDR Input path.

(5) Select the Control Tab/Selected Parameters/Input Path 1/2 to verify file selection.

(d) To delete pathnames, click on the pathname in the Input Directories box to be deleted, it highlights, then click the Delete button.

7. Output tab (Figure 4-100):

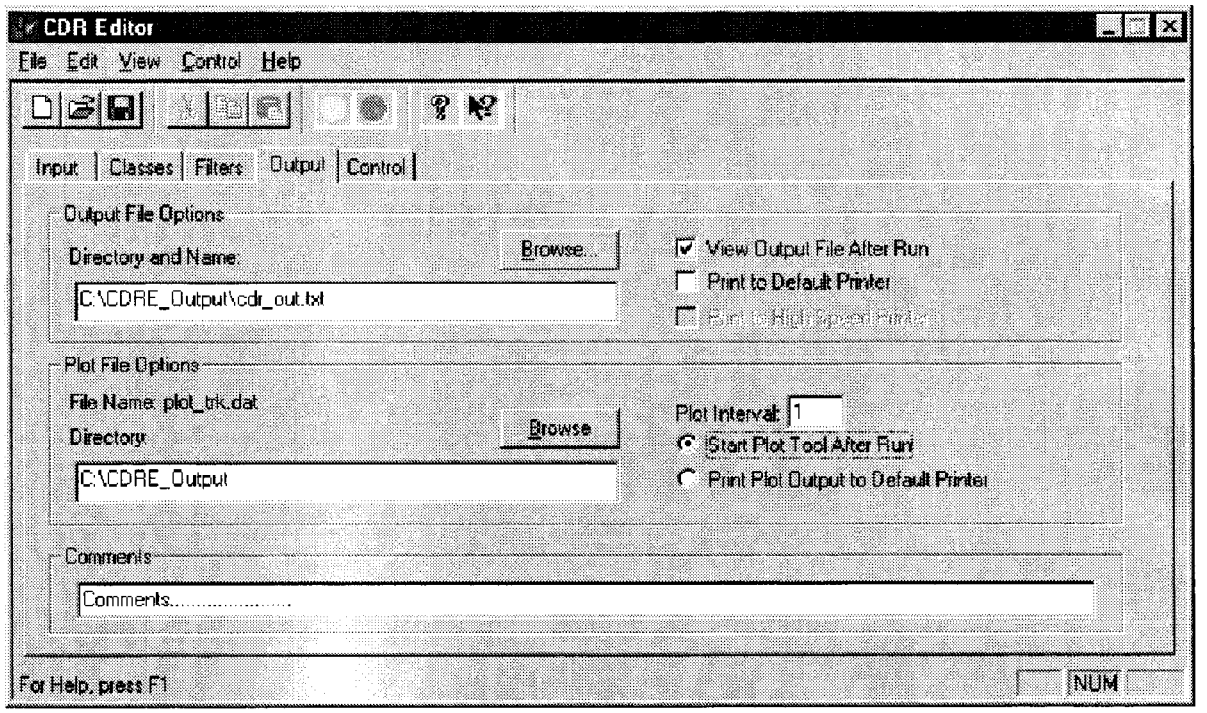


FIGURE 4-I 00. CDR OUTPUT FILE WINDOW

(a) Observe an Output File Options box, a Plot File Options box, and a Comments box.

(b) The pathname listed in the Directory and Name box is the output file in which the CDR Editor will place the processed data:

(1) To establish an output file, click in the Directory and Name box.

(2) Type in the full pathname (drive, directory, subdirectory(ies), file) or,

(3) Click on the Browse button.

(4) Observe an Output Open File window (Figure 4-101).

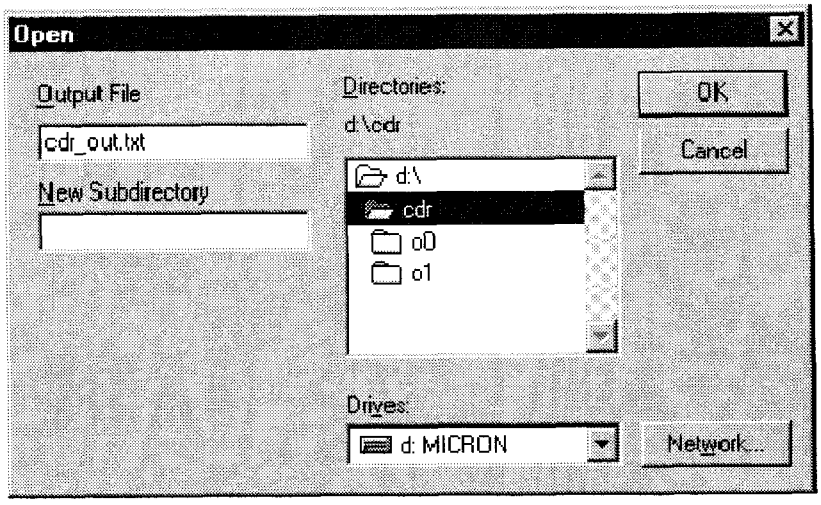


FIGURE 4-I 01. CDR OUTPUT OPEN FILE WINDOW

(5) Select the path by clicking on the appropriate drive, directory, subdirectory(ies), and file:

a In the Open Output File window, observe the output file cdr_out.txt is set as default. It may be changed/modified by the user.

b In the New Subdirectory window, the selection of an alternate subdirectory may be set by the user.

c Click OK to select current output file and/or subdirectory and return or Cancel to return without change.

(6) Observe the pathname appears in the Directory and Name box.

(7) Select the Control Tab/Selected Parameters/Output Path and Output File to verify path/file selection.

(8) To view the output file:

a Select the output tab.

b Click on the View Output File After Run button.

c Observe a "✓" appears in the box if selected, blank if deselected.

(9) To print to default printer:

a Select the output tab.

b Click on the Print to Default Printer button.

c Observe a "✓" appears in the box if selected, blank if deselected.

d Printing occurs on the default printer (Local Printer or HSP).

(10) To print to HSP:

a Select the output tab.

b Click on the Print to High Speed Printer button.

c Observe a "✓" appears in the box if selected, blank if deselected.

d If the chassis connected to the HSP is either not available or is in an Active state, the request is denied.

e If an HSP printer job is running when that chassis becomes Active, the job is terminated to prevent status messages from being interleaved with the CDR Editor output.

(c) Observe the Plot File Options box (Figure 4-100).

(1) To establish an output plot file:

a Observe the default filename — plot-trk.dat

b Click in the Directory box.

(2) Type in the path (drive, directory, subdirectory(ies)) or,

(3) Click on the Browse button.

a Observe the Plot File open file window (Figure 4-102).

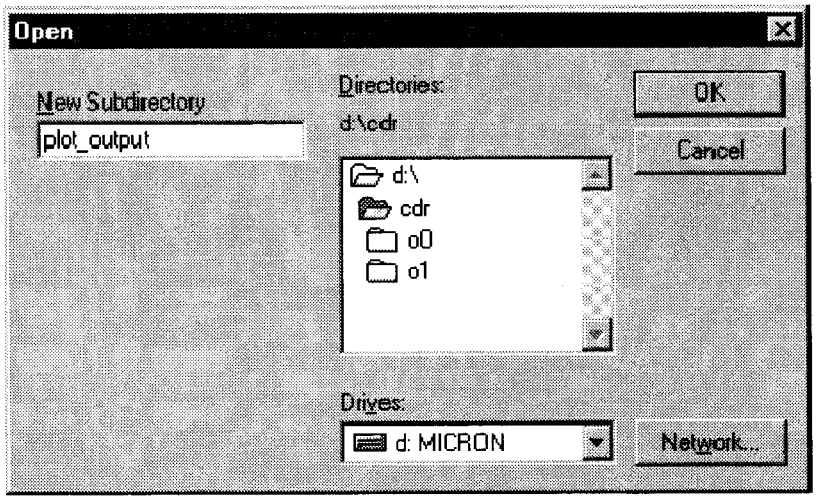


FIGURE 4-102. CDR OUTPUT OPEN DIRECTORY WINDOW

(4) Select the path by clicking on the appropriate drive, directory, subdirectory(ies).

a Click OK to select current output file and/or subdirectory and return or Cancel to return without change.

(5) Observe the path appears in the Directory box.

(6) Select the Control Tab/Selected Parameters/Plot Path to verify path selection.

(7) To start the plot tool:

a Select the Output tab.

b Click on the Start Plot Tool After Run radio button.

c Observe a "✓" appears in the box if selected, blank if deselected.

(8) To print plot output to default printer:

a Select the Output tab.

b Click on the Print Output to Default Printer radio button.

c Observe a "✓" appears in the box if selected, blank if deselected.

(9) Select plot interval by clicking in the Plot Interval box; if blank, type in new alphanumeric. (Valid range is 1 through 15.)

(10) To change an existing interval, delete the numeric, and type in the new numeric or,

(11) Place the cursor on old numeric, hold the left mouse button down, and select/ block the alphanumeric. Type in the new numeric.

(12) Click on Control Tab (Figure 4-103) to review changes in Selected Parameters/ Plot Interval.

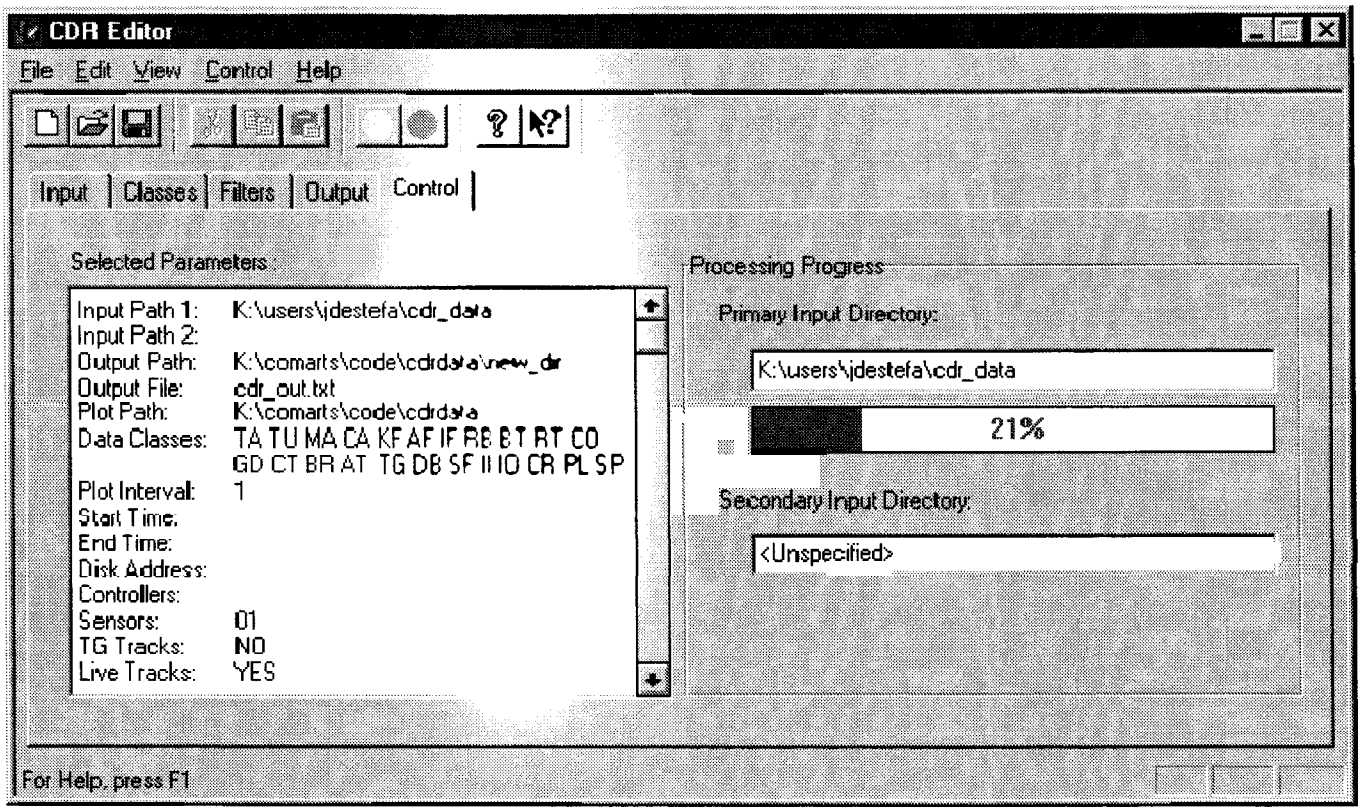


FIGURE 4-I 03. CDR EDITOR CONTROL WINDOW

(d) Observe the Comments box (Figure 4-100).

(1) Clicking in the Comments box, the user may enter one line of data which are added to the CDR Editor formatted output.

(2) Previously written comments may be deleted. Type in a new comments line.

e. CDR Editor operations:

1. If the user has set up the CDR Editor (in paragraph d above), proceed to paragraph e, step 2; otherwise, review the steps in paragraph d and complete any necessary omissions.

2. To start the CDR Editor:

(a) Click Control in the Menu bar and select START or

(b) Click the Start (green button) in the Toolbar menu.

3. To monitor CDR Editor process:

(a) Select the Control tab (Figure 4-103).

(b) Observe the Selected Parameters box with the Input Paths 1 and 2, and the Output Path and File identified.

(c) Observe progress bar(s) for each of the Primary and Secondary Input files.

(1) Progress bar(s) measure the completion percentage for either file (0% to 100%).

4. To stop the CDR Editor (CDR editing may be stopped at any time):

(a) Select Control/Stop or click Stop (red button) in the Toolbar.

(b) Any one of the following events may also cause the Editor to terminate an edit in progress:

(1) The upper limit of the time filter has been exceeded.

(2) All extracted CDR data through the end of the last selected input device have been read.

(3) The CDR data contain more than the maximum allowed distinct FP Maintenance messages.

4.5.2 Map Functions (FDAD Only)

Map Functions allows the user to create, update, and delete FDAD map sets.

a. Special Notes:

1. The map files in a map set must reside on the same SMC hard disk as the map set.

2. All created map files must reside on the SMC hard disk in directory \(DO or D1)\mmaps.

3. All created map sets are on the SMC hard disk in directory \(DO or Dl)\msets.

4. Prior to deleting a map file, the map filename must be deleted from any map set in which it is used.

5. Map files may be used in more than one map set.

b. Map Functions operation:

1. Click Map Functions (Figure 4-81).

2. Use the arrow to select the drive and pathname where the Map Files are located or select Network to map a drive not currently available (Figure 4-103).

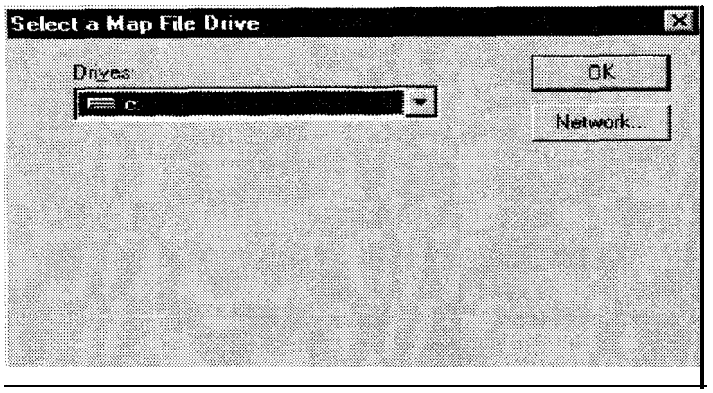


FIGURE 4-103A. MAP FILE DRIVE WINDOW

3. Select OK to continue.

4. Observe the Map Functions window (Figure 4-104).

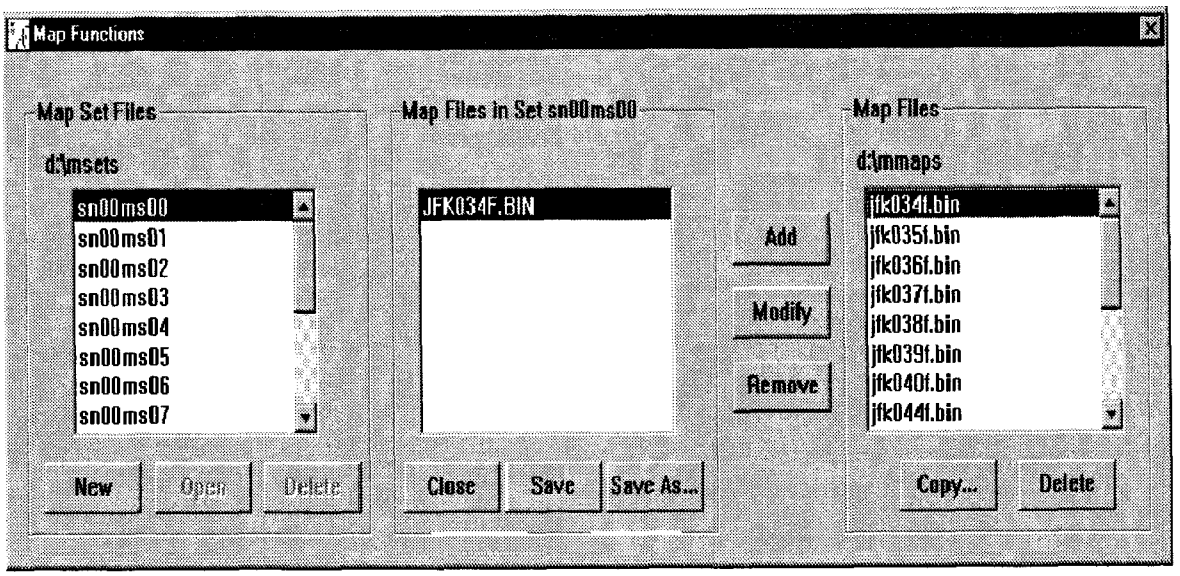


FIGURE 4-I 04. MAP WINDOW

5. Observe three boxes: Map Set Files, Map Files In Set, and Map Files.

6. To create map sets:

   (a) In the Map Set Files box, click the New button.

   (b) Observe any files listed in the Map Files in Set disappear.

   (c) In the Map Files box, individually click on up to six map files listed. Use scroll bar to review complete list of map files.

      (1) Click on the up/down arrows to move the list one position up or down or,

      (2) Click in the area between the slider bar and arrow and move the list several positions or,

      (3) Click and hold on the slider bar, then move the mouse position forward or backward to rapidly move through the list.

   (d) Observe as each file is selected, it highlights.

   (e) After each file is selected, click the Add button.

      (1) If the addition of the file will exceed the allowable size of the map set, a message box is displayed (Figure 4-104A).

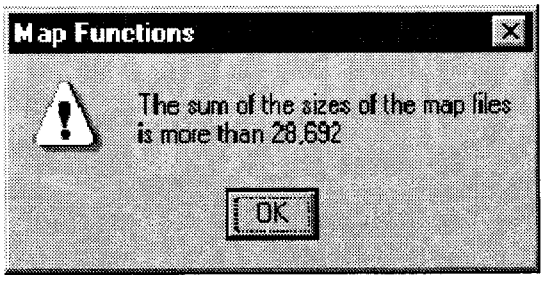


FIGURE 4-l 04A. MAP SET FILE SIZE EXCEEDED WINDOW

      (2) If the addition of the file will exceed the allowable number of files in a map set, a message box is displayed (Figure 4-104B).

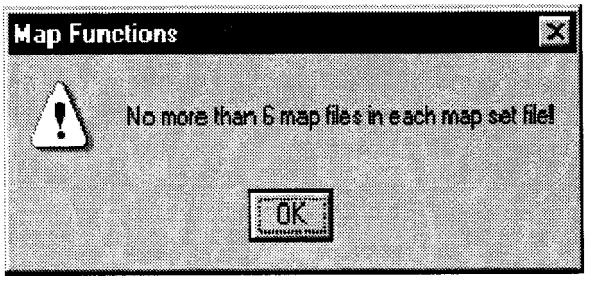


FIGURE 4-l 048. MAXIMUM NUMBER OF MAP FILES EXCEEDED WINDOW

(f) Observe the selected file appears in the Map Files In Set box.

(g) After up to six files are selected, click the Save As button.

(h) Observe Save As window.

(i) Type in the full pathname (drive, directory, subdirectory(ies), file) or,

(j) Select the path by clicking on the appropriate drive, directory, subdirectory(ies), and typing in the new map set filename.

(k) Observe the map set filename replaces the title of the Map Files In Set box and appears in the Map Set Files list.

7. To delete map sets:

(a) In the Map Set Files box, click on the map set to be deleted. Use the scroll bar to review complete list of map set files.

(b) Observe the file highlights.

(c) Click on the Delete button.

(d) Observe the file is deleted.

8. To delete map files:

(a) In the Map Files box, click on the map file to be deleted.

(b) Observe the file highlights.

(c) Click the Delete button.

(d) If this map file is still referenced in one or more map sets, the user is prompted to either cancel the deletion or to confirm the deletion (Figure 4-I 04C).

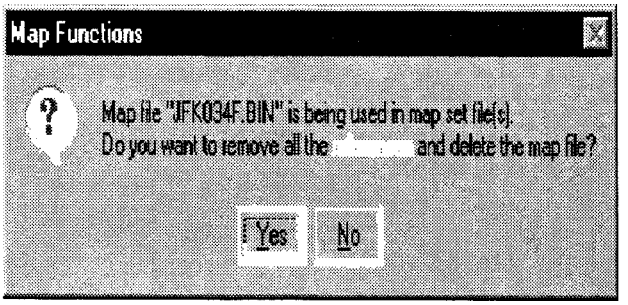


FIGURE 4-I 04C. MAP FILE DELETION CONFIRMATION WINDOW

9. To update map sets:

(a) In the Map Set Files box, click on the map set to be updated. Use the scroll bar to review complete list of map set files.

(b) Observe the file highlights.

(c) Double click the highlighted file or click on the Open button.

(d) Observe that files appear in the Map Files In Set box.

(e) In the Map Files In Set box, click on the file to be updated.

(f) Observe the file highlights.

(g) In the Map Files box, click on the new or updated file.

(h) Observe the file highlights.

(i) Click the Modify button.

(j) If more files are to be updated, repeat steps (e) through (i).

(k) After the file(s) are updated, click the Save button in the Map Files In Set box.

10. To copy map files:

    (a) In the Map Files box, click on the Copy button.

    (b) Observe a Copy Map Files selection box.

    (c) Select file name from the scrollable list on the left of the selection box.

    (d) Selecting a file highlights the file and places the filename in the File Name box.

    (e) Select the receiving directory by clicking the appropriate drive and double clicking the directories until the appropriate directory is highlighted.

    (f) Click OK to perform the copy function and exit or Cancel to exit without change.

11. To exit:

    (a) Click the upper right corner (x) symbol or click once on the icon and select exit from the pull-down menu.

4.5.3 Replay

Replay provides the user the **ability to** replay CDR display data for multiple displays over the network.

a. Special Notes:

1. The following conditions must be met for selection of the REPLAY icon or error messages result at the SMC **PC.**

    (a) Only one SMON may be operational on the LAN and it must be OFFLINE.

    (b) The applicable CDR disk must be made available on the Control menu, Disk Availability selection.

    (c) TP and CP chassis switched out of the system on separate LAN or powered off.

2. Omission of start date and time causes Replay to begin at the time contained at the beginning of the CDR file.

3. Auto-Terminate, if disabled, allows the user to replay more than one consecutive CDR session from the selected input devices without terminating. Auto-Terminate, if enabled, terminates Replay when a CDR termination message is encountered.

b. Menu Bar Functions:

File Menu

Exit	Exits Replay and closes all associated windows.

View Menu

Toolbar	Toggles the Toolbar between displayed and hidden.
Status Bar	Toggles the Status Bar between displayed and hidden.

Control Menu

Start	Starts Replay processing.
stop	Stops Replay processing.
Disk Availability	Displays a dialog that allows the user to make a CDR disk available.

c. Toolbar Functions:

Green Circle Button	Starts Replay processing.
Red Circle Button	Stops Replay processing.

d. Replay operation:

1. Click Replay (Figure 4-81).
2. Observe the Replay window (Figure 4-105).

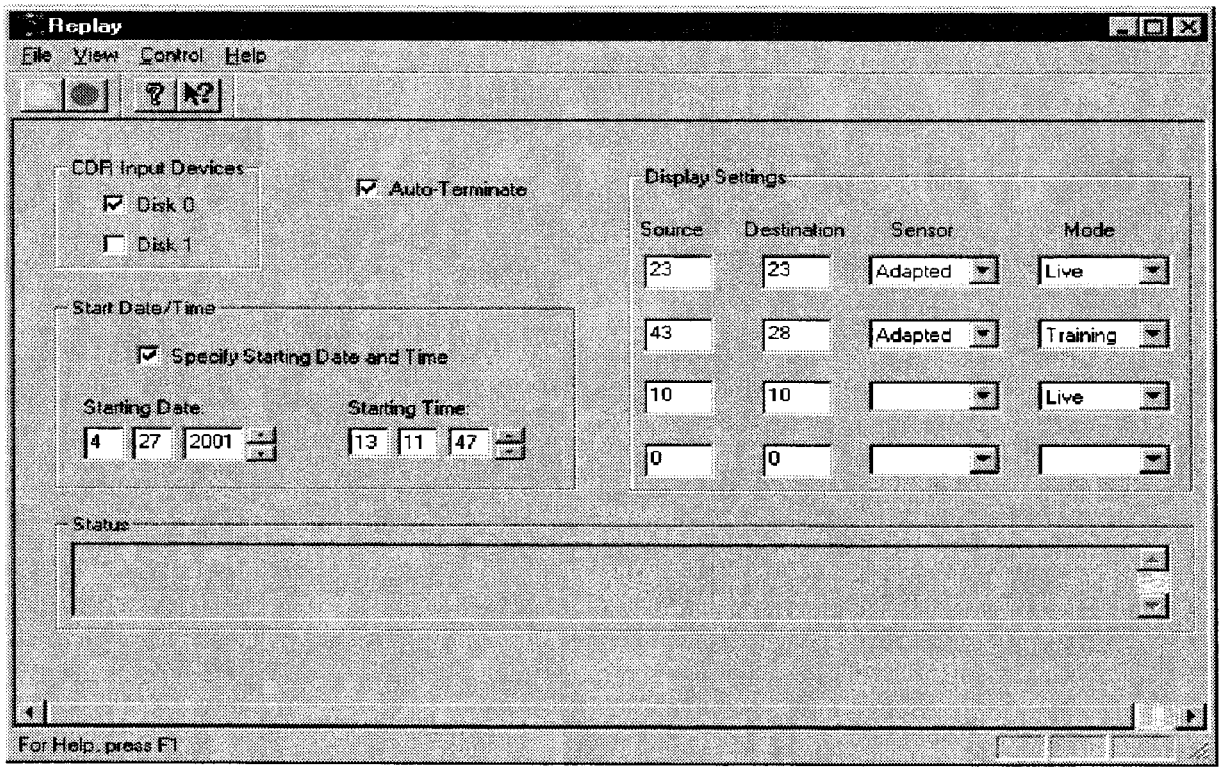


FIGURE 4-l 05. REPLAY WINDOW

3. This error message dialog box appears when any of the conditions listed in all are not fulfilled (Figure 4-l 05A).

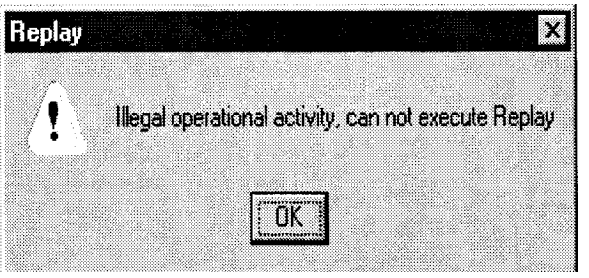


FIGURE 4-l 05A. REPLAY FUNCTION ERROR MESSAGE WINDOW

4. If disk not selected (1) c, then message prints in Status box of the Replay Function. (Figure 4-105B).

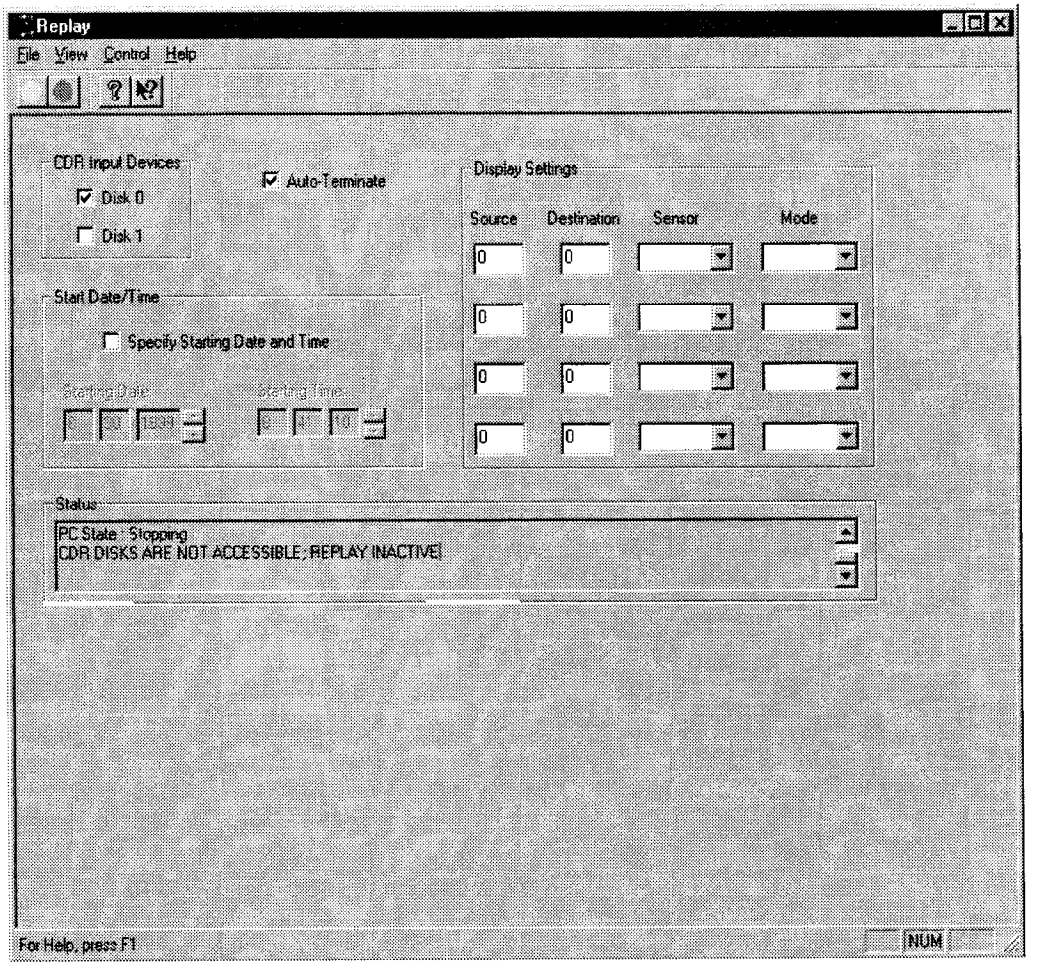


FIGURE 4-l 058. REPLAY FUNCTION WINDOW

5. Place the cursor in the CDR Input Devices box:

   (a) Click on either the checkbox(es) or the title(s) (checkbox blank) to select Disk 0, Disk 1, or both. (Select both to continue replay from first to second disk.)

   (b) Clicking on the Disk (a "✓" in the checkbox) deselects that disk (a blank checkbox).

6. Place the cursor in any of the Start Date: or Start Time: boxes.

   (a) Click the up/down arrows to increase/decrease the start date (mmddyy) or the starting time (hhmmss) or,

   (b) Place the cursor in any box, delete the numeric, and type in the new numeric or,

   (c) Place the cursor in any box, hold the left mouse button down, and select/block the numeric. Type in the new numeric.

7. Place the cursor in the source (first column) Display Settings boxes. The source display identifies which displays from the CDR data will be used. If both CDR disks are selected an error message "CDR disks are not accessible, Replay inactive" will be printed in the status section. See Figure 4-105B.

   (a) Type in the display number to be used in Replay.

      (1) The order of displays selected is not critical.

   (b) If the user attempts to send a message where a zero value in either the Source or Destination field is paired with a valid value in the other, a message box is displayed (Figures 4-106, 4-107) and the message is not sent.

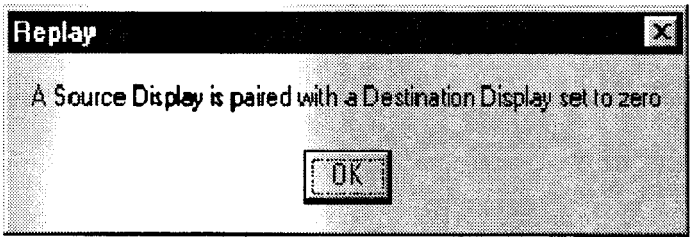


FIGURE 4-106. NO DESTINATION DIALOG WINDOW

FIGURE 4-l 07. NO SOURCE DIALOG WINDOW

(c) If the user enters a value that is greater than 223 in either the Source or Destination field, then a message box is displayed (Figure 4-108).

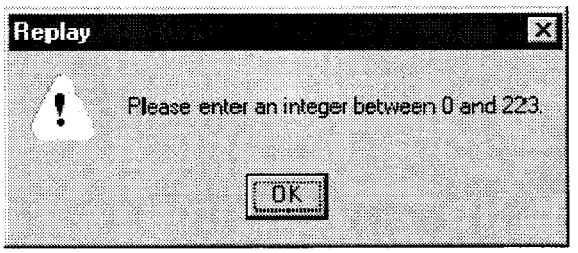


FIGURE 4-108. INVALID INTEGER DIALOG WINDOW

8. Place the cursor in the destination (second column) Display Settings boxes. The destination display is the actual display position where the replay data is viewed.

   (a) Type in the display number of a display to be used in Replay.

      (1) Any display selected removes that display from the operational state.

      (2) The order of displays selected is not critical.

   (b) If the user attempts to send a message where a zero value in either the Source or Destination field is paired with a valid value in the other, a message box is displayed (Figures 4-106, 4-107) and the message is not sent.

   (c) If the user enters a value that is greater than 223 in either the Source or Destination field, then a message box is displayed (Figure 4-108).

9. Place the cursor in the sensor (third column) Display Settings boxes.

   (a) Click on the arrow to change the sensor.

   (b) Observe a menu with Adapted, along with a list of sensors, and Mosaic.

   (c) Click on the desired sensor, or Adapted, or Mosaic.

10. Place the cursor in the mode (fourth column) Display Settings boxes.

   (a) Click on the arrow to change the mode.

   (b) Observe a menu with Live and Training.

   (c) Click on the desired mode.

11. Click on the Auto-Terminate box or title.

   (a) If checkbox is blank, Auto-Terminate is disabled.

   (b) If "✓" in the checkbox, Auto-Terminate is enabled.

12. Select Control/Start or click the green circle icon in the Toolbar to start the Replay session or select File/Exit to exit without starting the session.

13. Observe Status box for current status of Replay processing.

    (a) The Status box also displays the current status of Replay (Inactive, Initializing, Active, or Session Complete).

14. Click Control/Stop or Toolbar/Stop to stop Replay processing.

    (a) Subsequent Replay sessions may be activated.

4.5.4 Retrack

Retrack allows the user to inject previously recorded CDR target, Inter-facility, and controller keyboard message data in the ARTS system.

a. Special Notes:

1. The Retrack SMC-PC must be offline. This function should not be executed at an operational facility.
2. Omission of the date/time entry causes Retrack to begin at the time contained at the beginning of the first CDR file.
3. Auto-Terminate, if disabled, allows the user to replay more than one consecutive CDR session from the selected input devices without terminating.
4. Retrack replays only the CDR data for those data classes selected.
5. Retrack displays the status of the PC, CP, and TP states in the Status window.

b. Menu Bar Functions:

File Menu

Exit	Exits Retrack and closes all associated windows.

View Menu

Toolbar	Toggles the Toolbar between displayed and hidden.
Status Bar	Toggles the Status Bar between displayed and hidden.

Control Menu

Start	Starts Retrack processing or updates Data Class or Filters parameters (except for TA Data Class) while Retrack is running.
stop	Stops Retrack processing.
Terminate	Terminates Retrack processing and returns system to operational state.
Disk Availability	Displays a dialog that allows the user to make a CDR disk available.

c. Toolbar Functions:

Green Circle Button	Starts Retrack processing.
Red Circle Button	Stops Retrack processing.
Red Circle Button with T	Terminates Retrack processing and returns system to operational state.

d. Retrack Setup operation:

1. Click Retrack (Figure 4-81).

2. Observe the Retrack window (Figure 4-109).

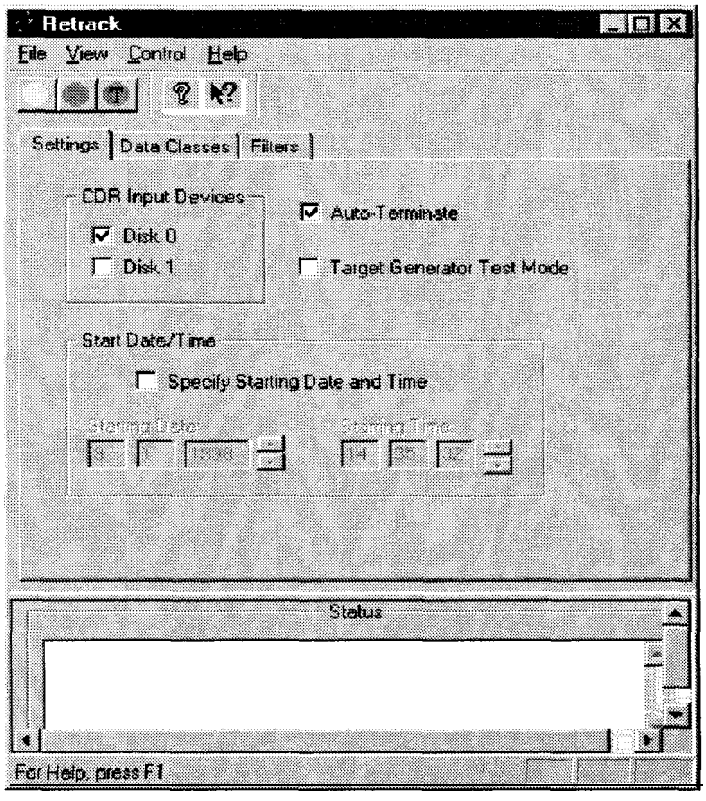


FIGURE 4-I 09. RETRACK WINDOW SHOWING SETTINGS TAB

3. Observe the three tabs: Settings, Data Classes, and Filters.

4. Settings tab (Figure 4-109):

(a) Place the cursor in the CDR Input Devices box.

(1) Click on either the checkbox(es) or the title(s) (checkbox blank) to select Disk 0, Disk 1, or both. CDR input allows the user to specify the input devices CDR disk 1 or CDR disk 2 or both. If both are selected then Retrack will use both disks' previously recorded CDR targets, interfacility, and controller keyboard message data in the ARTS system.

(2) Clicking on the Disk (a "✓" in the checkbox) deselects that disk (a blank checkbox).

(b) Click on the Auto-Terminate box or title.

(1) If checkbox blank, Auto-Terminate is disabled.

(2) If "✓" in the checkbox, Auto-Terminate is enabled.

(c) Click on the Target Generator Test Mode box or title.

(1) If checkbox is blank, TG Test Mode is disabled

(2) If "✓" in the checkbox, TG Test Mode is enabled.

(3) Target Generator Test Module allows the user to enable/disable the replay ETG Training Mode causing training targets to be generated from the ETG keyboard entries.

(d) To specify a Starting Date and/or Starting Time, click on the checkbox and,

(1) Click the up/down arrows to increase/decrease the start date (mmddyy) or the starting time (hhmmss) or,

(2) Place the cursor in any box, delete the numeric, and type in the new numeric or,

(3) Place the cursor in any box, hold the left mouse button down, and select/block the numeric. Type in the new numeric.

5. Data Classes tab (Figure 4-110):

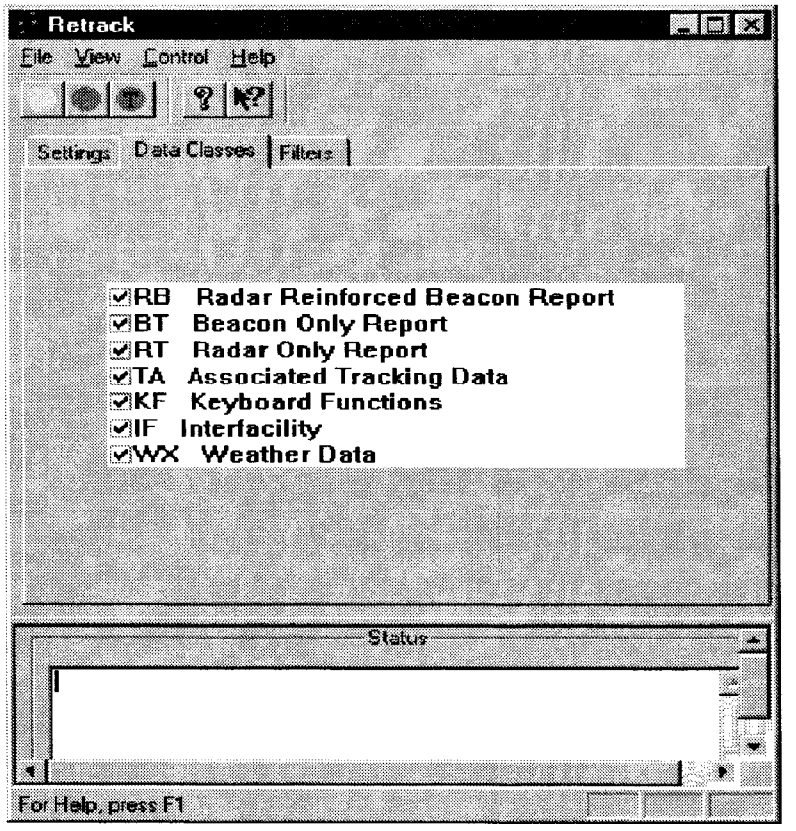


FIGURE 4-l 10. RETRACK DATA CLASSES TAB

(a) Select the data classes that is processed during this Retrack session.

(1) Place the cursor in the checkbox of the box corresponding to the desired data class and click. The checkbox now contains a "✓".

(b) Ensure you click the checkbox and not the Data Class name. Highlighting the name does not select.

(c) If the user chooses the Data Class Tab, a page is displayed that allows the user to select or inhibit processing of individual CDR data classes. Retrack plays only the CDR data for the data classes selected.

6. Filters tab (Figure 4-111):

(a) Observe a list of available filters and another of selected filters. The selected filter list is used in the Retrack processing.

(1) To move individual filters between lists, click on a filter in either list (it becomes highlighted) and then click on the < or the > button to move that class to the alternate list.

(2) Double clicking a filter in either list moves to the alternate list.

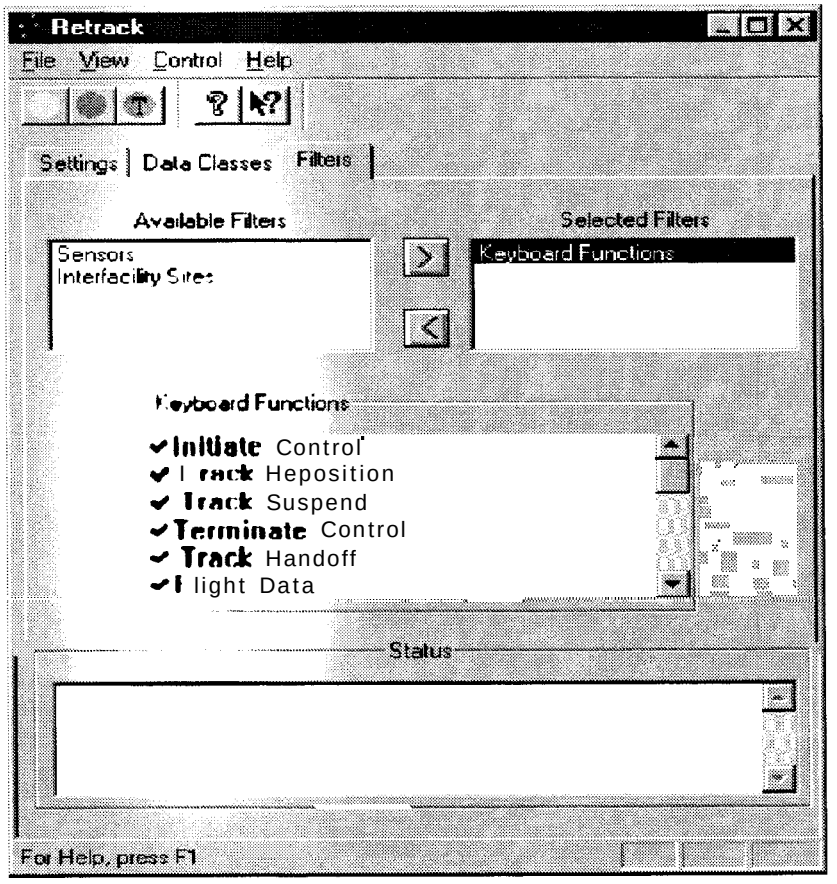


FIGURE 4-111. RETRACK FILTERS TAB

(b) Observe a list of Keyboard Functions:

(1) Place the cursor in the checkbox of the box corresponding to the desired Keyboard Function and click. The checkbox now contains a "✓". Retrack only replays data for the keyboard functions or sub-functions selected.

(2) Ensure you click the checkbox and not the Keyboard Function name. Highlighting the name does not select.

(3) Review all selectable functions by using the scroll bar on the right side of the box.

a Click on the up/down arrows to move the list one position up or down or,

b Click in the area between the slider bar and arrow and move the list several positions or,

c Click and hold on the slider bar, then move the mouse position forward or backward to rapidly move through the list.

(c) Observe a list of Sensor Filters (Figure 4-I 12):

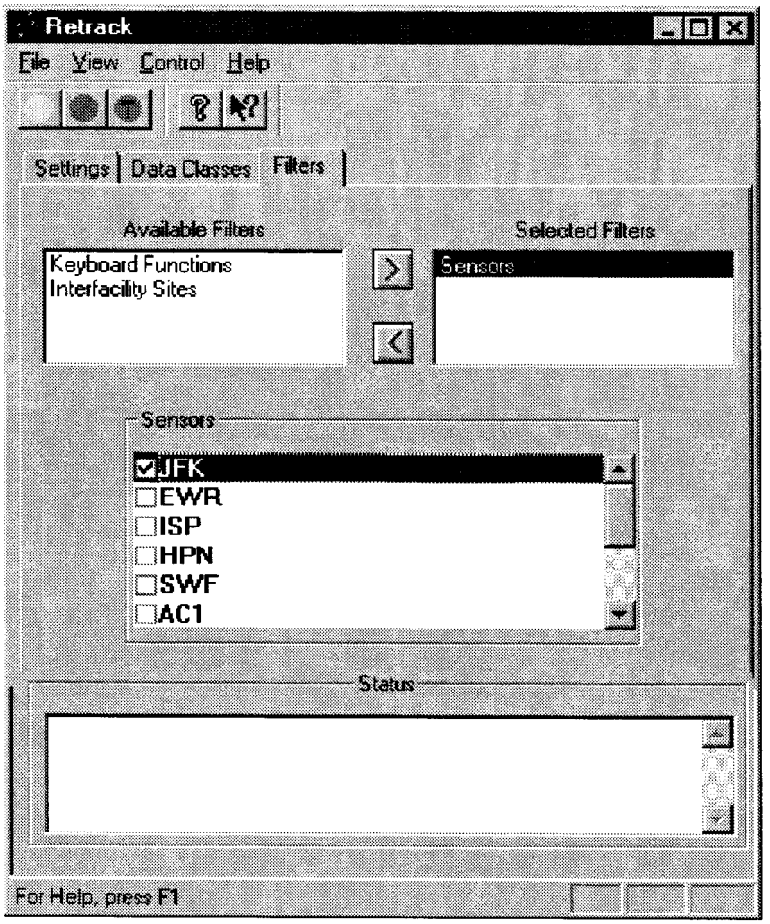


FIGURE 4-I 12. RETRACK SENSOR FILTERS WINDOW

(1) Place the cursor in the checkbox of the box corresponding to the desired sensor and click. The checkbox now contains a " ", checking the sensor allows the user to enable or disable the processing of adapted radar sensors.

(2) Ensure you click on the checkbox and not on the Sensor name. Highlighting the name does not select.

(3) Review all selectable functions by using the scroll bar on the right side of the box.

a Click on the up/down arrows to move the list one position up or down or,

b Click in the area between the slider bar and arrow and moves the list several positions or,

c Click and hold on the slider bar, then move the mouse position forward or backward to rapidly move through the list.

(d) Observe list of Inter-facility Filters (Figure 4-113).

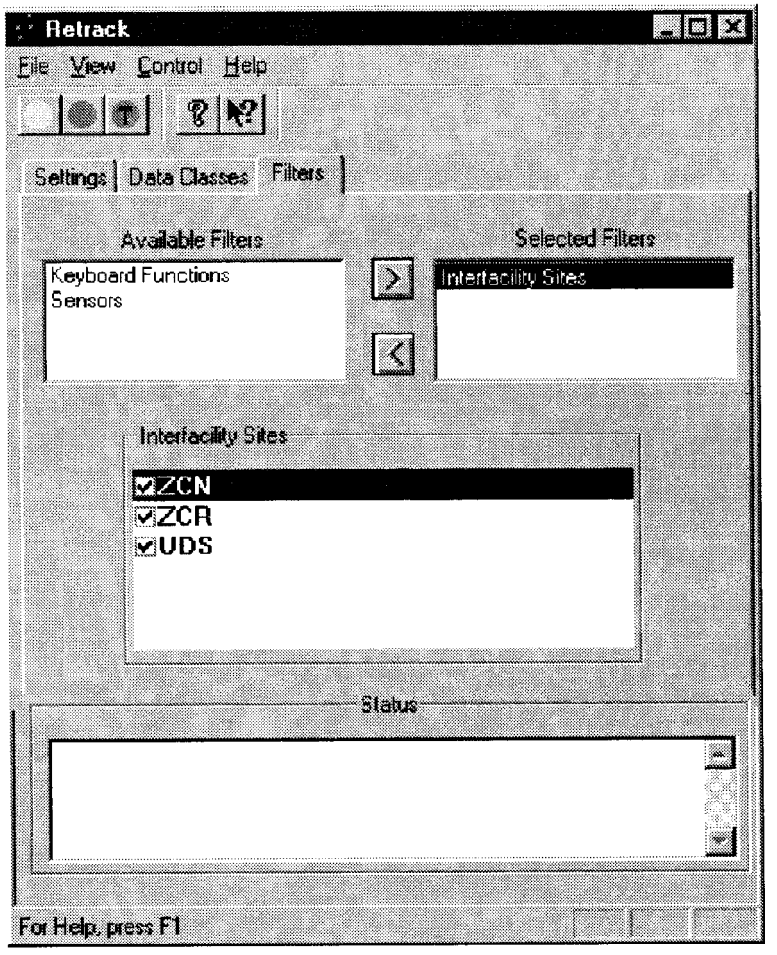


FIGURE 4-113. RETRACK INTERFACILITY FILTERS WINDOW

(1) Place the cursor in the checkbox of the box corresponding to the desired Inter-facility site(s) and click. The checkbox now contains a " ", this allows the user to inhibit or enable the processing of adapted inter-facility sites.

(2) Ensure you click the checkbox and not the Inter-facility Type name. Highlighting the name does not select.

(3) Review all selectable functions by using the scroll bar on the right side of the box.

a Click on the up/down arrows to move the list one position up or down or,

b Click in the area between the slider bar and arrow and move the list several positions or,

c Click and hold on the slider bar then move the mouse position forward or backward to rapidly move through the list.

(4) Observe the Status box.

e. Retrack operation:

1. Select Control/Start or click the green circle icon in the Toolbar to start the Retrack session or select File/Exit to exit without starting the session.

2. Observe Status box for current status of Retrack processing.

(a) Replay Status: Inactive, Initializing, Active, or Session Complete.

3. Select Control/Stop or click the red circle icon in the Toolbar to stop replay processing.

(a) Subsequent Retrack sessions may be activated.

4. Select Control/Terminate or click the red circle with T icon in the Toolbar to terminate processing and return system to operational state.

4.5.5 CDR Time Selected Output

CDR Time Selected Output provides the ability to copy CDR data from one CDR file set to a user-specified location, using a user specified starting and ending date/time.

a. Special Notes:

1. When initiated, three new CDR files (History file, Status file, and Data file) are created in the output directory with only the data contained within the specified date/time range.

b. Menu Bar Functions:

File Menu

Exit	Exits the CDR Time Selected Output and closes all associated windows.

View Menu

Toolbar	Toggles the Toolbar between displayed and hidden.
Status Bar	Toggles the Status bar between displayed and hidden.

Control Menu

Start Starts the CDR Time Selected Output process.

c. Toolbar Functions:

Green circle indicator Starts the CDR Time Selected Output process.

d. CDR Time Selected Output operations:

1. Click CDR Time Selected Output (Figure 4-81).

2. Observe the CDR Time Selected Output window (Figure 4-114)

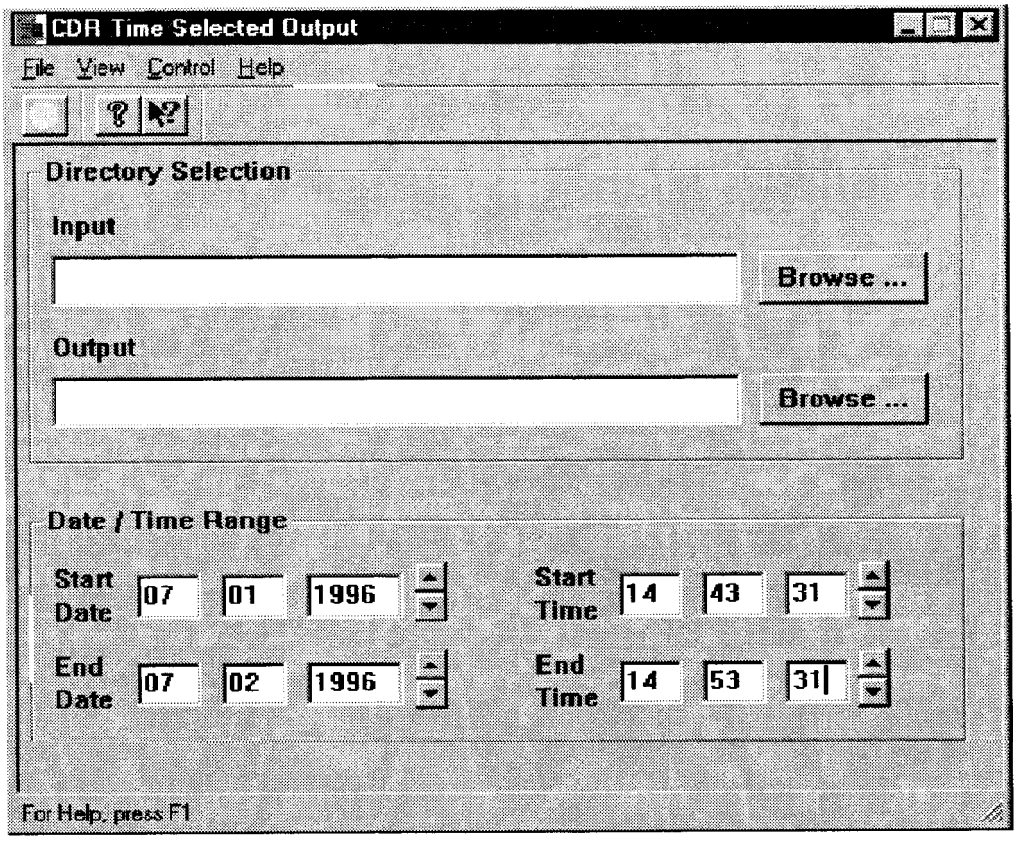


FIGURE 4-l 14. CDR TIME SELECTED OUTPUT WINDOW

3. Place the cursor in the Input box of the Directory Selection portion of the window.

4. Type the pathname of the CDR Time Selected input file or click the Browse button.

(a) Observe the Select Input Directory window (Figure 4-115).

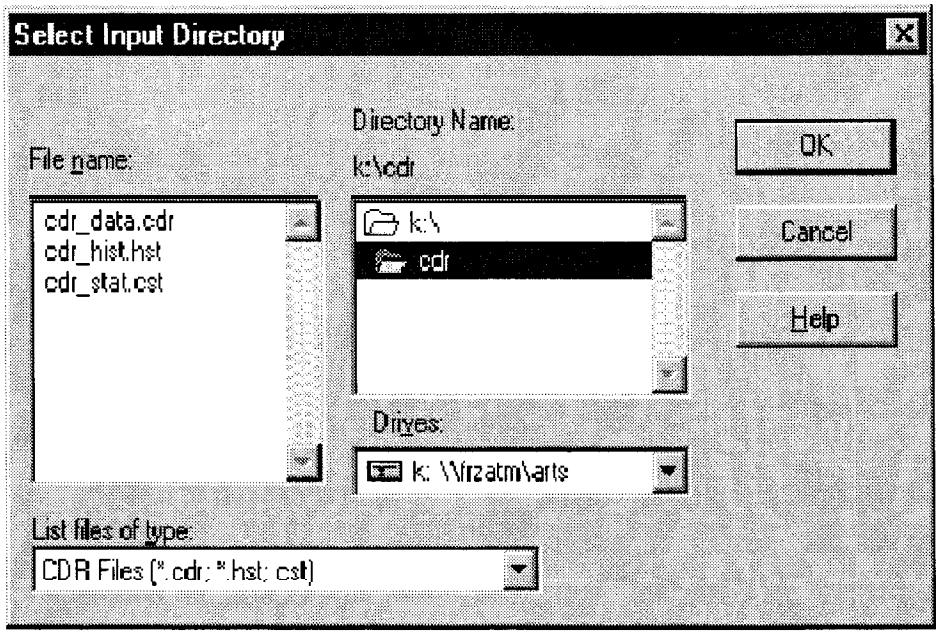


FIGURE 4-I 15. CDR TIME SELECTED OUTPUT SELECT INPUT DIRECTORY WINDOW

(b) Observe the extensions .cdr, .hst, and .cst in the List Files of Type at the bottom of window indicating the type of input files to load.

(c) Double click the drives/directories until the input file is located.

(d) Double click file name to select file and return or Cancel and exit without selecting file.

(1) Observe message box is displayed if an input or output path is not entered (Figure 4-I 16).

a On selecting OK, the user can make path selections.

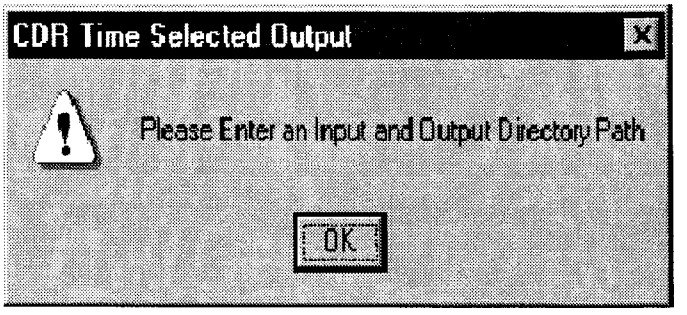


FIGURE 4-I 16. CDR TIME SELECTED OUTPUT NO INPUT/OUTPUT DIRECTORY DIALOG WINDOW

(2) Observe message box is displayed if the input and output paths are the same (Figure 4-I 17).

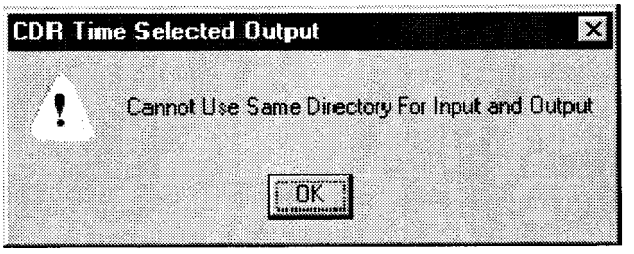


FIGURE 4-l 17. CDR TIME SELECTED OUTPUT SAME I/O DIRECTORY DIALOG WINDOW

a On selecting OK, the user can make path selections.

(e) Observe the file pathname appears in the input box.

5. Place the cursor in the output box of the Directory Selection portion of the window.

6. Type the pathname of the CDR Time Selected Output or click the Browse button.

(a) Observe the Select Output Directory window (Figure 4-118).

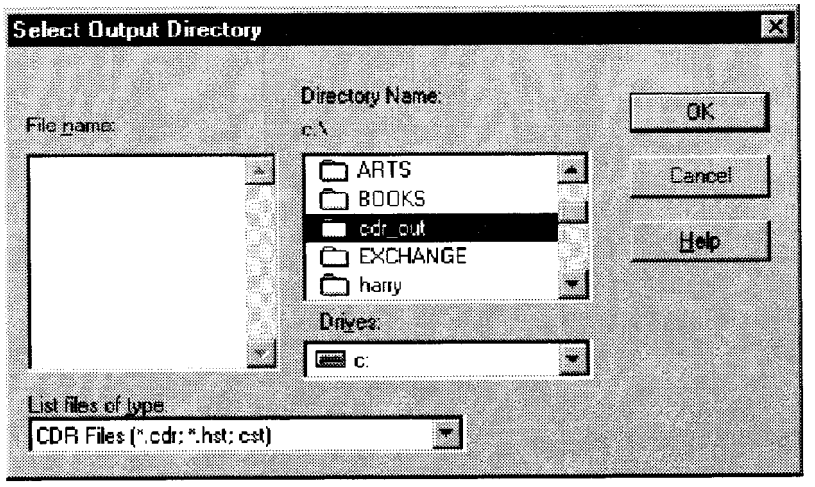


FIGURE 4-l 18. CDR TIME SELECTED OUTPUT SELECT OUTPUT DIRECTORY WINDOW

(b) Observe the extensions .cdr, .hst, and .cst in the List Files of Type at the bottom of the window indicating the type of output files store.

(c) Double click the drives/directories until the file is located.

(d) Click OK to select file and return or cancel and exit without selecting.

(1) Observe message box appears if an input or output path is not entered (Figure 4-116).

a On selecting OK, the user can make path selections.

(2) Observe message box appears if the input and output paths are the same (Figure 4-l 17).

a On selecting OK, the user can make path selections.

(e) Observe the file pathname appears in the Input box.

7. Place the cursor in the Start date box(es) of the Date/Time Range portion of the window.

(a) Click the up/down arrows to increase/decrease the start date (mmddyy) or the starting time (hhmmss) or,

(b) Place the cursor in any box, delete the numeric, and type in the new numeric or,

(c) Place the cursor in any box, hold the left mouse button down, and select/block the numeric. Type in the new numeric.

8. Place the cursor in the End date box(es) of the Start Date/Time Range portion of the window.

(a) Observe a message box appears if the start date is greater than the end date (Figure 4-l 19).

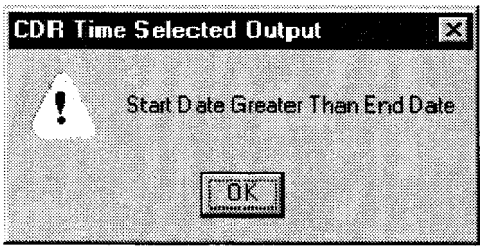


FIGURE 4-l 19. CDR TIME SELECTED OUTPUT START DATE GREATER THAN END DATE DIALOG WINDOW

(1) On selecting OK, the user can enter different Start and End dates.

(b) Observe a message box appears if the start time is greater than or equal to the ending time (Figure 4-120).

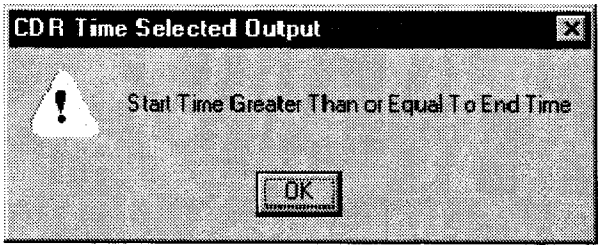


FIGURE 4-l 20. CDR TIME SELECTED OUTPUT START TIME GREATER THAN END TIME DIALOG WINDOW

(1) On selecting OK, the user can enter different Start and End dates.

(c) Observe a message box appears if the output directory selected by the user contains any or all of the CDR Data, History or Status files (Figure 4-121).

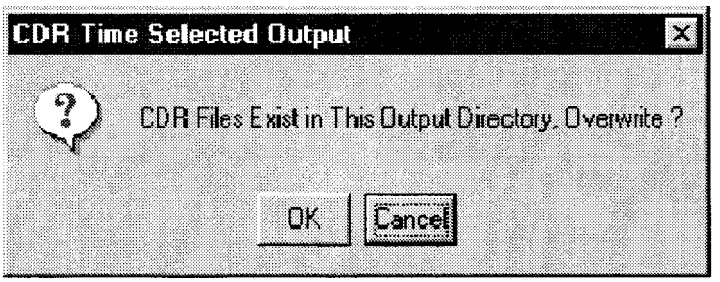


FIGURE 4-I 21. CDR TIME SELECTED OUTPUT OVERWRITE FILES DIALOG WINDOW

(1) If Cancel is selected, the user is able to select another output directory.

(2) If OK is selected, the selected output files are overwritten.

(d) Observe a message box appears if the date and time of the last record in the input CDR History file are less than the Start date and time entered by the user (Figure 4-I 22).

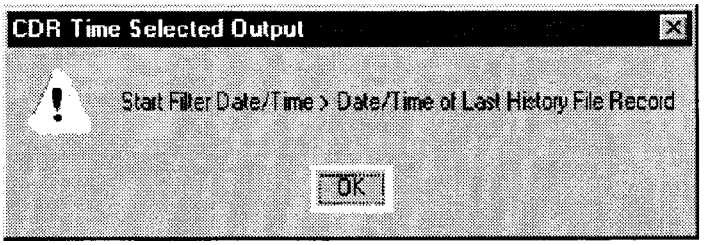


FIGURE 4-I 22. CDR TIME SELECTED OUTPUT LESS THAN START DATE/TIME DIALOG WINDOW

(1) On selecting OK, the user can enter different start and end dates.

(e) Observe a message box appears if the date and time of the first record in the CDR History file are greater than the date and time selected by the user (Figure 4-I 23).

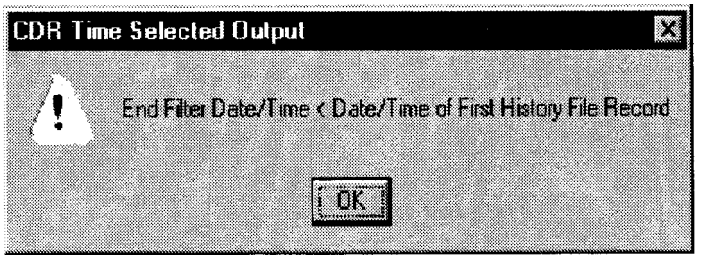


FIGURE 4-I 23. CDR TIME SELECTED OUTPUT GREATER THAN START DATE/TIME DIALOG WINDOW

(1) On selecting OK, the user can enter a different date and time.

9. Repeat steps 8(a) through (c) to change the End date.

10. Select Control/Start or click the green circle icon in the Toolbar to start the CDR Time Selected Process or select File/Exit to exit without starting the process.

4.5.6 Suicide Note Utility

Suicide Note Utility allows the user to view, print, and clear suicide notes.

a. Special Notes:

1. The status bar is used to indicate error and status messages.

b. Menu Bar Functions:

File Menu

Print	Prints either the currently displayed suicide note or all suicide notes.
Print Setup	Allows the user to change settings for next printing.
Exit	Exits the Suicide Note Utility and closes all associated windows.

View Menu

Toolbar	Toggles the Toolbar between displayed and hidden.
Status Bar	Toggles the Status bar between displayed and hidden.

Sot-I by NID

Sort by Error Time

Sort by Error Code

Sort by Target Name

Sort by Instance

Sort by Revision

Sort by Unit Name

Sort by Line Number

Sort by Program Counter

Sort by Status Register

Sort by Exception Vector

Sort by Compile Time

Control Menu

Start	Starts the suicide note function selected.
Clear Single	Clears a suicide note for current chassis.
Clear All	Clears all suicide notes after receiving user confirmation for this action.

View Single — Displays a non-zero suicide note of a single NID when start is selected.

View All — Displays all of the non-zero suicide notes in the scrollable viewing window when start is selected.

c. Toolbar Functions:

Print Button — Prints either the currently displayed suicide note or all suicide notes.

Green Circle — Starts the suicide note function selected.

NID Selection Box — Type in individual NID number to reference or click the arrows to cycle up or down to desired NID number.

All Button — Displays all of the non-zero suicide note in the scrollable viewing window when start is selected.

d. Suicide Note Utility operation:

1. Click the Suicide Note Utility icon (Figure 4-81).
2. Observe the Suicide Note Utility window (Figure 4-124).

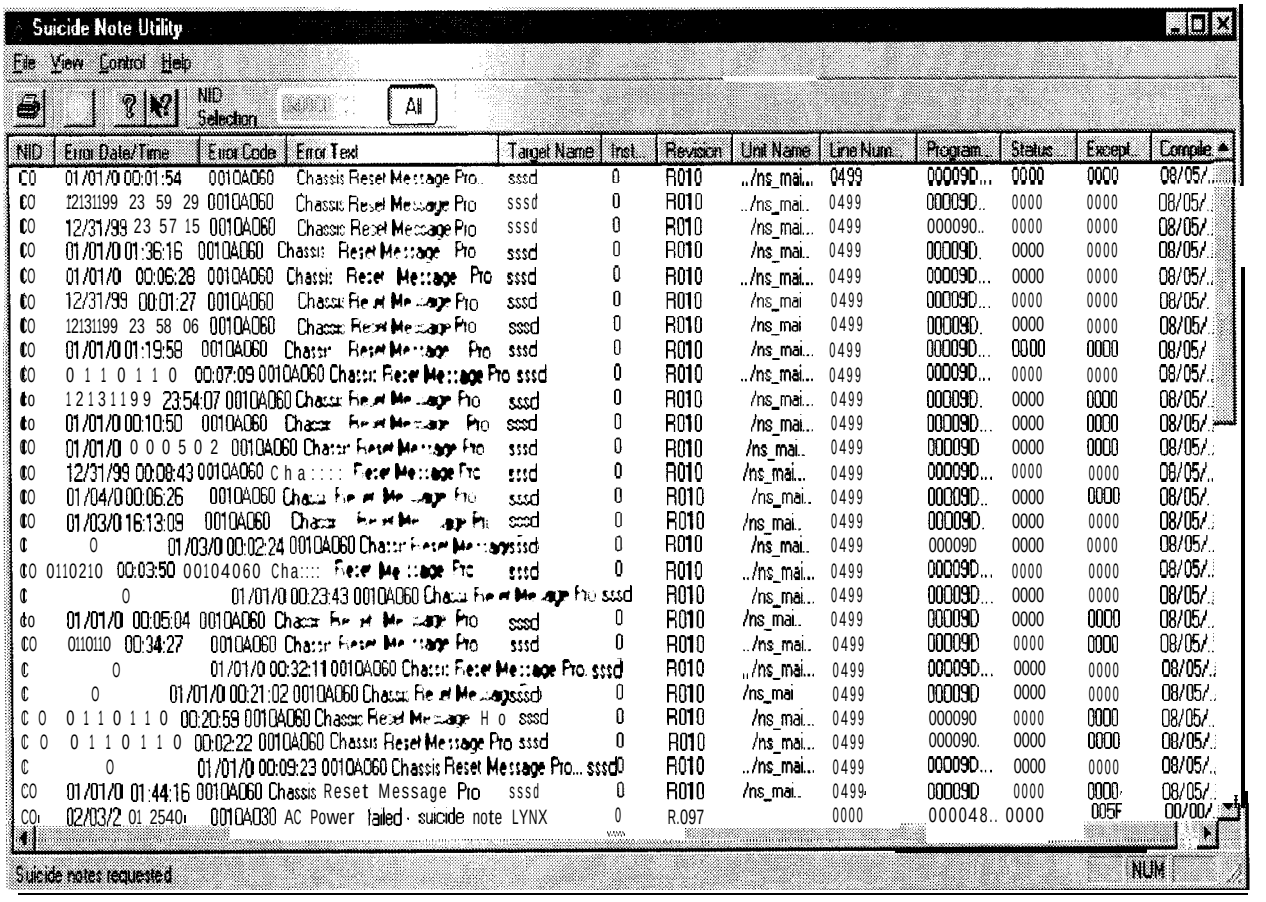


FIGURE 4-I 24. SUICIDE NOTE UTILITY WINDOW

3. To view a single Suicide Note from a particular NID:

   (a) In the Toolbar, click on the NID Selection box and type in individual NID number to reference or click the arrows to cycle up or down to desired NID number.

   (b) Select Control/Start or click the green circle icon in the Toolbar.

   (c) Observe Suicide Note data appear in the client area, if a Suicide Note is available (Figure 4-124).

   (d) To print these data, select File/Print or click on the print icon in the Toolbar.

   (e) Observe printout occurs on the selected or default printer.

   (f) To clear this NID Suicide Note (zero out contents of non-volatile RAM), select Control/Clear Single.

   (g) To exit, select File/Exit.

4. To view all Suicide Notes currently in the system:

   (a) Select Control/View All or click on the All button in the Toolbar.

   (b) Select Control/Start or click the green circle icon in the Toolbar.

   (c) Observe Suicide Note data appear in the client area (Figure 4-124).

   (d) To observe additional Suicide Notes, select Control/View Next.

   (e) To sort the data in any particular column, select Control/Sort By where xxxxxx is the column header in the client area.

   (f) To print these data, select File/Print or click on the print icon in the Toolbar.

   (g) Observe printout occurs on the selected or default printer.

   (h) To clear all Suicide Notes (zero out contents of non-volatile RAM), select Control/ Clear All.

      (1) Observe Warning box (Figure 4-124A).

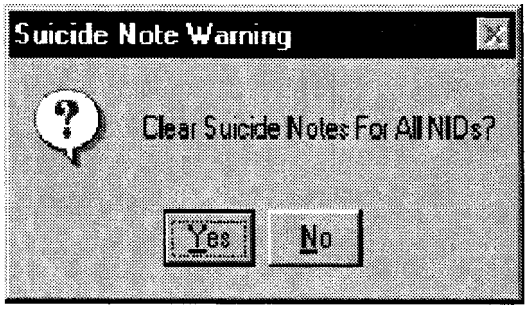


FIGURE 4-l 24A. CLEAR ALL CONFIRMATION WINDOW

(2) Select Yes to confirm or No to cancel.

(i) To exit, select File/Exit.

4.5.7 System Monitor

System Monitor allows the user to observe a read-only text window that displays system monitor messages as they are received. This dual window also allows the user to enter display keyboard commands.

a. Special Notes:

1. The upper pane of the window only displays system monitor messages as they are received. The messages are sent to the printer and stored on disk.

2. The bottom pane is editable. Supervisory and control keyboard commands may be entered.

3. System Monitor is automatically initiated at system login as part of the Startup group.

b. Menu Bar Functions:

File Menu

Exit	Exits the System Monitor and closes all associated windows.

Edit Menu

Cut	Cuts the selection and puts it on the clipboard.
Copy	Copies the selection and puts it on the clipboard.
Paste	Inserts the clipboard contents.

View Menu

Toolbar	Toggles the Toolbar between displayed and hidden.
Status Bar	Toggles the Status bar between displayed and hidden.
Set Font	Sets font for each of the two windows.
Split	Positions the split indicator on the dividing line between the two windows in the client area. Moves up/down to increase/decrease the size of the windows.

c. Toolbar Functions:

Cut Button	Cuts the selection and puts it on the clipboard.
Copy Button	Copies the selection and puts it on the clipboard.
Paste Button	Inserts the clipboard contents.

d. System Monitor operation:

1. Click the System Monitor icon (Figure 4-81).

2. Observe the System Monitor window (Figure 4-125).

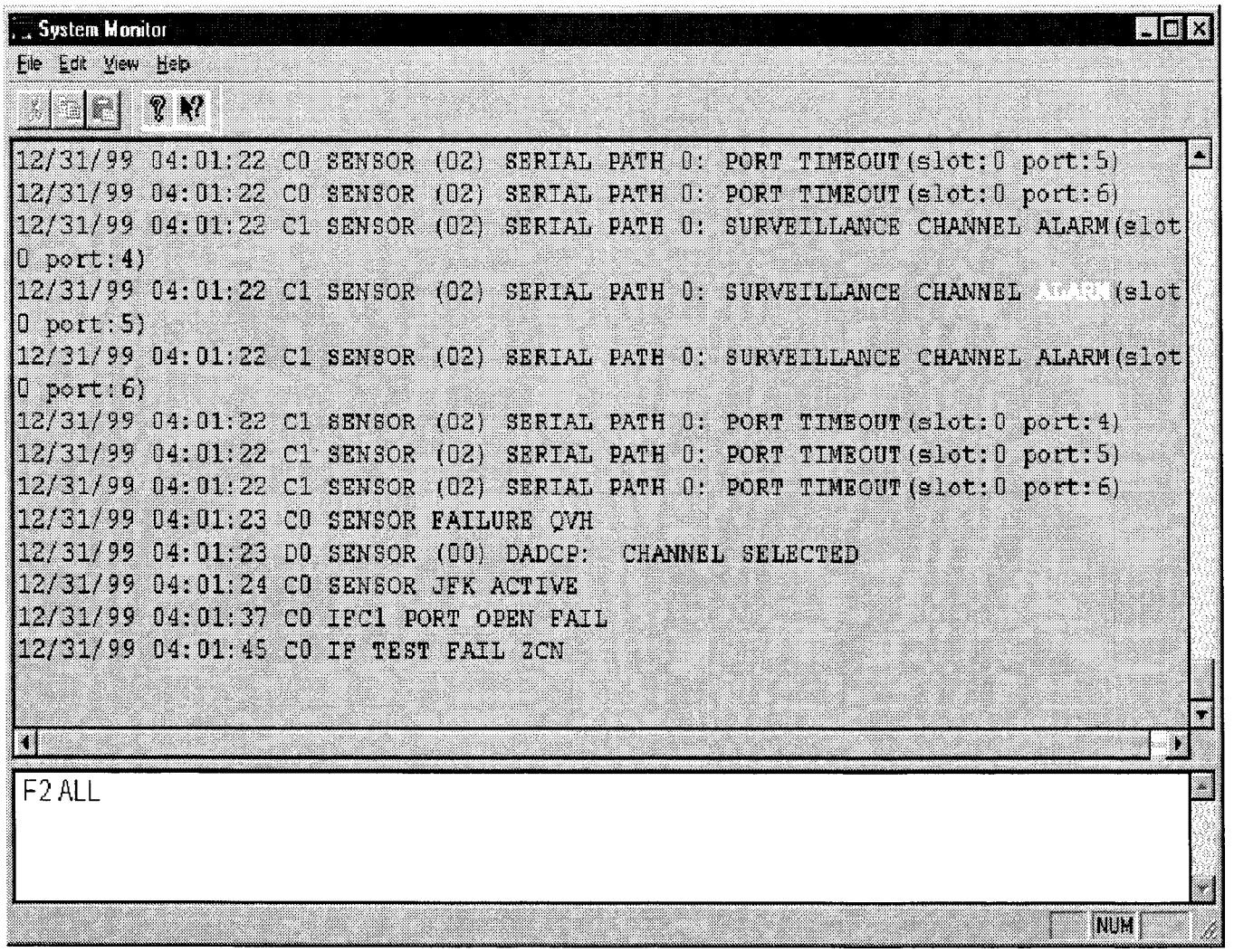


FIGURE 4-l 25. SYSTEM MONITOR WINDOW

3. To enter a System command:

   (a) In the lower window (Command Entry window), type in a valid keyboard command (control or supervisory) and <Enter>. (See Appendix A for a complete list of valid commands).

   (b) Observe the status line for confirmation of error conditions of entered command. In the System Monitor window (upper window) above command entry window, each individual line is a status line.

   (c) If a command is accepted, a copy of the command and line number appears in the upper window (System Monitor window).

4. Observe system monitor messages:

   (a) In the upper System Monitor window, command and system monitor messages are displayed. See Appendix J for System Station Messages.

Appendix G — Recording Printouts
Appendix H — Internal Failure, Alarm, and Information Printouts

(b) Use the scroll bar on the right side to review all messages in the list.

(1) Click on the up/down arrows to move the list one position up or down or,

(2) Click in the area between the slider bar and arrow and move the list several positions or,

(3) Click and hold on the slider bar, then move the mouse position forward or backward to rapidly move through the list.

(4) System messages are also printed. The order printed is the same as listed in the System Monitor window.

5. To exit, select File/Exit.

4.5.8 Plot Tool

The Plot Tool (GNUPLOT) is a nondevelopmental item which supports the plotting of CDR Editor and Site Adaptation generated plot files.

a. Plot Tool operation:

1. Click Plot Tool (Figure 4-81).

2. Observe the GNU Plot window (Figure 4-126).

3. GNUPLOT is an interactive function plot program. Select Help from the Menu Bar and follow the directions to aid in the “programming” of this tool.

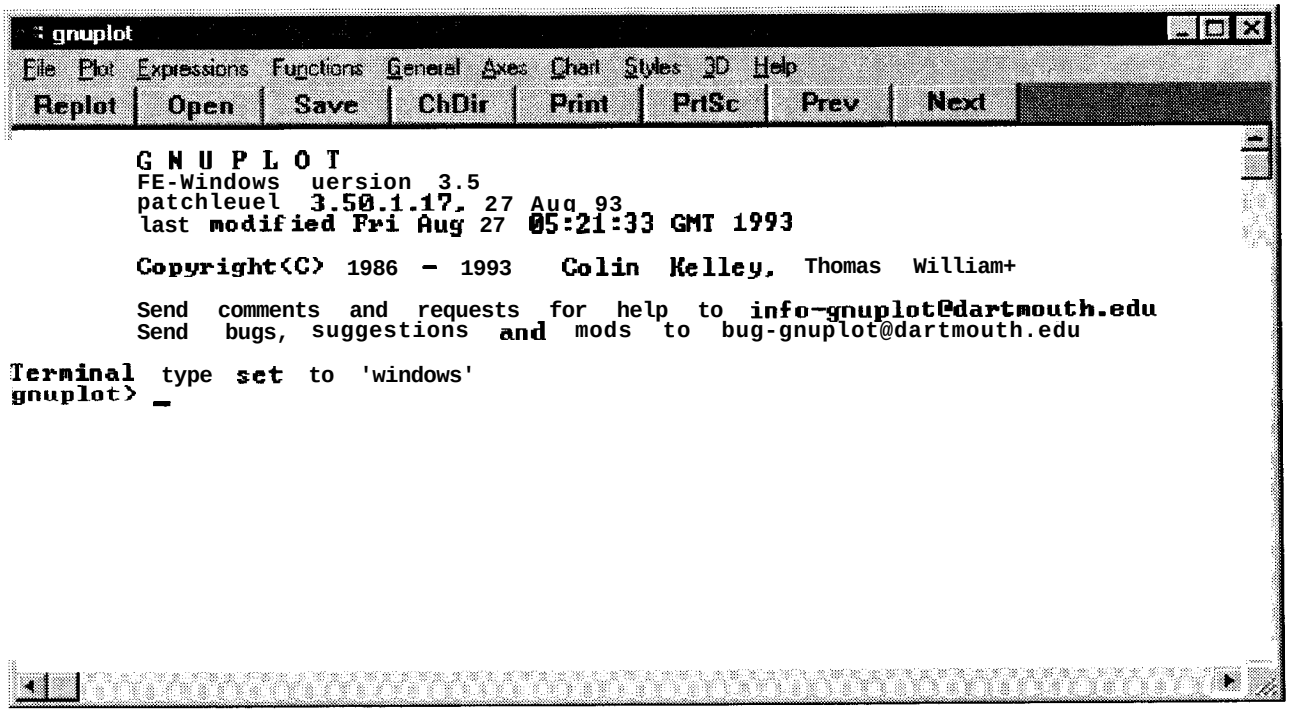


FIGURE 4-I 26. PLOT TOOL WINDOW

4.5.9 Lat/Long X/Y Calculator

The Lat/Long X/Y Calculator transforms geodetic coordinates (i.e., latitude/longitude) from/to plane coordinates. The plane coordinates can be represented in either rectangular (X/Y) or polar (range/azimuth) form.

Technical information: the calculator performs two types of transformations: forward and inverse. In the forward case, the stereographic projection method is used to project the lat/lon of a geodetic point onto a tangent plane. (It's convenient, though not precisely correct, to think of the plane as being tangent to the earth's surface.) In the inverse case, the plane coordinates are transformed to geodetic coordinates (using the inverse of a stereographic projection). The calculator also provides a rectangular from/to polar coordinate conversion function. X,Y, and Range units are Nautical Miles (NM). Azimuth units are degrees measured clockwise from north (may be magnetic or true north).

The calculator is general purpose, but when used in the context of Common ARTS, the plane will be either a sensor plane or the system plane. The sensor plane is a rectangular coordinate system whose origin (i.e., 0,0) coincides with the earth at the geodetic location of a sensor. The system plane is a rectangular coordinate system upon which target data from *all* sensors are projected, and whose origin is offset from its tangency point by some amount (so that all system coordinates are positive). The steps below describe general instructions for calculator operation, followed by specific steps for the following types of transformations:

- Latitude/longitude to sensor range, azimuth coordinates
- Sensor range, azimuth coordinates to latitude/longitude
- Latitude/longitude to sensor X,Y coordinates
- Sensor X,Y coordinates to latitude/longitude
- Latitude/longitude to system X,Y coordinates
- System X,Y coordinates to latitude/longitude.

a. General instructions for Lat/Long X/Y Calculator operation:

   1. Double click on the Lat/Long X/Y Calculator icon (Figure 4-81).
   2. Observe the Lat/Long X/Y Calculator window (Figure 4-127).
   3. Entering data in numeric/text boxes:
      (a) Place the cursor in the box, delete the numeric/text, and type in the new numeric/text, or
      (b) Place the cursor in the box, hold the left mouse button down, and select/block the numeric/text. Type in the new numeric/text.
   4. Entering latitude/longitude degrees, minutes, seconds, direction in the four boxes provided:
      (a) Enter degrees, minutes, seconds in one of the following formats:
         (1) Enter integer numeric(s) in the first box for degrees, integer numeric(s) in the second box for minutes, and integer numeric(s) with optional decimal point and 1 fractional numeric in the third box for seconds, or

(2) In addition, the calculator will also accept floating-point numerics in each field. For example, the following three sequences of degrees, minutes, seconds all represent the same value:

10, 30, 30
10, 30.5, 0
10.5083, 0, 0

(b) Enter direction, either by typing a character or clicking the toggle push button to the right of the text box. Possible values for latitude are N or S. Possible values for longitude are W or E. The default values of (N)orth latitude and (W)est longitude will work for nearly all Common ARTS sites.

5. The client area of the window (i.e. the text in the center pane) contains all data entered by the user, as well as the transformed values. The text in the client area may be used to "copy-and-paste" in other word processing applications.

6. To exit, click the Close button.

b. Specific steps for different types of transformations:

1. To transform latitude/longitude to sensor range, azimuth coordinates:

(a) In the box labeled Tangency Point,

(1) Enter the degrees, minutes, seconds, and direction of the sensor latitude in the row of boxes labeled Geodetic Latitude. (See Step 4.)

(2) Enter the degrees, minutes, seconds, and direction of the sensor longitude in the row of boxes labeled Longitude. (See Step 4.)

(b) In the box labeled Radius of Projection, check the box labeled auto. (The calculator will derive the radius automatically.)

(c) In the box labeled Stereo Origin Offset,

(1) In the box labeled XT, enter 0.

(2) In the box labeled YT, enter 0.

(d) In the box labeled Magnetic Variation,

(1) Enter the magnitude of the variation in the left-most text box.

(2) Enter direction, either by typing E or W in the right-most text box or clicking the toggle push button to the right of the text box.

(e) In the box labeled Point to be Converted,

(1) Enter the degrees, minutes, seconds, and direction of the latitude of the point in the row of boxes labeled Lat. (See Step 4.)

(2) Enter the degrees, minutes, seconds, and direction of the longitude of the point in the row of boxes labeled Lon. (See Step 4.)

(f) In the box labeled Coordinate Type, click the Polar radio button.

(g) Click the c symbol box.

(h) Observe the sensor coordinates appear in the boxes labeled Range, Azimuth.

2. To transform sensor range, azimuth coordinates to latitude/longitude:

(a) Perform steps b.1 .(a)-(d)

(b) In the box labeled Coordinate Type, click the Polar radio button.

(c) In the box labeled Point to be Converted,

(1) In the box labeled Range, enter the range of the point from the sensor.

(2) In the box labeled Azimuth, enter the azimuth of the point relative to the sensor.

(d) Click the > symbol box.

(e) Observe the latitude/longitude in the boxes labeled Lat, Lon.

3. To transform latitude/longitude to sensor X,Y coordinates:

(a) Perform steps b.1 .(a)-(d)

(b) In the box labeled Point to be Converted,

(1) Enter the degrees, minutes, seconds, and direction of the latitude of the point in the row of boxes labeled Lat. (See Step 4.)

(2) Enter the degrees, minutes, seconds, and direction of the longitude of the point in the row of boxes labeled Lon. (See Step 4.)

(c) In the box labeled Coordinate Type, click the Rect radio button.

(d) Click the < symbol box.

(e) Observe the sensor coordinates appear in the boxes labeled X,Y.

4. To transform sensor X,Y coordinates to latitude/longitude:

(a) Perform steps b.1 .(a)-(d)

(b) In the box labeled Coordinate Type, click the Rect radio button.

(c) In the box labeled Point to be Converted,

(1) In the box labeled X, enter the X coordinate of the point relative to the sensor.

(2) In the box labeled Y, enter the X coordinate of the point relative to the sensor..

(d) Click the > symbol box.

(e) Observe the latitude/longitude in the boxes labeled Lat, Lon.

5. To transform latitude/longitude to system X,Y coordinates (Tangency Point, Radius of Projection, and Stereo Origin Offset data can be obtained from the site adaptation text file; see screen labeled “System Plane Definition”):

(a) In the box labeled Tangency Point,

(1) Enter the degrees, minutes, seconds, and direction of the system plane latitude (found in the Tangency Geodetic Latitude field of the site adaptation text file) in the row of boxes labeled Geodetic Latitude. (See Step 4.)

(2) Enter the degrees, minutes, seconds, and direction of the system plane longitude (found in the Tangency Point Longitude field of the site adaptation text file) in the row of boxes labeled Longitude. (See Step 4.)

(b) In the box labeled Radius of Projection,

(1) Enter the value from the “Conf Radius” field found in the site adaptation text file.

(2) Ensure the check box labeled Auto is not checked.

(c) In the box labeled Stereo Origin Offset,

(1) In the box labeled XT, enter the value from the “Tangency X-Offset” field found in the site adaptation text file.

(2) In the box labeled YT, enter the value from the “Tangency Y-Offset” field found in the site adaptation text file.

(d) In the box labeled Magnetic Variation,

(1) Enter 0 in the left-most text box.

(e) In the box labeled Coordinate Type, click the Rect radio button.

(f) In the box labeled Point to be Converted,

(1) Enter the degrees, minutes, seconds, and direction of the latitude of the point in the row of boxes labeled Lat. (See Step 4.)

(2) Enter the degrees, minutes, seconds, and direction of the longitude of the point in the row of boxes labeled Lon. (See Step 4.)

(g) Click the < symbol box.

(h) Observe the system coordinates appear in the boxes labeled X,Y.

6. To transform system X,Y coordinates to latitude/longitude (Tangency Point, Radius of Projection, and Stereo Origin Offset data can be obtained from the site adaptation text file; see screen labeled “System Plane Definition”):

(a) Perform steps b.5.(a)-(e)

(b) In the box labeled Point to be Converted,

(1) In the box labeled X, enter the X coordinate of the point relative to the system plane.

(2) In the box labeled Y, enter the Y coordinate of the point relative to the system plane.

(c) Click the > symbol box.

(d) Observe the latitude/longitude in the boxes labeled Lat, Lon.

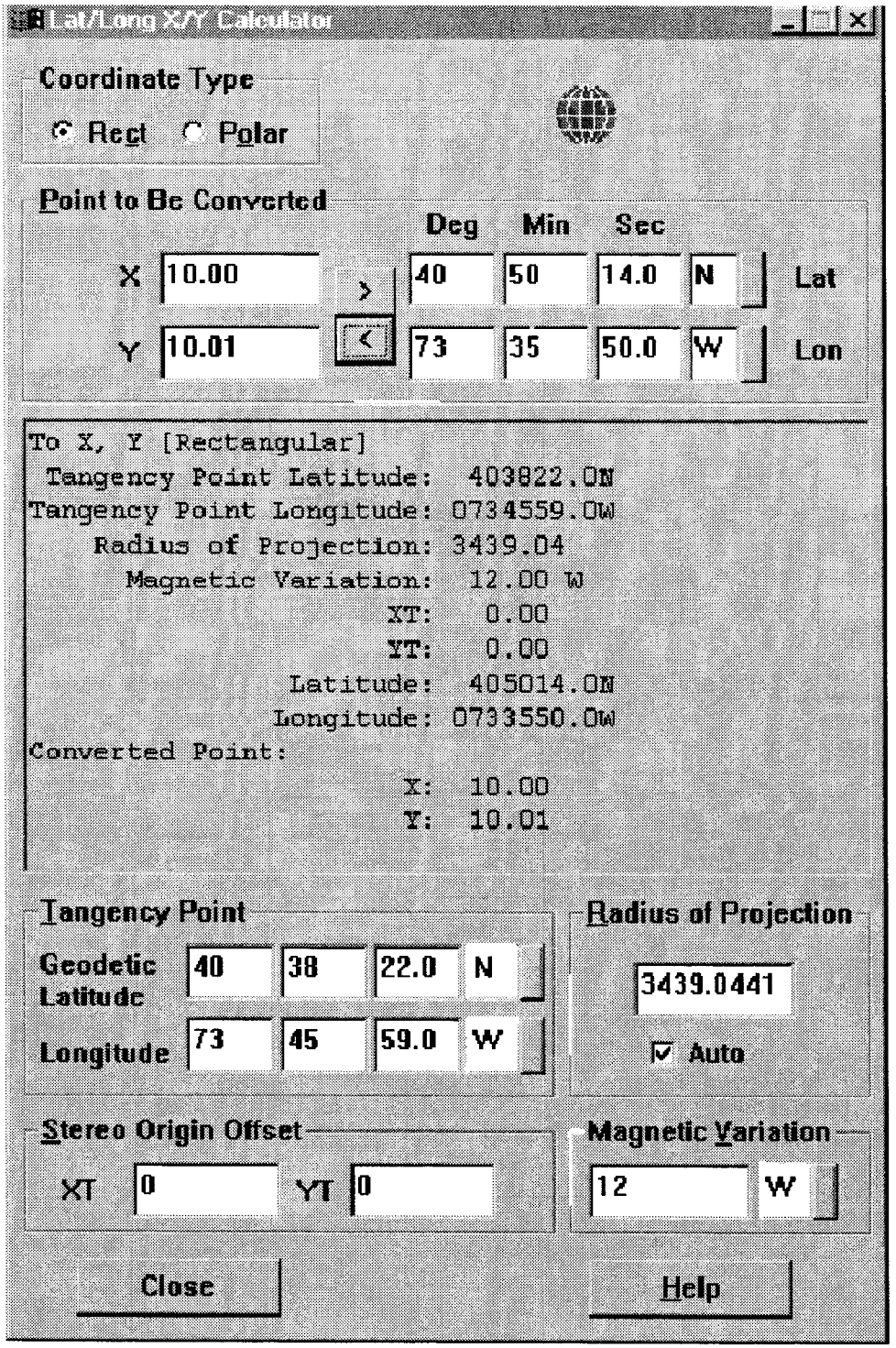


FIGURE 4-127. LAT/LONG X/Y CALCULATOR WINDOW

4.5.10 List Directory

List Directory displays the contents of a user-specified disk directory in a scrollable text window.

a. Special Notes:

1. Multiple directories may be listed concurrently.

b. Menu Bar Functions:

File Menu

Directory	User may specify the directory to be listed.
Close	Closes the currently loaded file, after giving the user the opportunity to save any changes.
Save As	Displays a file selection box which allows user to save current file under a new name.
Print	Prints the currently active file.
Print Preview	Allows the user to review the settings for a print function.
Print Setup	Allows the user to change settings for next printing.
Recent File	Displays a list of the filename(s) on display of previously closed files.
Exit	Exits the List Directory and closes all associated windows.

Edit Menu

Copy	Copies the selection and puts it on the clipboard.

View Menu

Toolbar	Toggles the Toolbar between displayed and hidden.
Status Bar	Toggles the Status bar between displayed and hidden.
Set Font	Sets a new font for viewing and printing.

Window Menu

New Window	Displays a new window overlapping previous windows.
Cascade	Shows all open windows.
Tile	Shows all open windows non-overlapping tiles.
Arrange Icons	Arranges icons at the bottom of the window.
List Directory1	Activates the window.

c. Toolbar Functions:

New	Creates a new document.
Save	Allows the user to save current file under a new name.
Copy	Copies the selection and puts it on the clipboard.
Print	Prints the active document.

d. List Directory operation:

1. Click List Directory (Figure 4-81).

2. Observe a Select a Directory dialog box.

3. Select drive and directory to list.

   (a) Observe “all files (*.*)” appears in the List Files of Type box. It represents th at all files in the selected directory are to be listed.

   (b) Observe the Directories: it identifies which directory is currently selected.

   (c) Read only does not allow any changes to the selected file.

4. Click OK to list the directory or Cancel to exit the Select Directory window.

5. Observe the List Directory window (Figure 4-128).

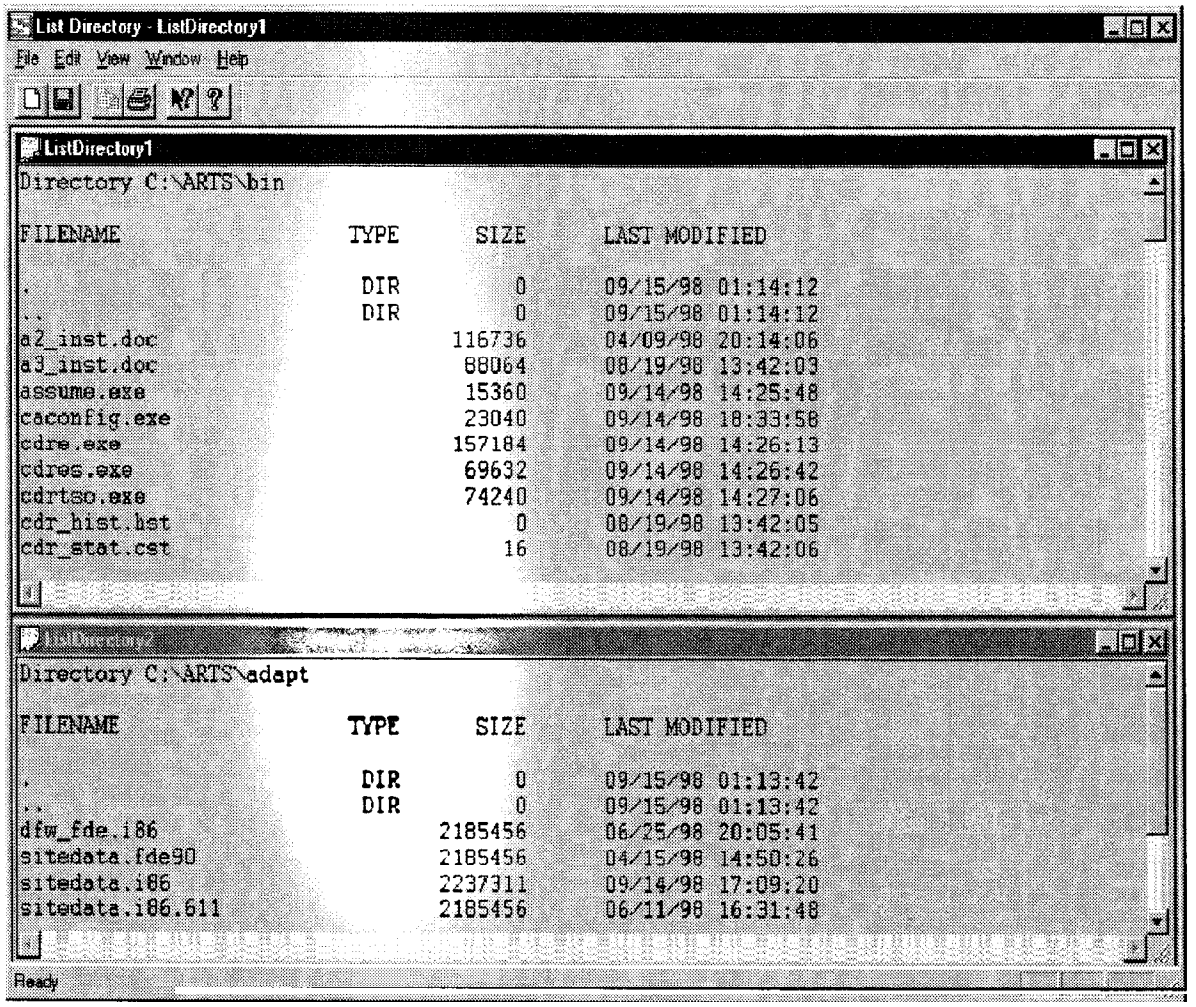


FIGURE 4-l 28. LIST DIRECTORIES WINDOW

6. Observe a List Directory (x) window containing a: FILENAME, TYPE, SIZE, and LAST MODIFIED of each file in the directory). (x = a numeric indicating a List Directory number).

7. To list another directory (previously listed directory does not have to be deleted):

   (a) Select File/Directory.

   (b) Repeat steps 2 through 5 above.

   (c) Observe a List Directory window.

8. To print the list:

   (a) Select File/Print Preview.

   (b) Observe what the printed output will look like.

   (c) Click on Close.

   (d) To change print output, select File/Print Setup.

   (e) Printer, paper, orientation, number of copies, etc., may be changed.

   (f) To change font, select View/Set Font.

   (g) Observe Font selection box.

   (h) Font, Font Style, Size, Effects, and Color of file contents may be changed.

   (i) Click on OK or Cancel to exit without change.

   (j) Select File/Print.

   (k) Observe printing of list.

9. Selected file may be edited and/or saved with a new name.

10. To exit select File/Exit.

11. Observe a prompt for saving the listed directories.

12. Click Yes to save, or No to exit or Cancel to exit operation without change.

4.5.11 Disk Utilities

Disk Utilities allows a user to copy, mount, or unmount disks or to build a file system on a disk.

a. Special Notes:

   1. Files cannot be copied to directories MMAPS or MSETS using the Copy file function.

   2. If an existing disk is replaced by a new one, it must be formatted prior to use.

   3. A disk cannot be mounted before it is initialized.

   4. A disk must be mounted before any file operations can be carried out on it.

   5. If a disk is unmounted, it is unavailable for system use.

6. The status of the disk commands are displayed in the Status bar. The Status bar is the box on the right, above the message area.

7. The results of disk commands are displayed in the message area.

b. Menu Bar Functions:

File Menu

Exit	Exits the application after giving the user the opportunity to save data.

View Menu

Toolbar	Toggles the Toolbar between displayed and hidden.
Status Bar	Toggles the Status bar between displayed and hidden.
Split	Positions the split indicator on the dividing line between the two windows in the client area. Moves the mouse left/right to increase/decrease the size of the windows.

Control Menu

Start	Starts the selected operation.
Clear Status Window	Clears all status data in the message window.

c. Toolbar Functions:

Green Circle Button	Starts the selected operation.

d. Disk Utilities operation:

1. Click Disk Utilities (Figure 4-81).

2. Observe the Disk Utilities window (Figure 4-129).

   (a) The Disk Utility box is different depending on whether you double click on hard drive, floppy drive, or optical drive.

3. Observe a tree control structure with configured chassis, a Disk Utility Commands box, and a message area.

4. Double click on the configured chassis.

5. Observe all disks associated with that chassis.

6. Click on a disk (hard, optical, or floppy, depending on the chassis).

7. Observe disk icon and title are highlighted.

8. Click on a radio button or title, from the Disk Utility box, to Build Disk, Copy, Mount, Mount Read Only, or Unmount the selected disk.

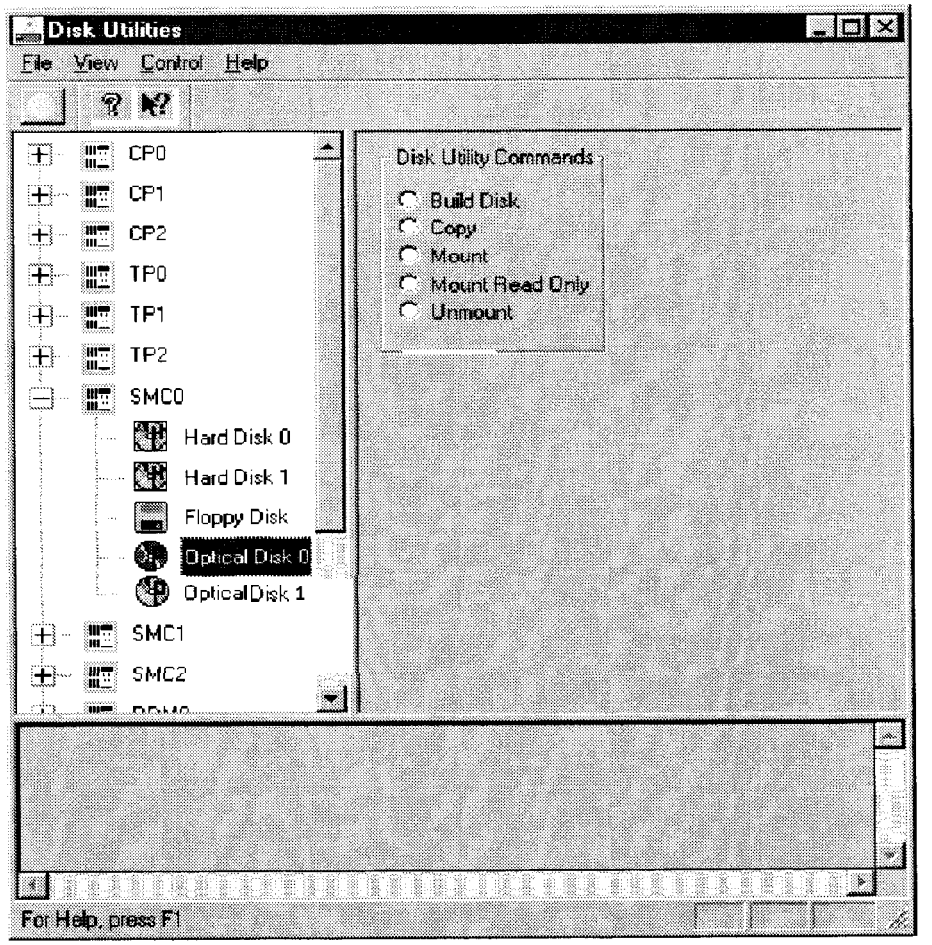


FIGURE 4-I 29. DISK UTILITIES (BUILD) WINDOW

Build Disk

Formats and sets up the necessary control structures and information needed by LynxOS for file operations on the disk. For hard disks the /p*, /q*, and /d* file systems are built and mounted, where * = 0 or 1. For optical disks the /o* file system is built. For floppy disk the /fd0 file system is built and mounted. For this operation the Function Select switch must be in the "C" position or the chassis must be in an offline state.

Copy

Copies the contents of a Disk to Optical, Disk to Disk, Optical to Disk, or Optical to Optical. (Note: you can only copy within a chassis). The partition names are preserved on a copy. For a Disk to Disk copy, from Disk 0 to Disk 1 for example, copies the contents of /p0 to /p1, /q0 to /q1 and /d0 to /d1. This is a merge operation: any files with the same name on the destination disk are overwritten. For the copy operation the Function Select switch must be in the "C" position or the chassis must be in an offline state.

Mount	Mounts a new disk on the file system. A disk must be mounted before any file operations can be carried out on it. The Function Select switch can be in any position.
Mount Read Only	Mounts a disk as a read-only device on the file system. The Function Select switch can be in any position.
Unmount	Removes the disk from the file system. It is then unavailable for any file operations. The Function Select switch can be in any position.

9. Observe the circle by the title is filled.

   (a) If Copy is selected, observe Source Disk and Destination Disk boxes (Figure 4-l 30).

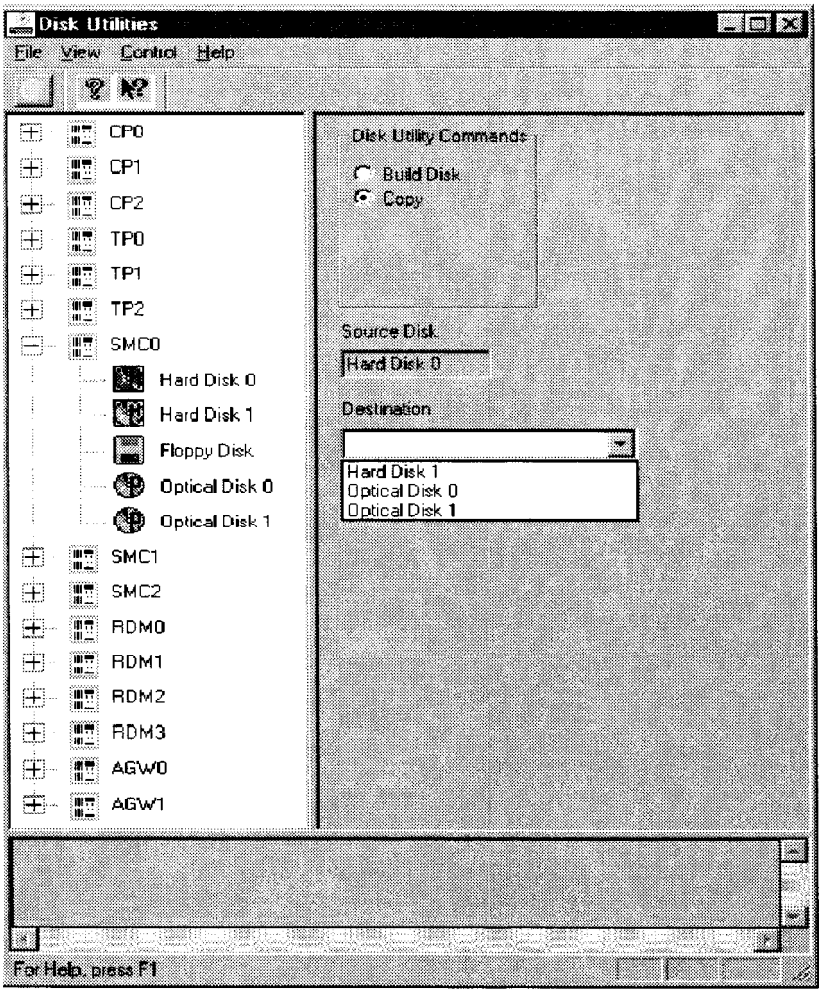


FIGURE 4-130. DISK UTILITIES (COPY) WINDOW

   (b) Source disk contains the disk identifier selected in step 6.

   (c) Click on the destination down arrow to select the destination disk by clicking on the disk identifier from list displayed.

(1) If the user executes the Copy command without specifying a destination disk, a message box is displayed (Figure 4-131) and the command is not sent.

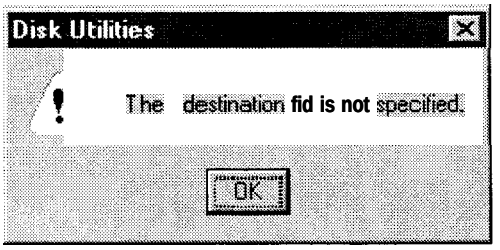


FIGURE 4-131. DISK UTILITIES NO DESTINATION SPECIFIED DIALOG WINDOW

10. Select Control/Start or the green circle start button in the Toolbar.

(1) The results of the command are displayed in the message area. If the Copy command is sent, a message box (Figure 4-132) is displayed to confirm the command.

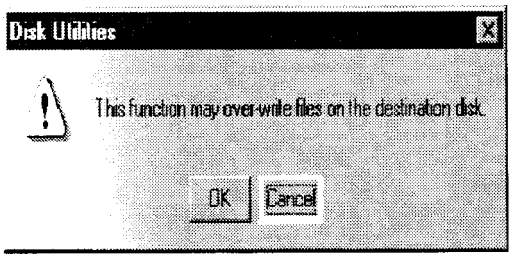


FIGURE 4-I 32. DISK UTILITIES CONFIRM COPY COMMAND DIALOG WINDOW

(2) A message box (Figure 4-133) is also displayed if the Build Disk command is sent.

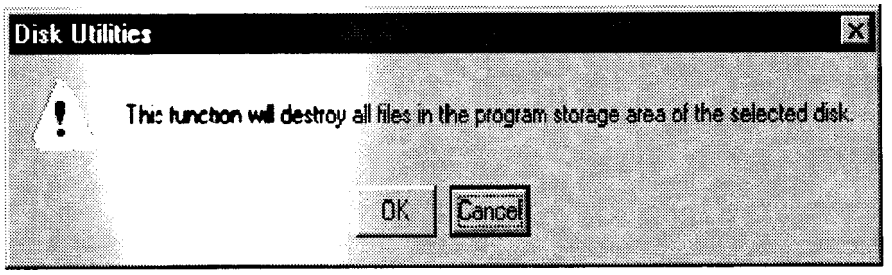


FIGURE 4-I 33. DISK UTILITIES BUILD DISK COMMAND SENT DIALOG WINDOW

(3) If the user attempts to perform a Disk Utility operation on a disk whose chassis is not in an offline state or booted in Function Select Switch Position “C”, an error message is displayed (Figure 4-134).

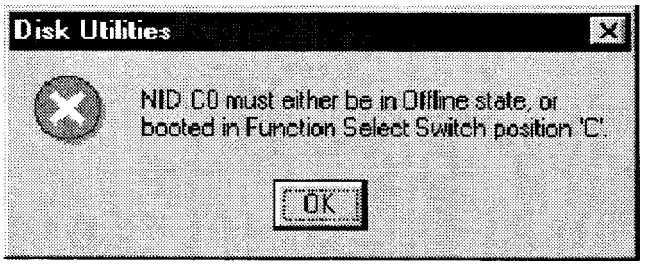


FIGURE 4-l 34. DISK UTILITIES CHASSIS WRONG STATE DIALOG WINDOW

(4) If the user attempts to pet-form a Disk Utility operation on an RDM chassis disk, the following warning message is displayed (Figure 4-135).

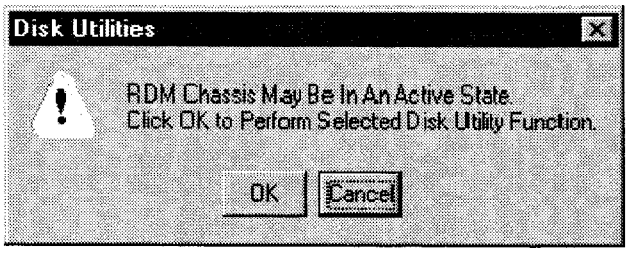


FIGURE 4-l 35. DISK UTILITIES RDM CHASSIS STATE DIALOG WINDOW

FIGURE 4-l 36. DISK UTILITIES HOST DOWN DIALOG WINDOW (DELETED)

11. Observe the message area for any system response messages.

12. To exit, select File/Exit.

4.5.12 File Dump

File Dump displays the contents of a user-specified file in both hexadecimal and ASCII formats.

a. Special Notes:

1. Multiple copies of files may be dumped on the display at a time.

2. One file may be printed at a time.

b. Menu Bar Functions:

File Menu

Open	Displays a file selection box which allows user to specify the file to be dumped.
Close	Closes the currently loaded file, after giving the user the opportunity to save any changes.

Save As	Displays a file selection box which allows user to save current file under a new name.
Print	Prints the currently active file.
Print Preview	Allows the user to review the settings for a print function.
Print Setup	Allows the user to change settings for next printing.
(Filenames of opened files)	Filename(s) of file(s) on the display or of previously closed files.
Exit	Exits the List Directory and closes all associated windows.

Edit Menu

Copy	Copies the selection and puts it on the clipboard.

View Menu

Toolbar	Toggles the Toolbar between displayed and hidden.
Status Bar	Toggles the Status bar between displayed and hidden.
Set Font	Sets a new font for viewing and printing.
Big Endian	If this menu item is preceded by a checkmark, identifies Motorola formatted file; otherwise, Little Endian identifies Intel formatted file.
2 Bytes Alignment	Available and selected with Big Endian format.
Text Only	Displays only the ASCII representation of the file.
Find	Displays a Find selection box which allows the user to include parameters for finding a file.
Next Block	Skips to the beginning of the next block of the displayed file.
Prev Block	Skips to the beginning of the previous block of the displayed file.

Window Menu

New Window	Opens another window for the active document.
Cascade	Arranges windows so they overlap.
Tile	Arranges windows as non-overlapped tiles.
Arrange Icons	Arranges windows at the bottom of the window.
(Filenames of opened files)	List of opened files. The current open file is identified by a in front of the filename.

c. Toolbar Functions:

Open Button	Displays a file selection box which allows user to specify the file to be dumped.

Copy Button	Copies the selection and puts it on the clipboard.
Print Button	Prints the currently active file.
Left Arrow	Skips to the beginning of the previous block of the displayed file.
Right Arrow	Skips to the beginning of the next block of the displayed file.

d. File Dump operation:

1. Click File Dump (Figure 4-81).
2. Observe the File Dump window (Figure 4-137).

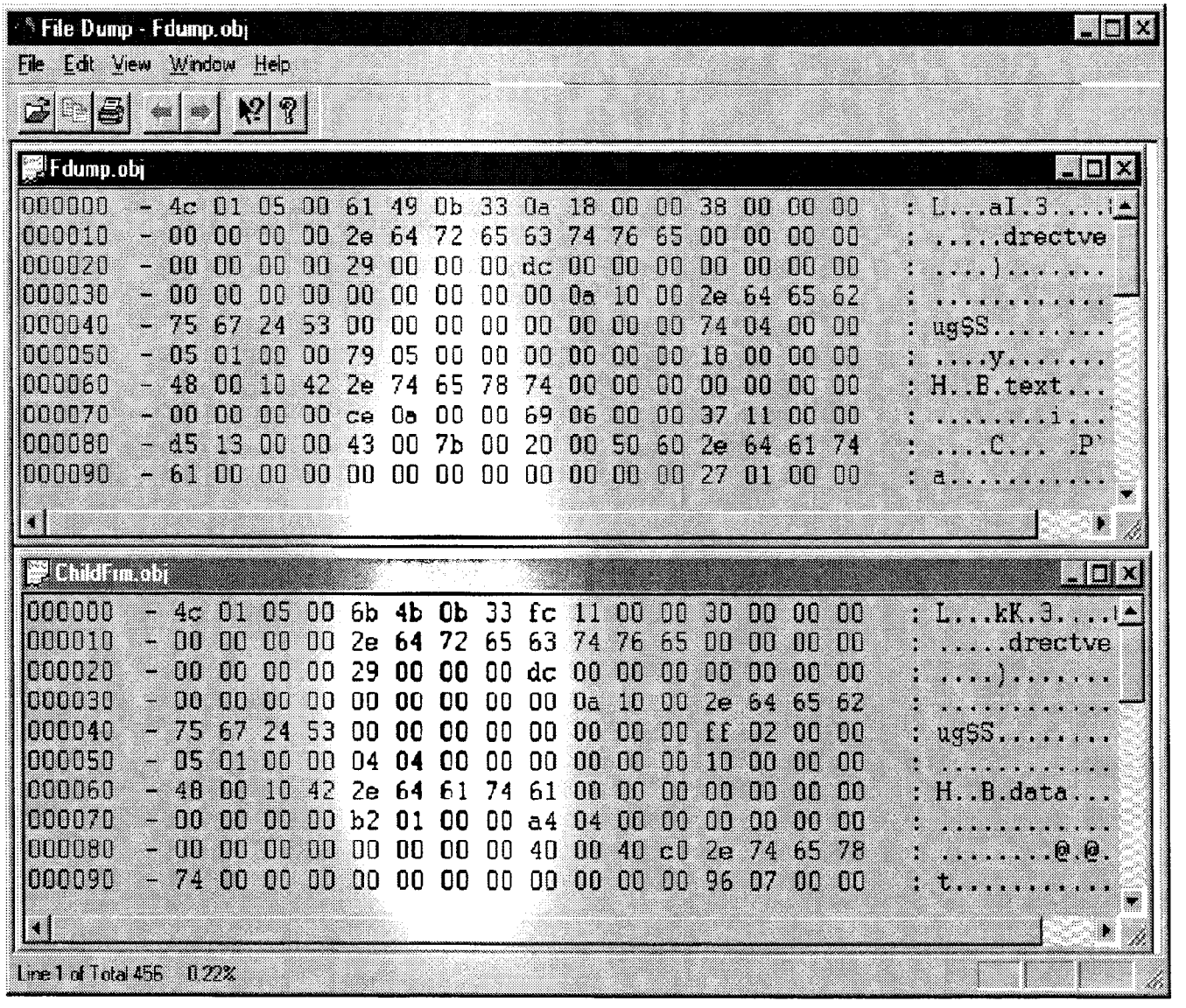


FIGURE 4-I 37. FILE DUMP WINDOW

3. Select File/Open from the menu or click on the Open button from the Toolbar.

4. Observe a File Open selection box.

5. Type in the pathname/filename of file to be dumped in the File Name box or double click on the drive, directories, subdirectories, and filename. The filename appears in the File Name box.

6. Click Open to open file or Cancel to exit File/Open command.

7. If Open selected, observe a file dump on the display. Filename also appears in the Banner Line of the File Dump window.

8. Observe file addresses, hexadecimal contents of the addresses, and to the right of the ":", an ASCII representation of the contents.

9. To dump another file previously dumped file does not have to be closed):

   (a) Select File/Open or Open button in Toolbar.

   (b) Repeat steps 4-8 above.

   (c) Select Window/Tile to arrange both dumps on display.

10. To print a file:

   (a) Select File/Print Preview.

   (b) Observe what the printed output will look like.

   (c) Click on Close.

   (d) To change print output, select File/Print Setup.

   (e) Printer, paper, orientation, number of copies, etc., may be changed.

   (f) To change font, select View/Set Font.

   (g) Observe Font selection box.

   (h) Font, Font Style, Size, Effects, and Color of file contents may be changed.

   (i) Click on OK or Cancel to exit without change.

   (j) Select File/Print.

   (k) Observe printing of list.

11. To change format of dumped file:

   (a) Observe file(s) on display.

   (b) Default format for dumped files is Little Endian (Intel).

      (1) Example of the order of a Long Word (4 Bytes) — 1,2,3,4, where 1 is the most significant byte.

(c) Select View/Big Endian (Motorola).

(1) Example of the order of the same Long Word (4 Bytes) — 4,3,2,1, where 4 is the most significant byte (if 2 Bytes Alignment not selected.).

(2) Example, if 2 Bytes Alignment selected, the order of the same Long Word (4 Bytes) — 3,4,1,2, where 3 is the most significant byte of Word 1 and 1 is the most significant byte of Word 2.

12. To exit, select File/Exit.

4.5.13 Desktop Toolbar

Desktop Toolbar displays the current system status and allows a user to easily control ARTS applications without having to search for icons or windows by placing selected functional icons in the button bar.

a. Special Notes:

1. The Desktop Toolbar is automatically initiated at login.

2. The status boxes are controlled by the system. The user may not alter the contents.

3. The Desktop Toolbar is displayed on all operational SMC-PCs.

4. The maximum number of icons on the button bar is 15.

b. Desktop Toolbar operation:

1. Click Desktop Toolbar (Figure 4-81) under ARTS tools heading.

2. Observe the Desktop Toolbar status area and button bar (Figure 4-138).

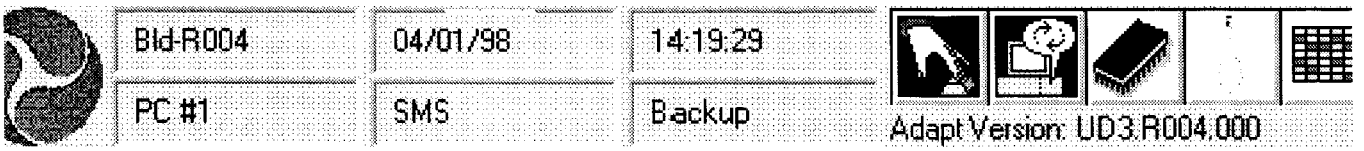


FIGURE 4-I 38. DESKTOP TOOLBAR

3. Observe six status boxes: System (Software) Version number, the PC-ID (1-6), the current host date and time, current state of the SMC-PC (SMS, Non-SMS, Standby, Off-line, or Host-Down), and the system mode (Normal, Backup, Alternate, or Broad-band).

4. Observe the area identified by "Adapt Version: UD3.R004.000." This is the button bar. There may or may not be icons present. This area will identify the adaptation version currently running on the SMC-PC, if one is adapted. If no adaptation version is adapted, the string "Common ARTS" will be displayed in the button bar area.

5. To modify, change, or add button bars:

(a) Place the cursor anywhere in the toolbar and click the right mouse button.

(b) Observe pull-down menu.

(c) Select Setup.

(d) Observe Button Setup window (Figure 4-138A).

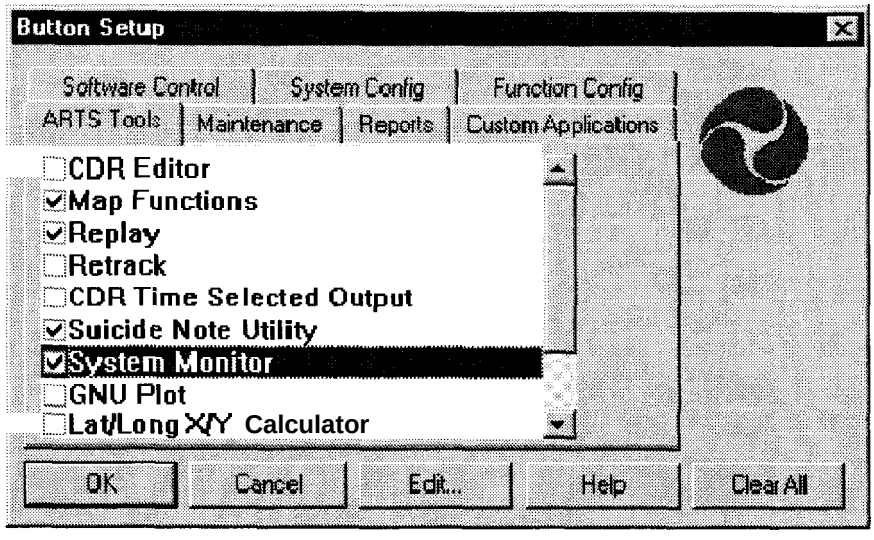


FIGURE 4-l 38A. BUTTON SETUP

(e) In the Button Setup window is a tab list of Common ARTS program groups.

(f) Click on a tab of any program group.

(g) Observe a checklist of all subfunctions within the group:

(1) If previous subfunctions were selected from this group, observe the check-box(es). A in the box indicates an icon has been placed in the Button Bar.

(2) To deselect, click on individual checkbox(es) or click Clear All. Observe the disappears and the icon is deselected.

(h) Click on the box associated with the subfunction.

(1) Observe the subfunction selected highlights. Ensure the box has a inside. Clicking on the name only will not select.

(i) If this is the only subfunction to select:

(1) Click OK to select the function and exit or Cancel to exit without change. If more than 15 button icons are selected, an error message dialog box will appear informing the user that maximum number of buttons have been reached, only first 15 in effect. (Figure 4-138B).

(2) Observe the icon for the selected subfunction appears on the Toolbar.

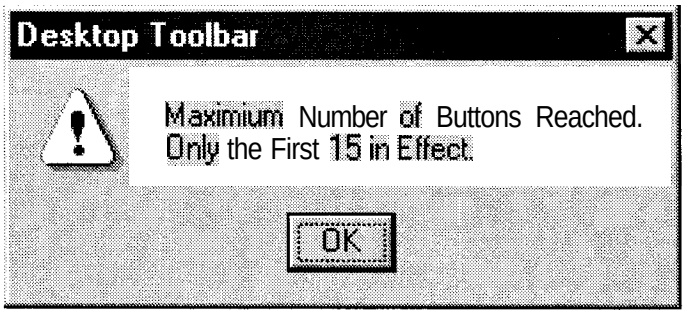


FIGURE 4-I 388. MAXIMUM NUMBER OF BUTTONS WINDOW

(j) If other subfunctions are desired:

(1) Repeat steps (f), (g), (h), and (i).

(2) Click OK to select the functions and exit or Cancel to exit without change.

(3) Observe the icon for the selected subfunction(s) appears on the Toolbar.

(k) To select a subfunction using the filename in another directory:

(1) Observe Button Setup window. In the Button Setup window is a tab list of Common ARTS program groups.

(2) Click on a tab of any program group.

(3) Observe a checklist of all subfunctions within the group.

(4) Select a desired subfunction.

(5) Click the Edit button.

(6) Observe an Application Setup window.

(7) Click the Browse button.

(8) Observe an Open selection box.

a Double click on the pathname until the desired directory/subdirectory is highlighted.

b Click on the filename.

c Click OK to select the filename to open and exit or Cancel to exit without change.

d Observe the filename appears on the Command Line of the Application Setup window.

(9) Click OK to select this filename as the file to reference when requesting this functions icon.

4.5.14 SCAP (Sensor Coverage Analysis Program)

SCAP provides the user with an analysis of previously recorded CDR data. During an analysis session, the user can define or modify input, output, and filter settings. These analysis session settings can be saved in a session setting file that, on subsequent SCAP sessions, can be loaded or opened to expedite SCAP setup and analysis.

a. Special Notes:

1. SCAP produces a text file formatted for reading by the SA editor.
2. An analysis session (SCAP analysis) can be saved in a file that subsequently can be re-loaded or recalled at another time.
3. Some SCAP filters are sensor oriented (azimuth, range), one filter per sensor. If a CDR file is not selected before those filters are set, those filters will be reinitialized when the CDR file is selected.
4. If the sensor filter is in use, the sensor selection in sensor oriented filters will be restricted to only those sensors selected.
5. If a filter entry is not acceptable, a pop up window appears with error dialog. Subsequent filter selection is inhibited until corrected.

b. Menu Bar Functions

File Menu	
New	Creates a new session.
Open	Opens an existing session file.
Save	Saves current session file.
Save As	Displays a file selection box which allows user to save current session file under a new name.
Exit	Exits the current session.
View Menu	
Toolbar	Toggles the Toolbar between displayed and hidden.
Status Bar	Toggles the Status Bar between displayed and hidden.
Control Menu	
Start	Initiates a SCAP run.
stop	Terminates a SCAP run.
Disk Availability	Displays a dialog that allows the user to make a CDR disk available or unavailable for editing.

c. Toolbar Menu

New Button	Creates a new session.
Open Button	Opens an existing session file.
Save Button	Saves current session file.
Start Button	Initiates a SCAP run.
Stop Button	Terminates a SCAP run.

d. SCAP Setup operation:

1. Click SCAP Figure 4-81).

2. Observe the SCAP window (Figure 4-138C). This will open on the input tab.

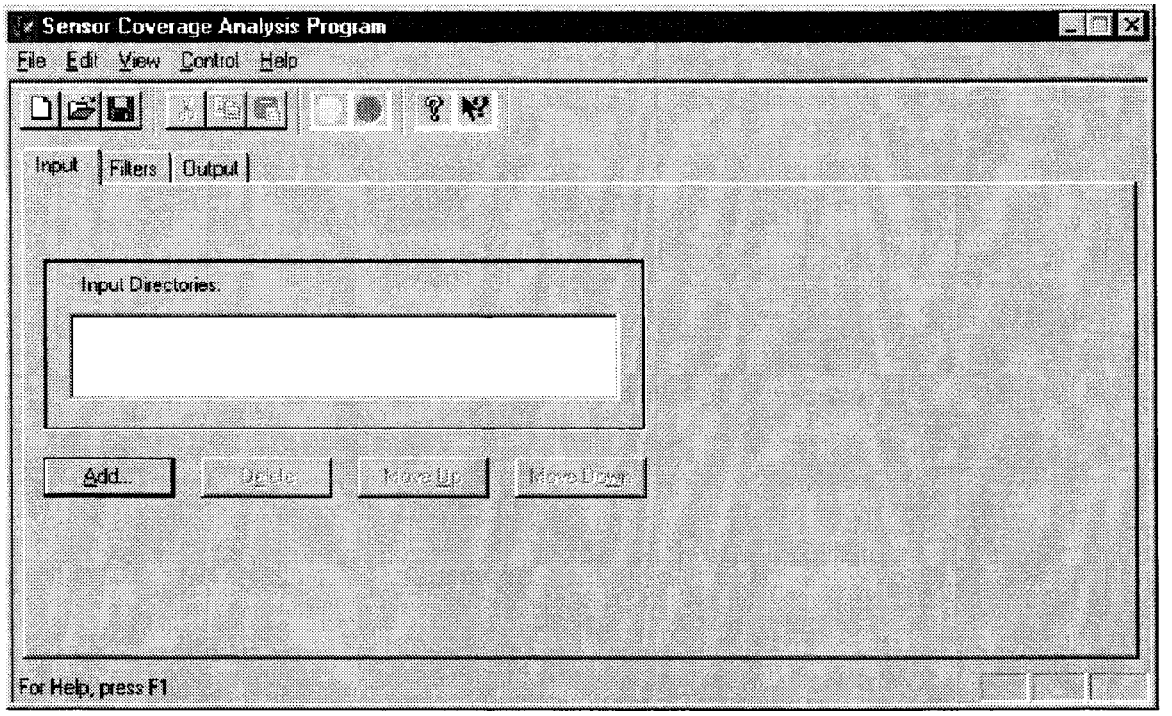


FIGURE 4-138C. SCAP INPUT DIRECTORY WINDOW

3. Input tab :

(a) Observe a box for Input Directories. Selecting a file(s) from this box is used in the editing process to reference where the CDR extraction data are located.

(b) To use one or two of the files listed in this box, click on the appropriate path name.

(1) The order of selection determines the processing order (Input Path 1 then Input Path 2).

(2) The processing order can be changed by highlighting a path name and clicking on the Move Up or Move Down button, depending on its current input path position.

(c) To enter new path names, click on the Add button.

(1) Observe an Open window (Figure 4-138D).

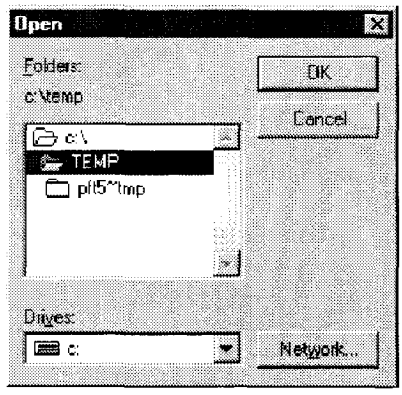


FIGURE 4-138D. SCAP INPUT OPEN DIRECTORY WINDOW

(2) Select the path by clicking on the appropriate drive, directory, sub directories, and file.

(3) Click OK to select file highlighted and return or Cancel to return without file selected.

(4) Observe the path name appears in the Input Directories box and as a CDR Input path.

(5) Select the Control Tab/Selected Parameters/Input Path 1/2 to verify file selection.

(d) To delete path names, click on the path name in the Input Directories box to be deleted, it highlights, then click the Delete button.

4. Filters tab (Figure 4-138E):

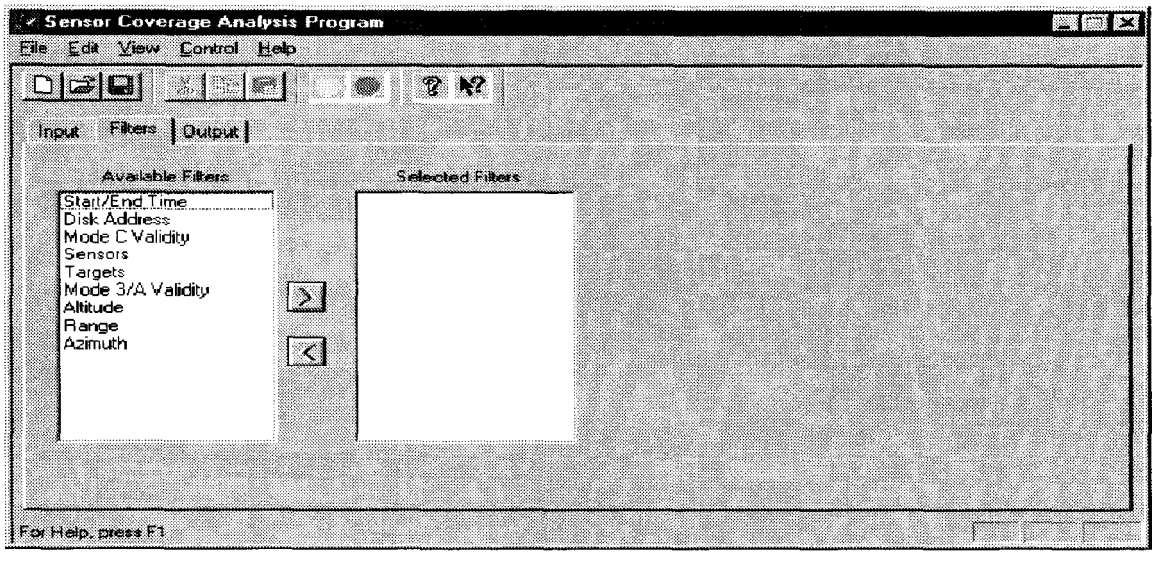


FIGURE 4-138E. FILTERS WINDOW

(a) Observe a list of available filters and another list of selected filters. The selected filter list is used in the editing process.

(b) To move individual filters between lists:

(1) Click on a filter in either list (it becomes highlighted) and then click on the < or the > button to move that filter to the alternate list.

(2) Double clicking a filter in either list moves that filter to the alternate list.

(c) Moving a filter from the available list to the selected list displays a page for additional data to be entered pertinent to that filter.

(d) Start/End Time filter (Figure 4-138F). If selected, only data that is found between the start date/time and the end date/time pass this filter for analysis purposes.

(1) Place the cursor in any of the boxes and click. Then use the up/down arrows to increase/decrease the start date/end date (mmddyy) or the starting time/ending time (hhmmss) or,

(2) Place the cursor in any box, delete the numeric, and type in the new numeric or,

(3) Place the cursor in any box, hold the left mouse button down, and select/block the numeric. Type in the new numeric.

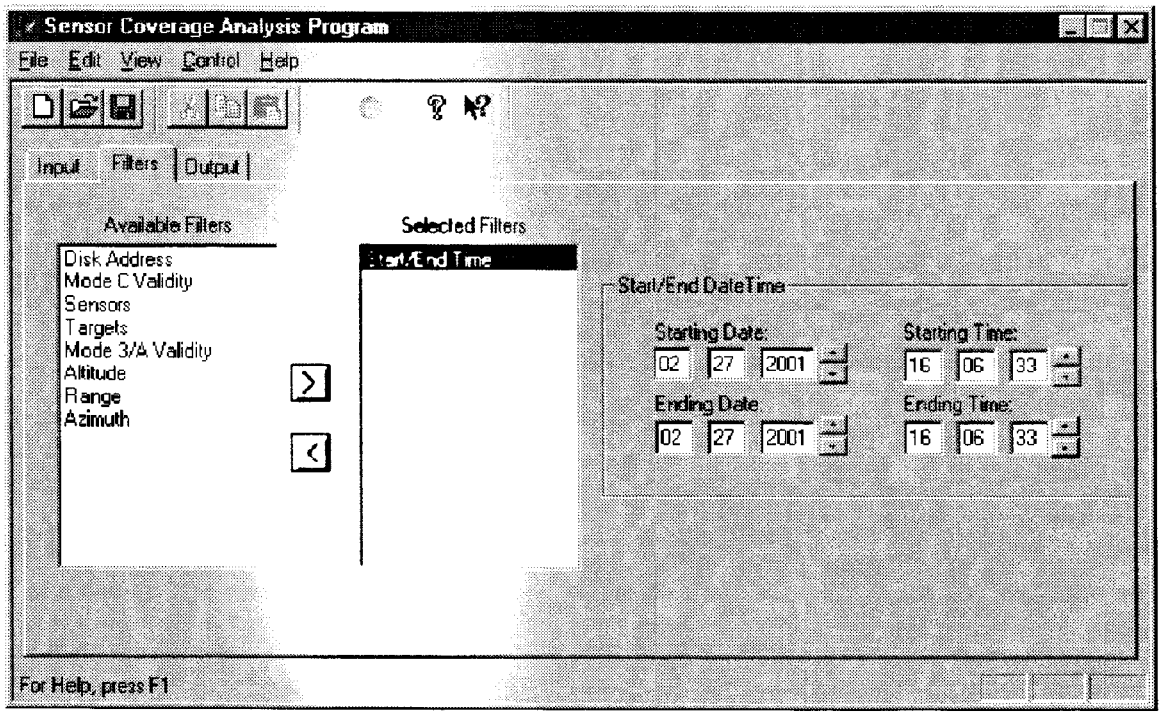


FIGURE 4-I 38F. SCAP START/END TIME FILTERS WINDOW

(4) The starting date and ending date may be the same or the ending date may be greater.

a The ending time must be greater than the starting time.

(e) Disk Address filter (Figure 4-138G). If selected, only data between the start disk address and the end disk address pass this filter for analysis purposes.

(1) Values entered are increments of 1000. (Entering a 2, represents address 2000.)

a Since the precision of the disk address filter is 1000 care should be taken to round up the end address and not truncate it (e.g., if 1234567 is the end address of the edit desired data use 1235 as the filter end address, not 1234).

(2) Place the cursor in either the Start Disk Address box or the End Disk Address box; if blank, type in the numeric address. If addresses are present, delete the addresses and enter new addresses.

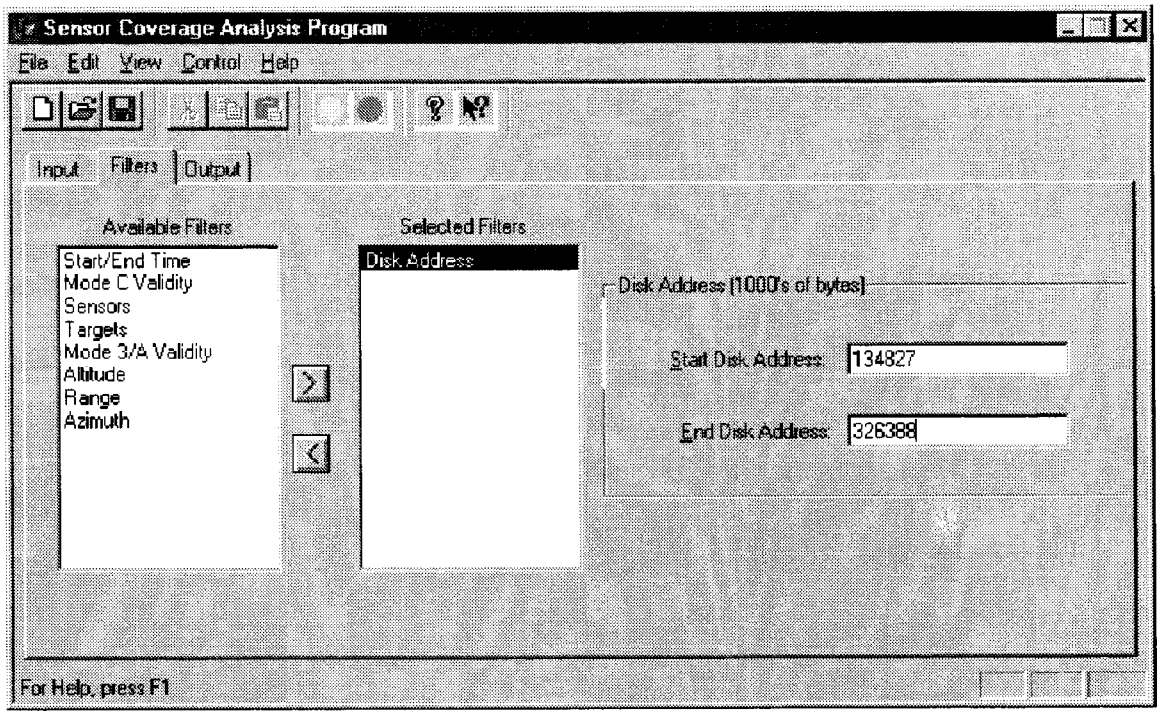


FIGURE 4-l 38G. SCAP DISK ADDRESS FILTERS WINDOW

(f) Sensors filter (Figure 4-138H). If selected, only data pertaining to the entered sensor(s) pass this filter for analysis purposes.

(1) To view all sensors, use the scroll bar on right side of box.

a Click on the up/down arrows to move the list one position up or down or,

b Click in the area between the slider bar and arrow and move the list several positions or,

c Click and hold on the slider bar, then move the mouse position forward or backward to rapidly move through the list.

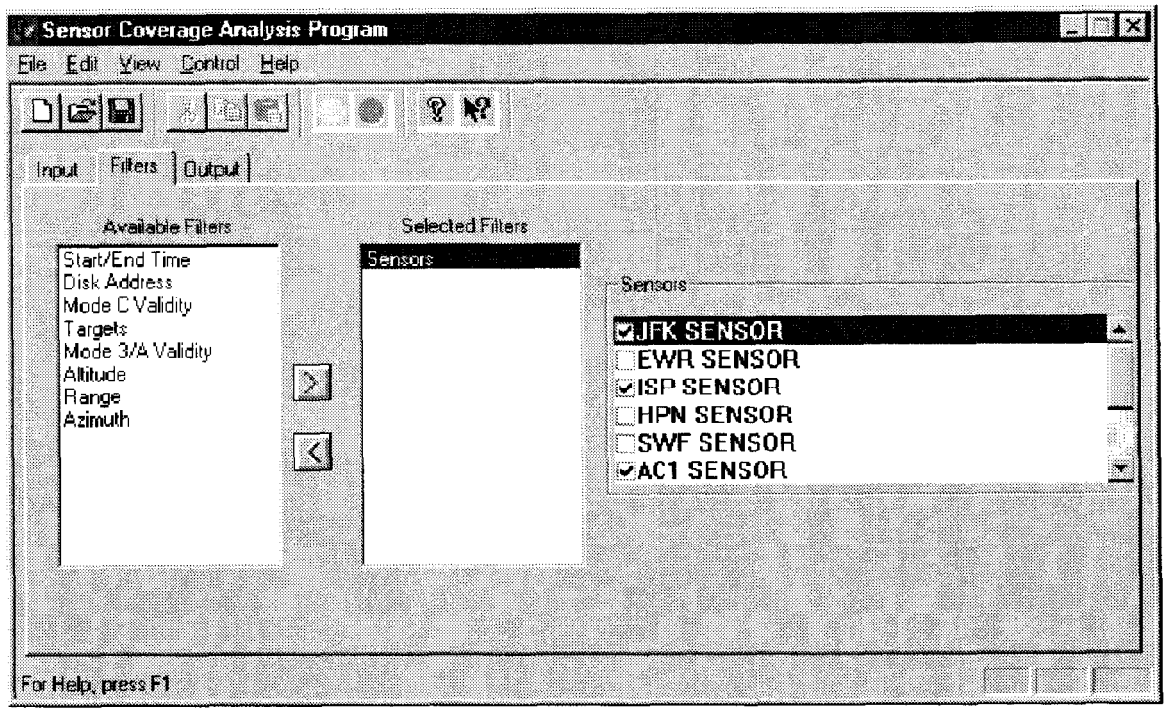


FIGURE 4-138H. SCAP SENSOR FILTERS WINDOW

(2) Place the cursor in the checkbox of the Sensors box corresponding to the desired sensor and click. The checkbox now contains a "✓" and the sensor is highlighted. (a "✓"enables and a blank box disables.)

a Ensure you click on the checkbox and not the Sensor name. Highlighting the name does not select.

(g) Range filter (Figure 4-1381. If selected, for each sensor, data which falls within the range filter limits will pass this filter for analysis.

4.7.9 RTQC Report

RTQC Report allows the user to request the printing of a Real-Time Quality Control (RTQC) Report.

a. Special Notes: The following information for each sensor is included in this report:

1. Time
2. Network Identifier (NID) number
3. RTQC sensor number
4. The signed two-digit and one decimal place azimuth correction factor in Azimuth Change Pulses (ACPs)
5. The signed three decimal place range correction factor in nautical miles
6. An SMC-PC in the Non-SMS or Host Down state cannot request this report.

b. RTQC Report operation:

1. Click RTQC Report (Figure 4-152).
2. Observe the RTQC Report Dialog window (Figure 4-162).

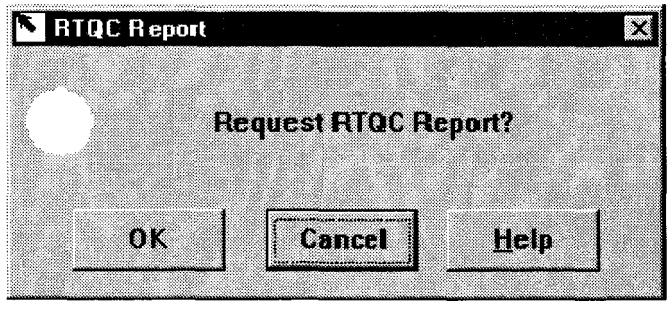


FIGURE 4-162. REQUEST RTQC REPORT DIALOG WINDOW

3. Click on OK to print the RTQC Report on the HSP or local printer and exit or Cancel to exit without printing.
4. Observe at the SMC-PC monitor and printer:

```
mm/dd/yy hh:mm:yy NID# RTQC SENSOR 0 TERMS 0.0 ACP 0.000 NM
mm/dd/yy hh:mm:yy NID# RTQC SENSOR 1 TERMS 0.0 ACP 0.000 NM
mm/dd/yy hh:mm:yy NID# RTQC SENSOR 2 TERMS 0.0 ACP 0.000 NM
mm/dd/yy hh:mm:yy NID# RTQC SENSOR 3 TERMS 0.0 ACP 0.000 NM
mm/dd/yy hh:mm:yy NID# RTQC SENSOR 4 TERMS 0.0 ACP 0.000 NM
mm/dd/yy hh:mm:yy NID# RTQC SENSOR 5 TERMS 0.0 ACP 0.000 NM
mm/dd/yy hh:mm:yy NID# RTQC SENSOR 6 TERMS 0.0 ACP 0.000 NM
mm/dd/yy hh:mm:yy NID# RTQC SENSOR 7 TERMS 0.0 ACP 0.000 NM
mm/dd/yy hh:mm:yy NID# RTQC SENSOR 8 TERMS 0.0 ACP 0.000 NM
mm/dd/yy hh:mm:yy NID# RTQC SENSOR 9 TERMS 0.0 ACP 0.000 NM
```

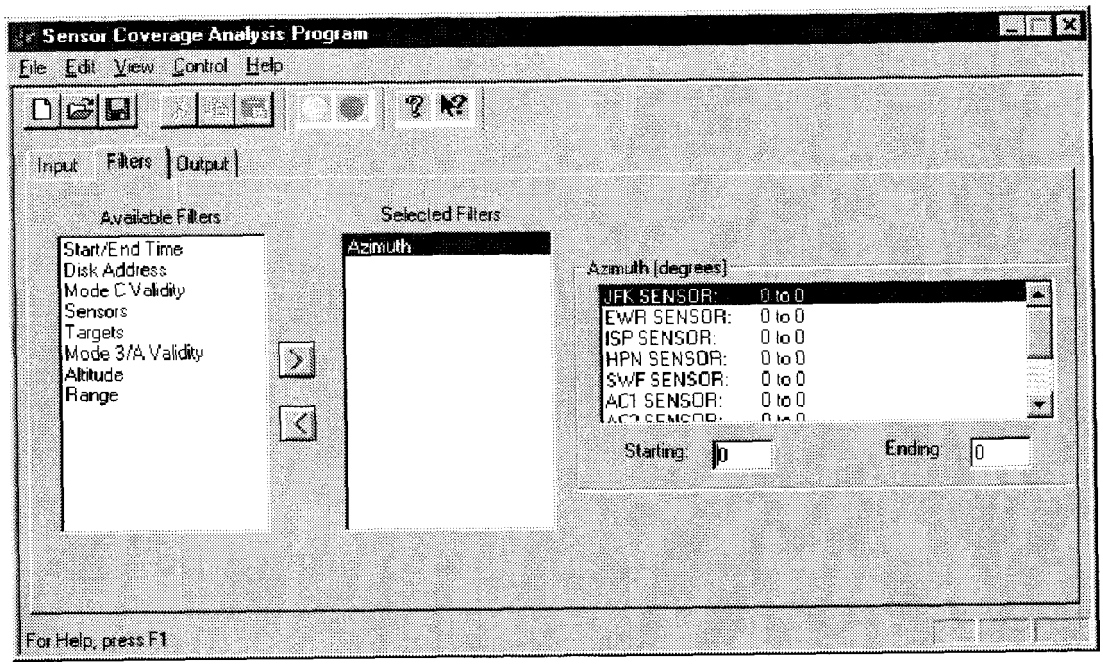


FIGURE 4-138J. SCAP AZIMUTH FILTERS WINDOW

(i) Altitude filter (Figure 4-138K. If selected, only data that falls within the altitude filter limits will pass this filter for analysis.

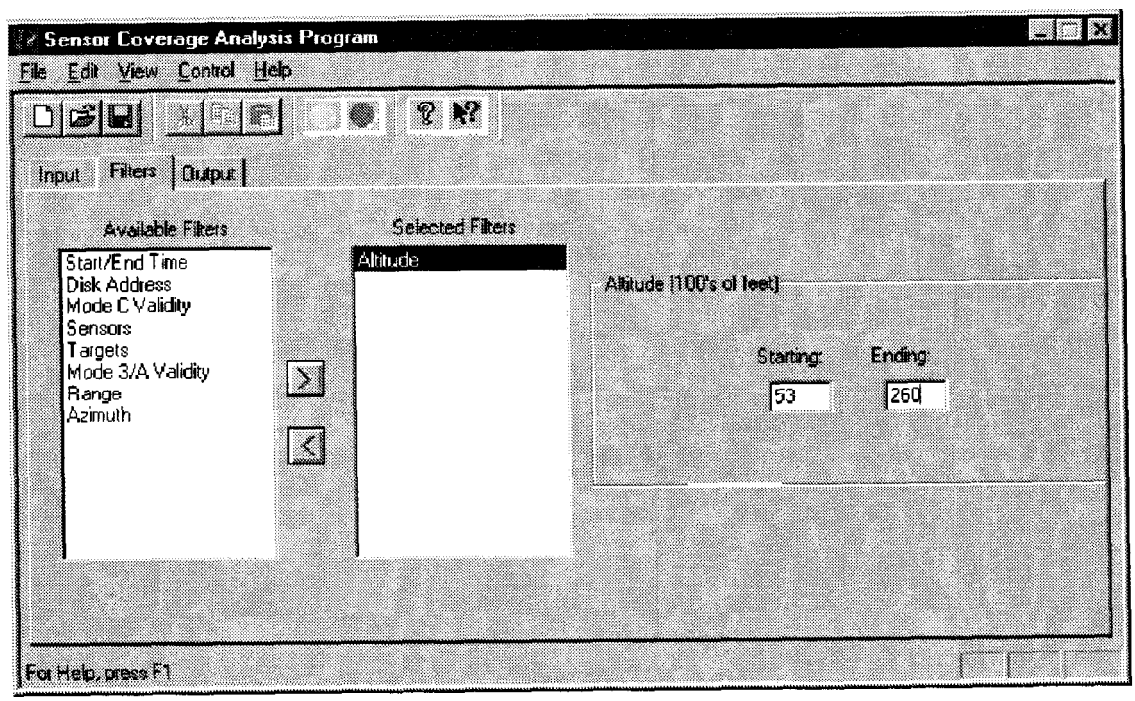


FIGURE 4-l 38K. SCAP ALTITUDE FILTERS WINDOW

(1) Values entered are in hundreds of feet. (Entering 155, represents 15,500 feet.).

(2) Place the cursor in either box; if blank, type in a numeric. If a numeric is present, delete the numeric, and type in the new numeric or,

(3) Place the cursor in any box, hold the left mouse button down, and select/block the numeric. Type in the new numeric.

(4) If the user enters a starting altitude more than ending altitude, an error dialog box will appear (Figure 4-138L).

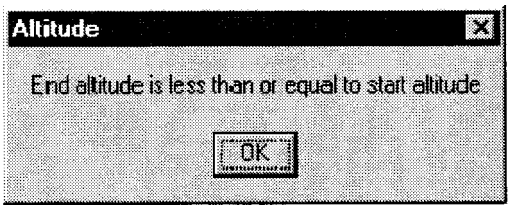


FIGURE 4-I 38L. SCAP ALTITUDE ERROR WINDOW

(5) If the user enters a negative starting point, this message error dialog box will appear (Figure 4-138M).

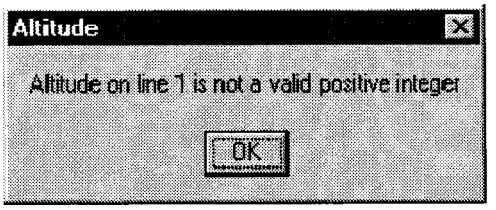


FIGURE 4-138M. INVALID ALTITUDE INTEGER WINDOW

(j) Mode C Validity filter (Figure 4-138N). If selected, only data with Mode C Validity values that fall in the selected range pass this filter for analysis purposes.

(1) Place the cursor in either the Starting box or the Ending box ; if blank, type in the numeric (0 - 3). If values are present, delete the values and enter new values.

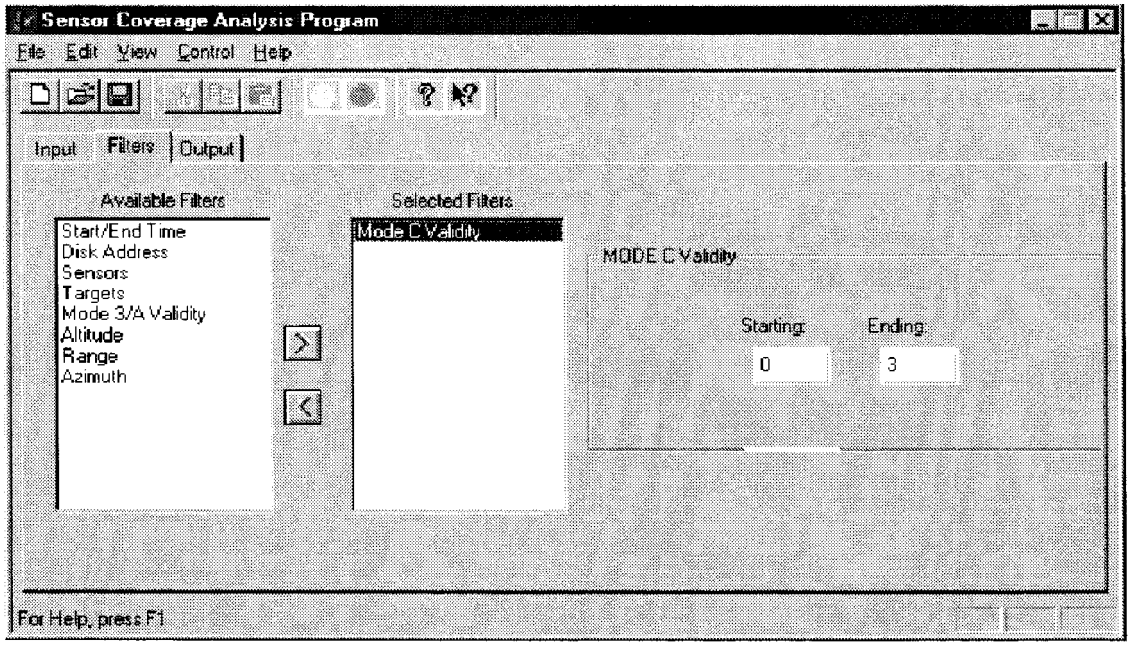


FIGURE 4-138N. SCAP MODE C VALIDITY FILTERS WINDOW

(k) Mode 3/A Validity filter (Figure 4-l 380). If selected, only data with Mode 3/A Validity values that fall in the selected range pass this filter for analysis purposes.

(1) Place the cursor in either the Starting box or the Ending box; if blank, type in the numeric (0 – 3). If values are present, delete the values and enter new values.

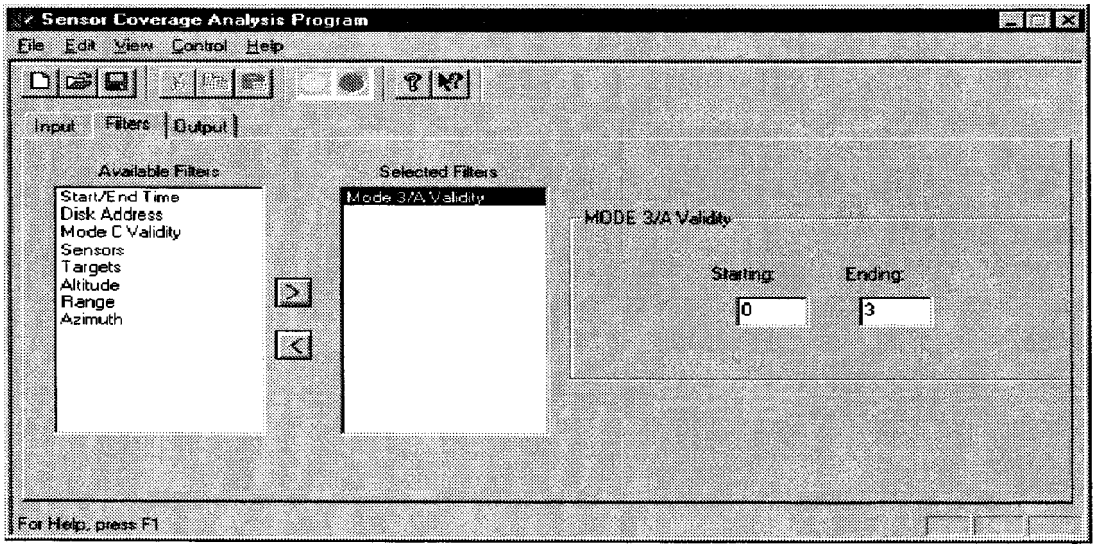


FIGURE 4-l 380. SCAP MODE 3/A VALIDITY FILTER WINDOW

(l) Targets filter (Figure 4-138P). If selected, only data of the selected target type pass this filter for analysis purposes.

(1) Place the cursor in the checkbox of the Target box corresponding to the desired Target and click. The checkbox now contains a "✓" and the sensor is highlighted. (a "✓"enables and a blank box disables.)

a Radar reinforced is the default setting.

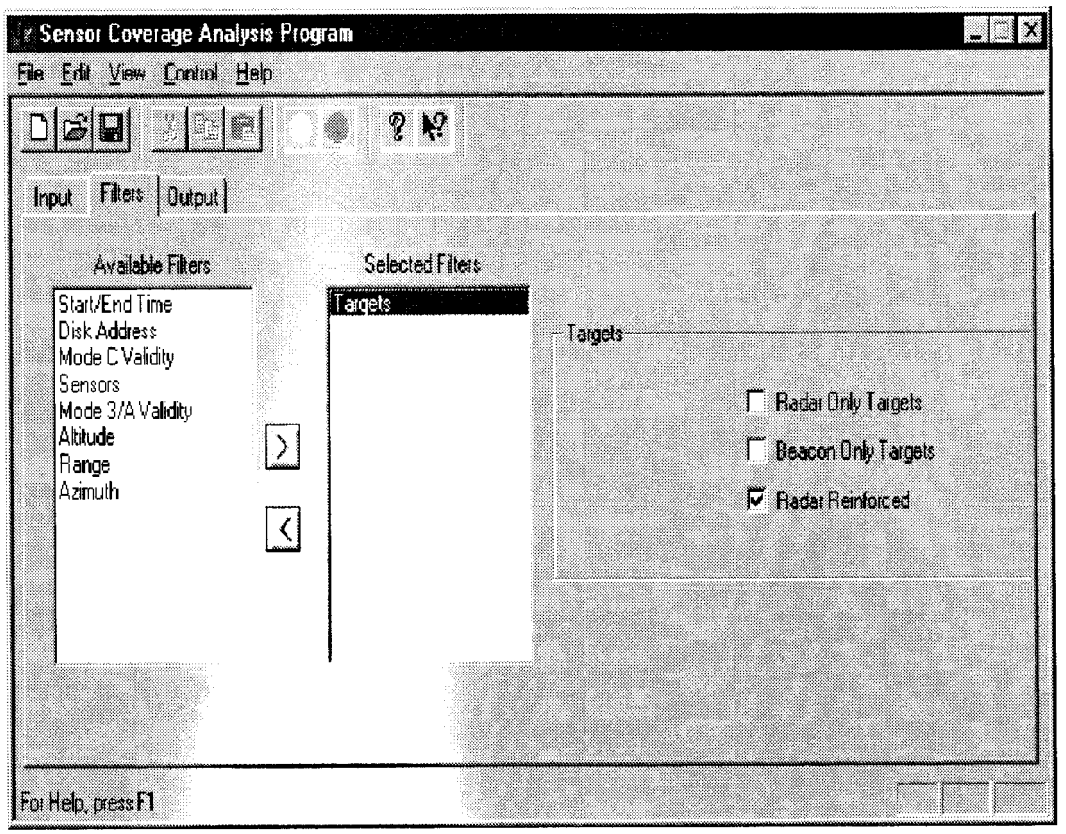


FIGURE 4-138P. SCAP TARGETS FILTER WINDOW

5. Output tab (Figure 4-138Q):

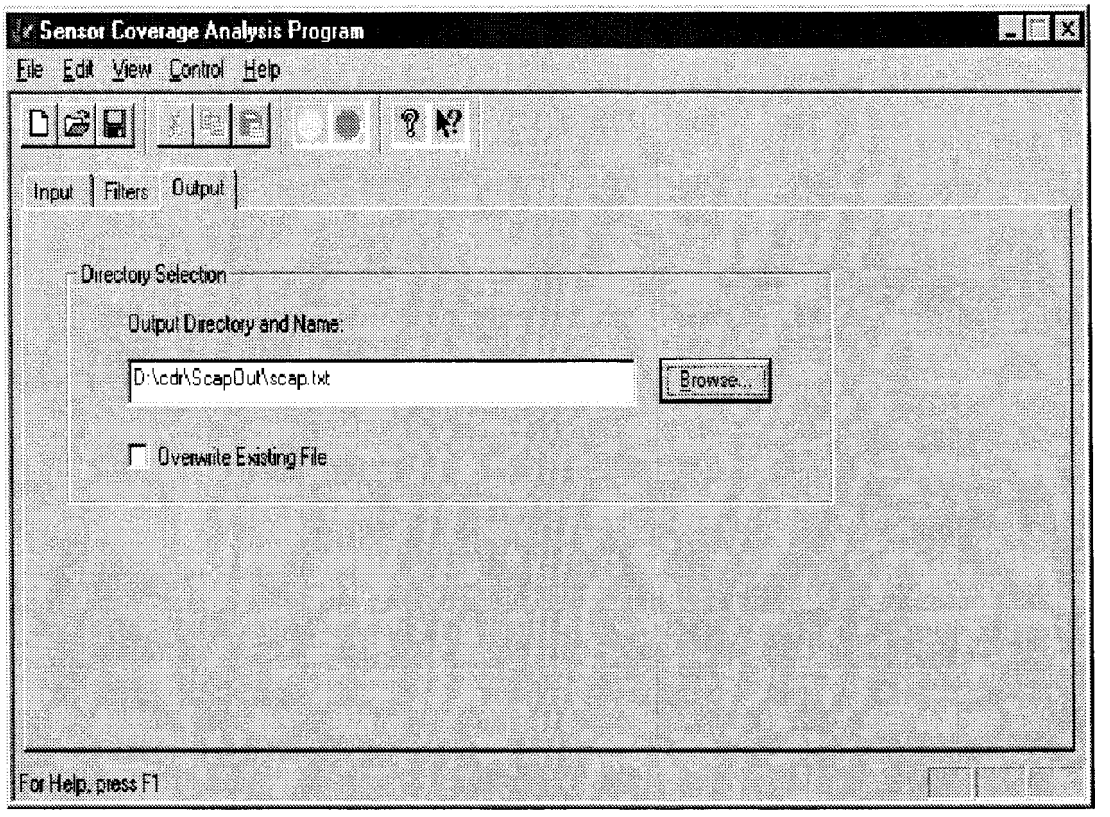


FIGURE 4-I 38Q. SCAP OUTPUT FILE WINDOW

(a) Observe the Output File Options box.

(b) The path name listed in the Directory and Name box is the output file in which the SCAP program will place the processed data:

(1) To establish an output file, click in the Directory and Name box.

(2) Type in the full path name (drive, directory, sub directories, file) or,

(3) Click on the Browse button.

(4) Observe an Output Open File window (Figure 4-138R).

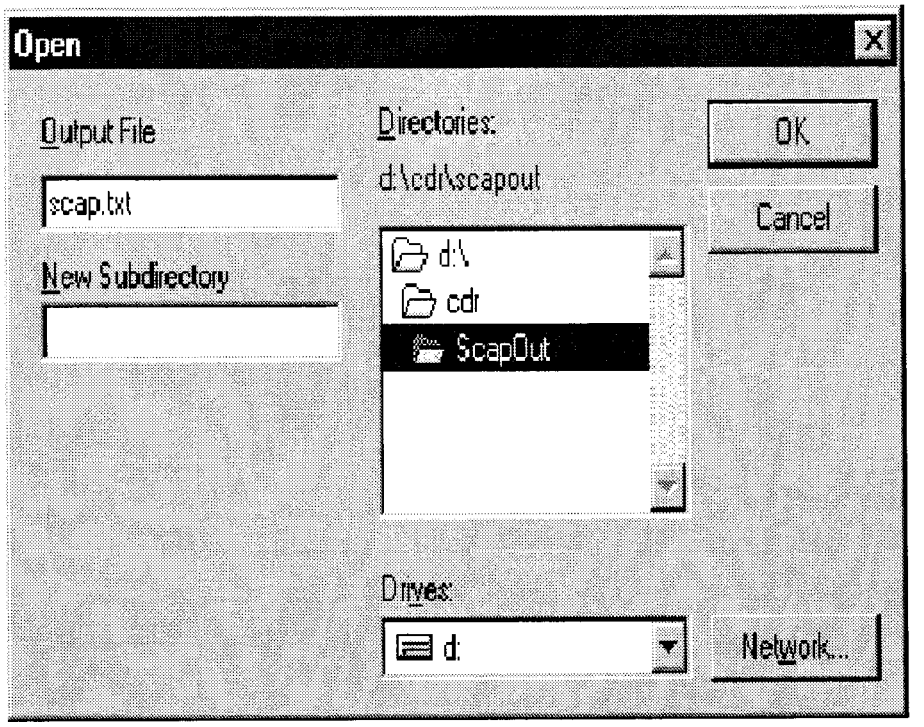


FIGURE 4-I 38R. SCAP OUTPUT OPEN FILE WINDOW

(5) Select the path by clicking on the appropriate drive, directory, sub directories, and file:

a In the Open Output File window, observe the output file scap.txt is set as default. It may be changed/modified by the user.

b In the New Sub directory window, the selection of an alternate sub directory may be set by the user.

c Click OK to select current output file and/or sub directory and return or Cancel to return without change.

(6) Observe the path name appears in the Directory and Name box.

(7) If the Overwrite Existing File check box is checked a new file is produced. If not checked (default), the data in the existing file will be added to the data from the current analysis and written to a file of the same name.

e. SCAP operations:

1. Setup the input and output file names and directories.

2. Set the filters.

3. To start SCAP:

   (a) Click Control in the Menu bar and select START or

   (b) Click the Start (green button) in the Toolbar menu.

3. To monitor SCAP processing:

   (a) Messages will appear in the lower left-hand corner of the window.

4. To stop SCAP (SCAP analysis may be stopped at any time):

   (a) Select Control/Stop or click Stop (red button) in the Toolbar. This will abort the analysis and no data will be written to the SCAP output file.

4.6 MAINTENANCE

4.6.1 Maintenance Manager

The Maintenance Manager group contains maintenance applications which provide evaluation, monitoring, testing, and equipment verification for the ARTS hardware.

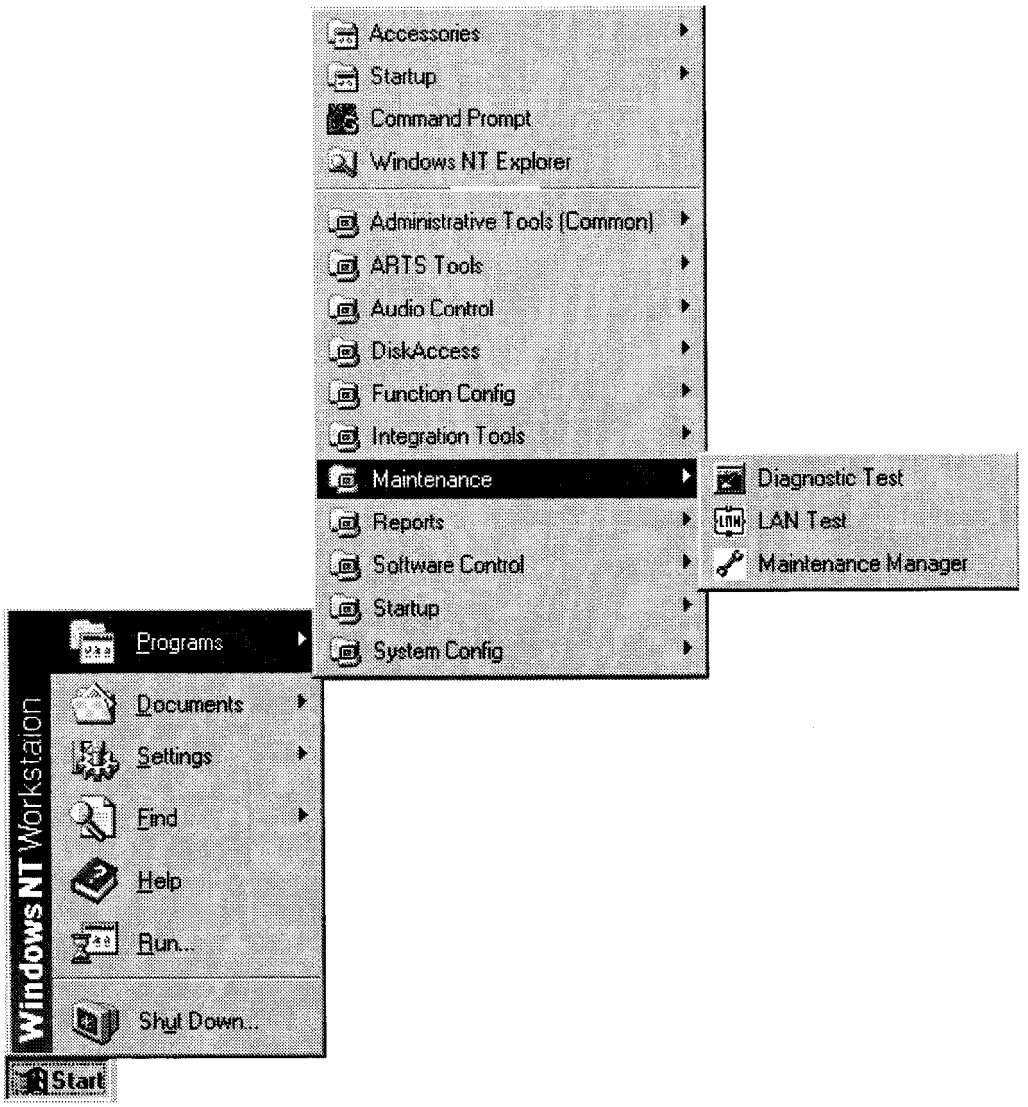


FIGURE 4-I 39. MAINTENANCE MANAGER GROUP WINDOW

a. Maintenance operation:

1. Click Maintenance in the Programs window (Figure 4-4).

2. Observe the Maintenance program group (Figure 4-139).

b. Special Notes:

1. Maintenance Manager controls the execution of the Disk Test, Remote Tower Display Test, Sensor Test, Printer Test, and the Serial Board Loopback Test.

2. A diagnostic is a computer program that aids in the maintenance of a specific piece of equipment. It detects that a malfunction is present in the equipment by exercising the logic circuitry and data paths of the equipment, and isolates the malfunction to specific hardware replaceable unit(s).

3. Functional tests are programmed instruction sequences executed by a computer to demonstrate that the functional properties of an equipment or subsystem meet the requirements set forth in the appropriate specification.

4. The device(s) to be tested must be in an Off-Line or test mode state.

5. The status bar indicates command entry validation or communication errors.

c. Menu Bar Function:

File Menu

Exit	Exits the application after giving the user the opportunity to save data.

View Menu

Toolbar	Toggles the Toolbar between displayed and hidden.
Status bar	Toggles the Status bar between displayed and hidden.
Expand/Collapse Tree	Expands or collapses the entire system configuration tree.
World	Displays all devices in the system configuration tree.
Selected Device Only	Displays only the selected devices in the system configuration tree.
Disks Only	Displays only disk devices in the system configuration tree.
Printers Only	Displays only printer devices in the system configuration tree.
Serial Boards Only	Displays only remote tower display devices in the system configuration tree.
Sensors Only	Displays only sensor devices in the system configuration tree.
Remote Tower Displays	Displays only remote tower display devices in the system only configuration.

Control Menu

Start	Starts currently selected test.
stop	Stops currently running test.

d. Toolbar Functions:

Greater Than/ Less Than Symbols	Expands or collapses the entire system configuration tree.
Bullseye	Views only the selected device.
World	Views all devices.
Disk	Displays disks only.
Printer	Displays printers only.
Board	Displays serial boards only.
Sensor	Displays sensors only.
Display	Displays Remote Tower Displays only.
Green Circle	Starts currently selected test.
Red Circle	Stops currently running test.

e. Maintenance Manager operation:

1. Click Maintenance Manager (Figure 4-l 39).
2. Observe the Maintenance Manager window (Figure 4-140).

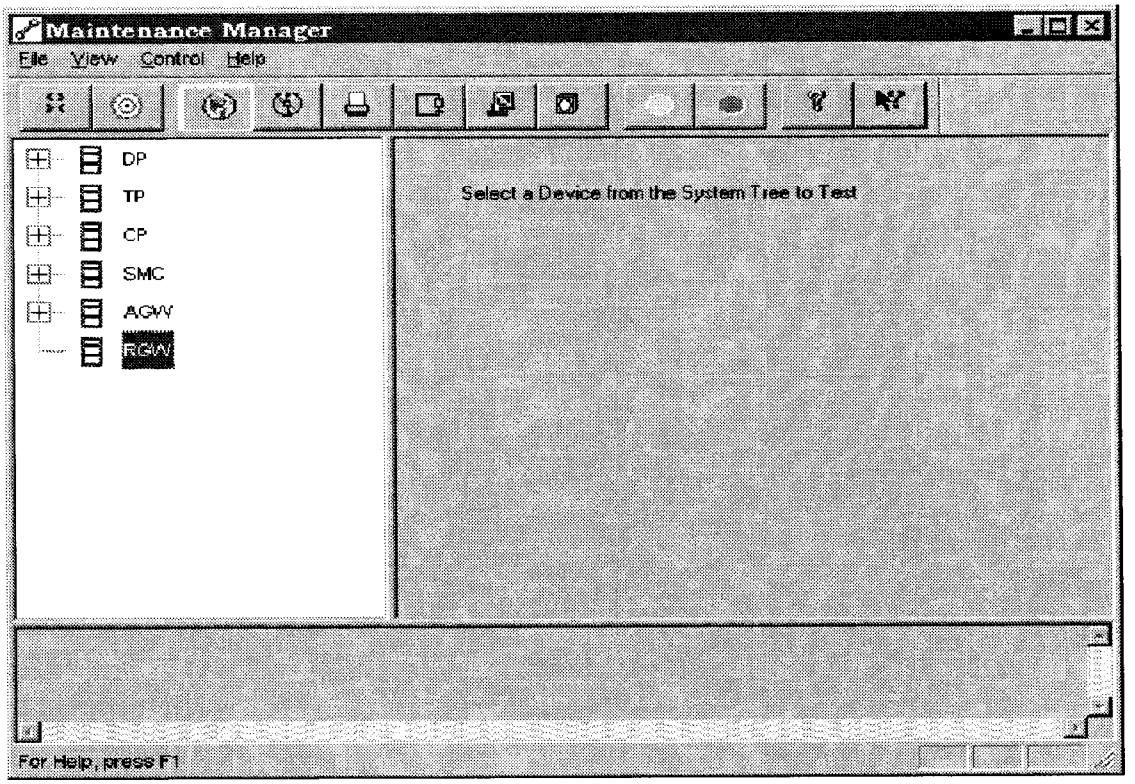


FIGURE 4-l 40. MAINTENANCE MANAGER WINDOW

3. Observe a System Tree box, Test View Area box (right side), and a Message Display Area (bottom) box.

   (a) In the System Tree box, observe a graphical tree containing a hierarchy of subsystems, chassis, and devices.

   (b) Double click on individual nodes to expand that node, or collapse that node if already expanded. Selecting View/Expand/Collapse Tree or <>, >< from the Toolbar expands or collapses the node, and it expands or collapses the entire system configuration tree. The RGW subsystem cannot be expanded.

   (c) Observe the Test View Area with statement "Select a Device from the System Tree to Test."

   (d) Select a single device to test by clicking once on the device.

   (e) Observe a box around the device.

   (f) If a disk is selected:

      (1) Disk Test. Performs functional verification of the logic circuitry and data paths associated with the hard disks, floppy disks, or optical disks in the operational chassis (Figure 4-l 41).

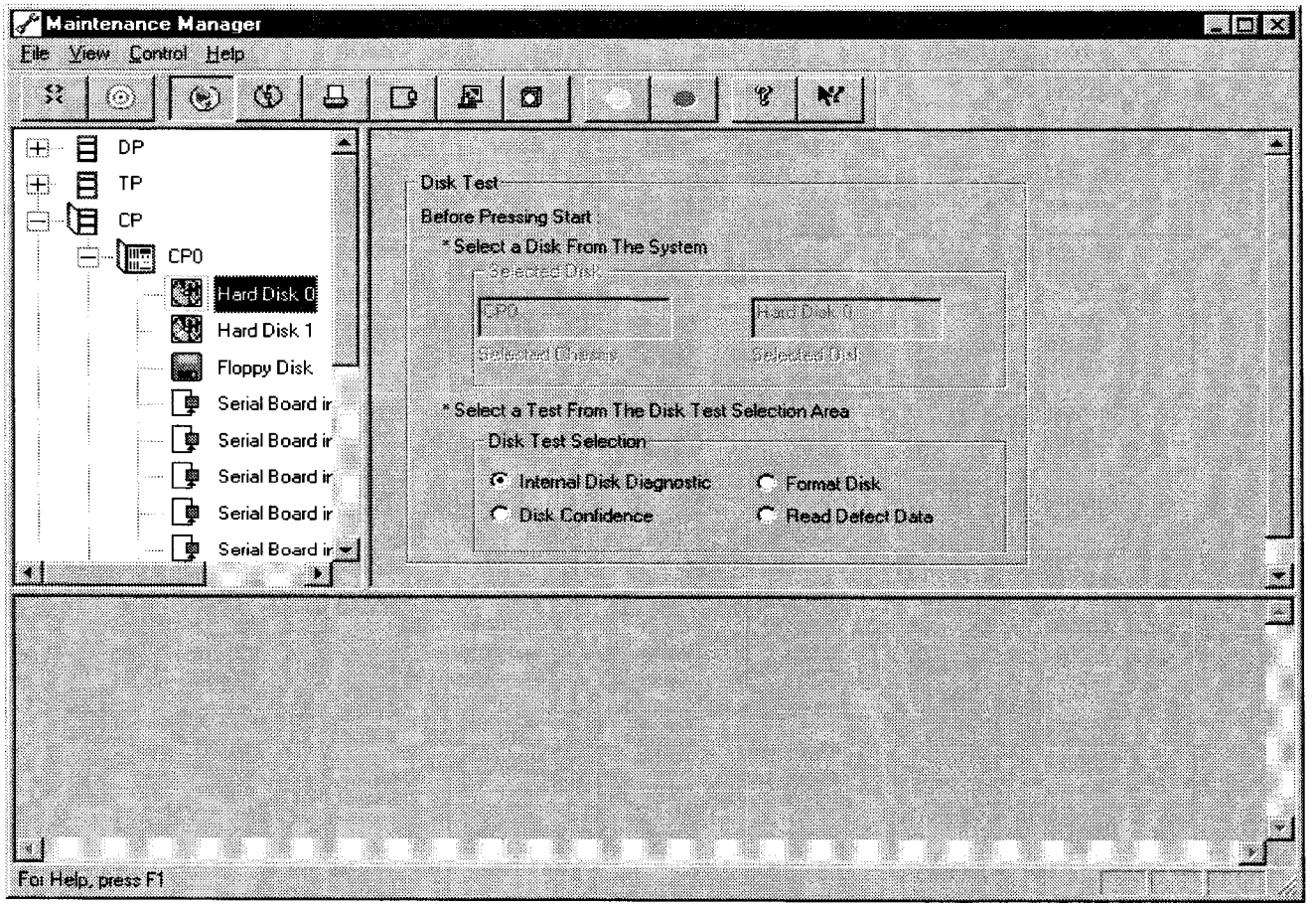


FIGURE 4-l 41. DISK TEST WINDOW

a In the Test View Area, observe a Disk Test box.

b If a disk is selected (from step 3 (d)) above), the Selected Chassis and Selected Disk are identified.

c If View/Disks Only or Disks Only Toolbar button is selected, click on an individual disk. The Selected Chassis and Selected Disk are identified in the appropriate boxes.

d Place the cursor in the Disk Test Selection box and click on one radio button identifying which test to execute.

1 If a floppy disk is selected, the Read Defect Data Test is not functional.

e Observe the circle nearest to the selected test is filled in.

f Select Control/Start or click the green circle in the Toolbar.

g Observe the Status bar for command entry validation or communication errors.

h Observe the Message box which contains test output.

i Select Control/Stop to stop the current test or File/Exit to exit the test.

(g) If a Remote Tower Display (RTD) is selected:

(1) Remote Tower Display (RTD) Test. Performs a functional test of the RTD subsystem (RDBM or DBRITE). It executes in an off-line Remote Display Multiplexer (RDM) and communicates with the RTD via modems and telephone lines (Figure 4-142). The selected RTD must be operationally disabled by Keyboard entry prior to running of the RTD test.

a If an RTD is selected (from step 3(d) above), the Selected Chassis and Selected Remote Tower Display are identified.

b If View/Remote Tower Displays Only or Remote Tower Displays Only Toolbar button is selected, click on an individual chassis from an RTD. The Selected Chassis and Selected RTD are identified in the appropriate boxes.

c Select Control/Start or click the green circle in the Toolbar.

d Observe the Performance Status boxes (Received, Transmitted, Retransmitted, and Bad Frames) are receiving system data.

e Click clear to reset Performance Status boxes.

f Observe the Status bar for command entry validation or communication errors.

g Select Control/Stop to stop the current test or File/Exit to exit the test.

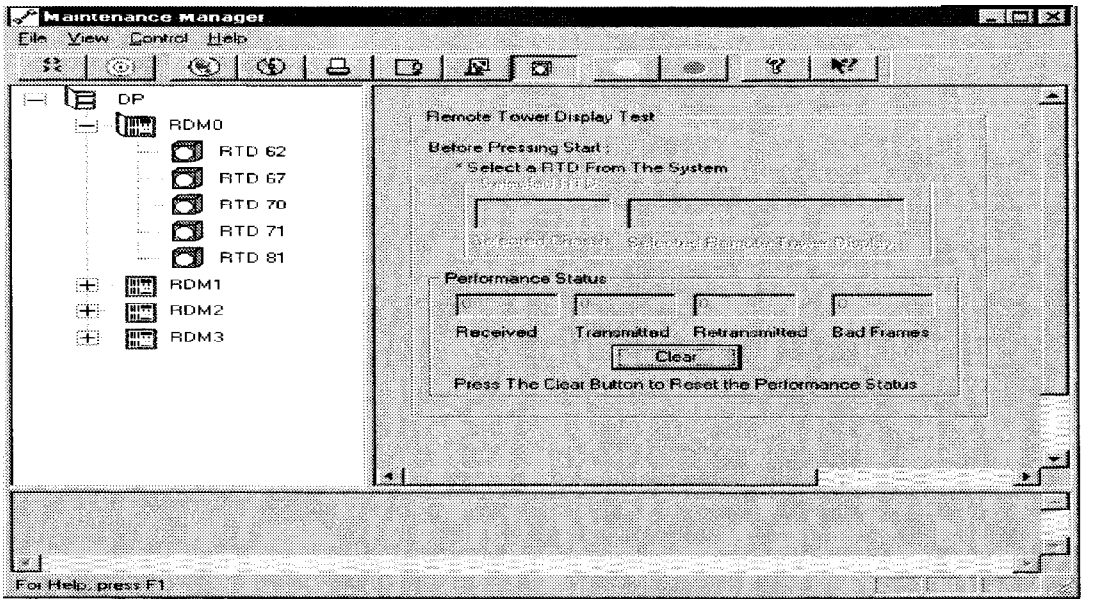


FIGURE 4-I 42. RTD TEST WINDOW

(h) If sensors is selected:

(1) Sensor Test. Provides a means of monitoring, processing, and assessing the output of the ARTS IIIE radars (SRAP, ASR-9, and ARSR) in a test mode environment. Test results are displayed on the selected display. (Figure 4-I 43).

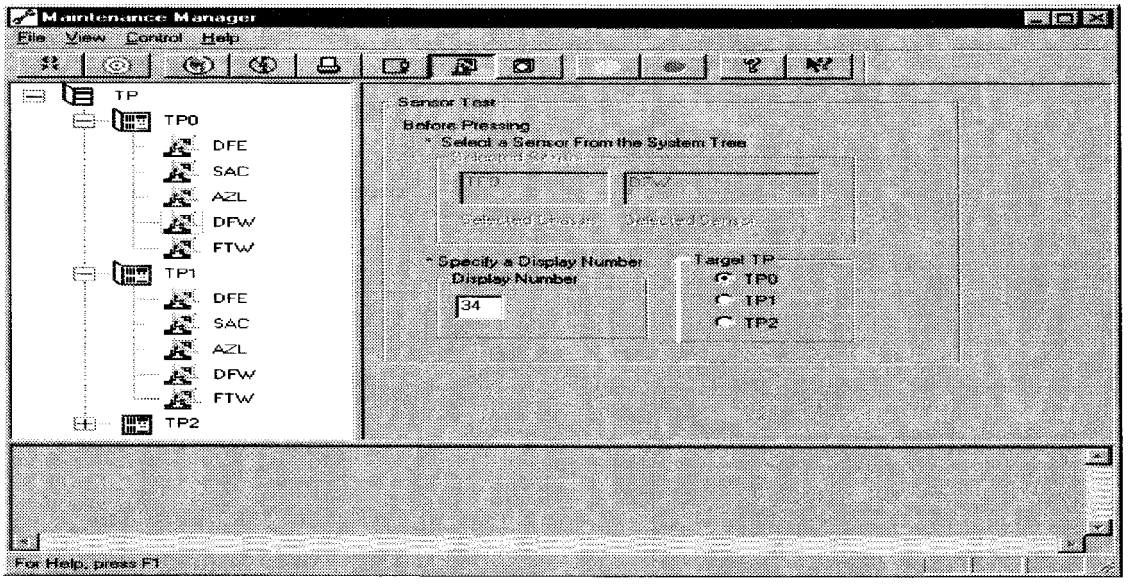


FIGURE 4-I 43. SENSOR TEST WINDOW

a If sensors is selected (from step 3(d) above), the Selected Chassis and Selected Sensor are identified.

b If View/Sensors Only or Sensors Only Toolbar button is selected, click on an individual chassis from a TP or SG. The Selected Chassis and Selected Sensor are identified in the appropriate boxes.

c Place the cursor in the Display Number box and type in a valid display number, not NID, and select the Target TPO, TP1, or TP2.

d Select Control/Start or click the green circle in the Toolbar.

e Observe the Message box which contains test output.

f Observe the Status bar for command entry validation or communication errors identified in the left-most box under the selected sensor.

g Observe the selected display for sensor test results. The selected output display displays the Sensor Message Tally Table with message count increments.

h Select Control/Stop to stop the current test or File/Exit to exit the test.

(i) If a printer test is selected:

(1) Printer test. This test performs a functional exercise of the logic circuitry and data paths associated with either the High Speed or the Echo printer (Figure 4-144).

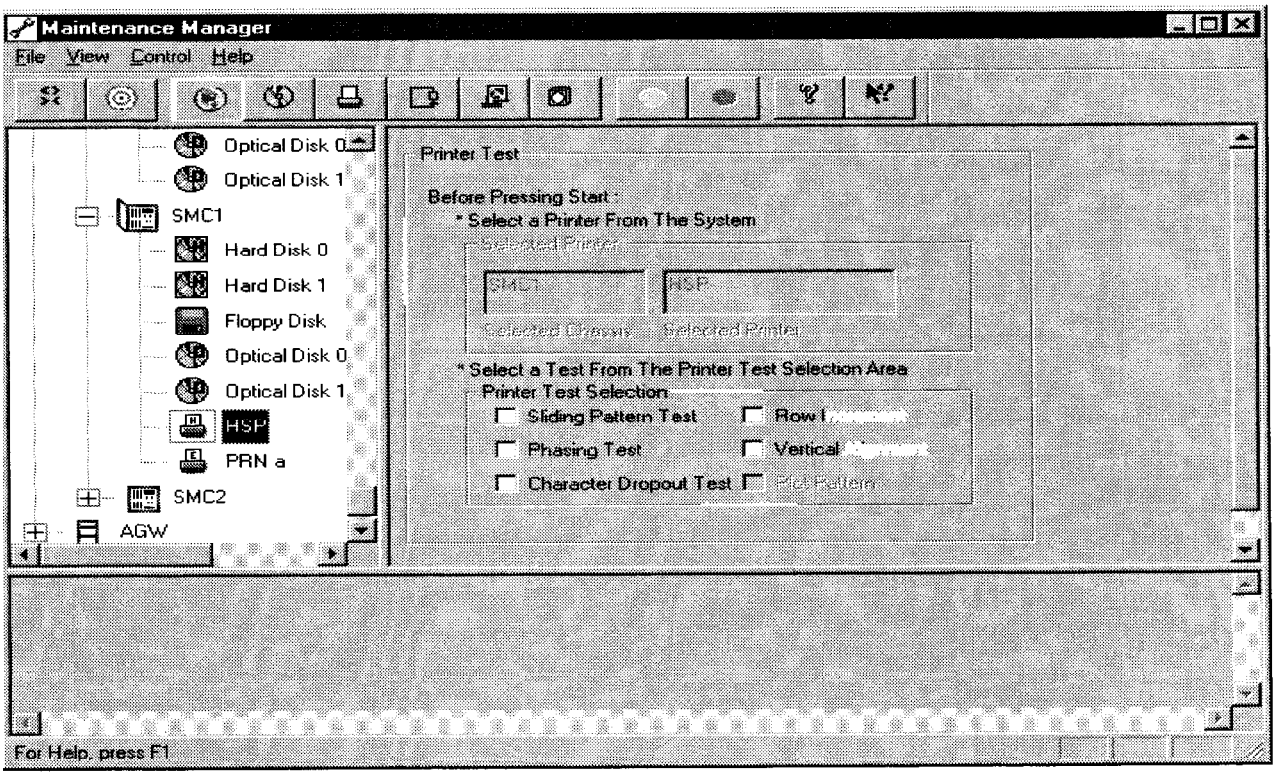


FIGURE 4-144. PRINTER TEST WINDOW

a In the Test View Area, observe a Printer Test box.

b If a printer is selected (from step 3(d) above), the Selected Chassis and Selected Printer are identified.

c If View/Printer Only or Printer Only Toolbar button is selected, click on an individual printer (PRN or HSP) from an SMC. The Selected Chassis and Selected Printer are identified in the appropriate boxes.

1 If HSP is selected, the Plot Pattern Test is not functional.

d Place the cursor in the Printer Test Selection box and click on one radio button identifying which test to execute.

e Observe the circle nearest to the selected test is filled in.

f Select Control/Start or click the green circle in the Toolbar.

g Observe the Status bar for command entry validation or communication errors.

h Observe the Message box which contains test output.

i Select Control/Stop to stop the current test or File/Exit to exit the test.

(j) If serial board loopback test is selected:

(1) Serial Board Loopback Test. Performs a functional exercise of the serial board logic circuitry (Figure 4-l 45).

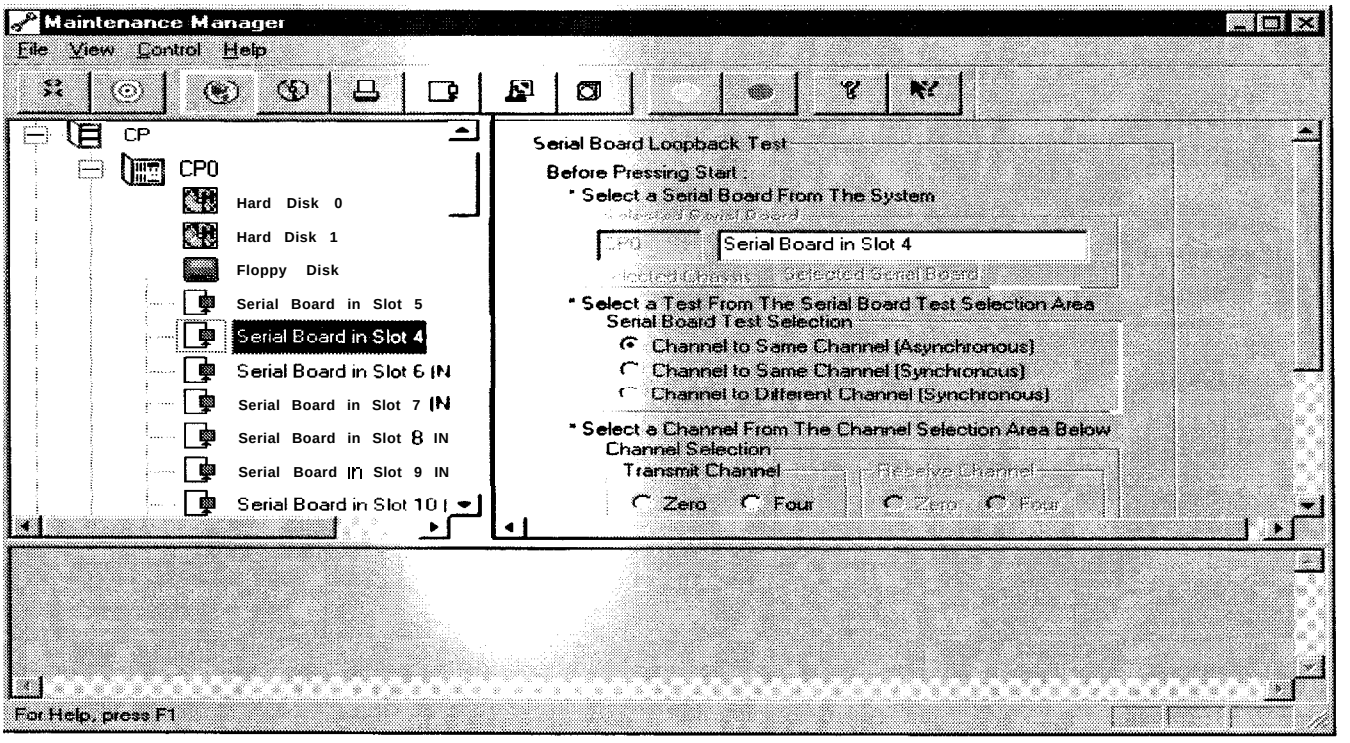


FIGURE 4-145. SERIAL BOARD LOOPBACK TEST WINDOW

a. In the Test View Area, observe a Serial Board Loopback Test box.

b. If a disk is selected (from step 3(d) above), the Selected Chassis and Selected Serial Board are identified.

c. If View/Serial Boards Only or Serial Boards Only Toolbar button is selected, click on an individual serial board. The Selected Chassis and Selected Serial Board are identified in the appropriate boxes.

d. Place the cursor in the Serial Board Test Selection box and click on one radio button identifying which test to execute.

e. Observe the circle nearest to the selected test is filled in.

f. Place the cursor in the Channel Selection box and click on one radio button for a Transmit Channel and a Receive Channel.

g. Observe the circle nearest to the selected channels is filled in.

   1. The Receive Channel is functional when Channel to Different Channel (Synchronous) Serial Board Test is selected.

h. Select Control/Start or click the green circle in the Toolbar.

i. Observe the Status bar for command entry validation or communication errors.

l. Observe the Message box which contains test output.

k. Select Control/Stop to stop the current test or File/Exit to exit the test.

4.6.2 Local Area Network (LAN) Test

The LAN Test performs a functional verification of the logic circuitry and data paths associated with the LAN.

a. Special Notes:

   1. A Warning message appears if the LAN Diagnostic is to be run on the operational network.

   2. The Point-to-Point test verifies the ability of a specific operational node to accept and respond to messages which are addressed to only that node.

   3. The Broadcast test verifies the ability of the operational nodes to accept and respond to system wide messages.

   4. The LAN test is run on both the operational and maintenance networks.

b. Menu Bar Functions:

File Menu

Exit	Exits the application after giving the user the opportunity to save the data.

View Menu

Selection Table	Displays NID table to select NIDs for test.
Network A	Displays test results accumulated for network A in the network viewing window.
Tool Bar	Displays or hides tool bar.
Network B	Displays test results accumulated for network B in the network viewing window.
Network A&B	Displays test results accumulated for network A and network B in the Results network viewing window.
Status Bar	Displays or hides status bar

Settings Menu

Point-to-Point	Displays a menu where the user can select or deselect, a predefined group of nodes (ACDs, FDPs, SMCs, CPs, TPs, LBPs, RDMs, AGWs, SGs, all configured nodes), or clear all NID selections.
Broadcast Messages	Enables or inhibits the sending of broadcast messages.
Iterations	Allows the user to specify the number of point-to-point messages and broadcast messages to be sent.
Clear All Settings	Clears all user-specified settings.

Control Menu

Start	Starts transmission of messages.
stop	Stops transmission of messages.
Clear Performance Results	Stops updating the NID Performance Results window. Sets current selected NID to zero.
Clear All Results	Clears all test results, counters, and statistics.

c. Toolbar Functions:

CP	Selects/Deselects all CPs.
TP	Selects/Deselects all TPs.
SM	Selects/Deselects all SMCs.
RD	Selects/Deselects all RDMs.
AG	Selects/Deselects all AGWs.
AC	Selects/Deselects all ACDs.
SG	Selects/Deselects all SGs

FD	Selects/Deselects all FDPs.
LB	Selects/Deselects all LBPs.
FE	Selects/Deselects all FDEs.
PC	Selects/Deselects all PCs
Erase	Clear All NID Selections.
World	Selects/Deselects all configured NIDs.
Blank Page	Clears all test results.
Green Circle	Starts transmission of messages.
Red Circle	Stops transmission of messages.

d. LAN Test operation:

1. Click LAN Test (Figure 4-139).
2. Observe the LAN Test window (Figure 4-146).
   (a) Place the cursor in individual grid location(s), in the Selection Table, for a specific NID and click.
   (b) Observe the grid location turns blue.
3. To select a group of NIDs:
   (a) Click on the Toolbar icon (CP, TP, SMC, etc.) which defines the group(s) of chassis to select.
   (b) Click on the grid column or row to select all chassis within that column or row.
   (c) Observe with icon, column, or row selected, the selected grid locations turn blue.
   (d) Selections may be deselected by clicking the same icon, column, or row.
4. To select all NIDs:
   (a) Select the world in the Toolbar.
   (b) Observe all NIDs are highlighted in the Selection Table.
5. To select the message type:
   (a) Select Settings.
   (b) Observe pull down menu.
   (c) Point-to-Point by default is selected if the user has selected individual NID(s) and a message number is placed in the Point-to-Point Iterations counter (see step 7).
      (1) If Point-to-Point is selected:
         a Observe a pull down menu.
         b Select which groups of chassis to receive Point-to-Point messages.
         c Observe the group is highlighted in blue on the grid.

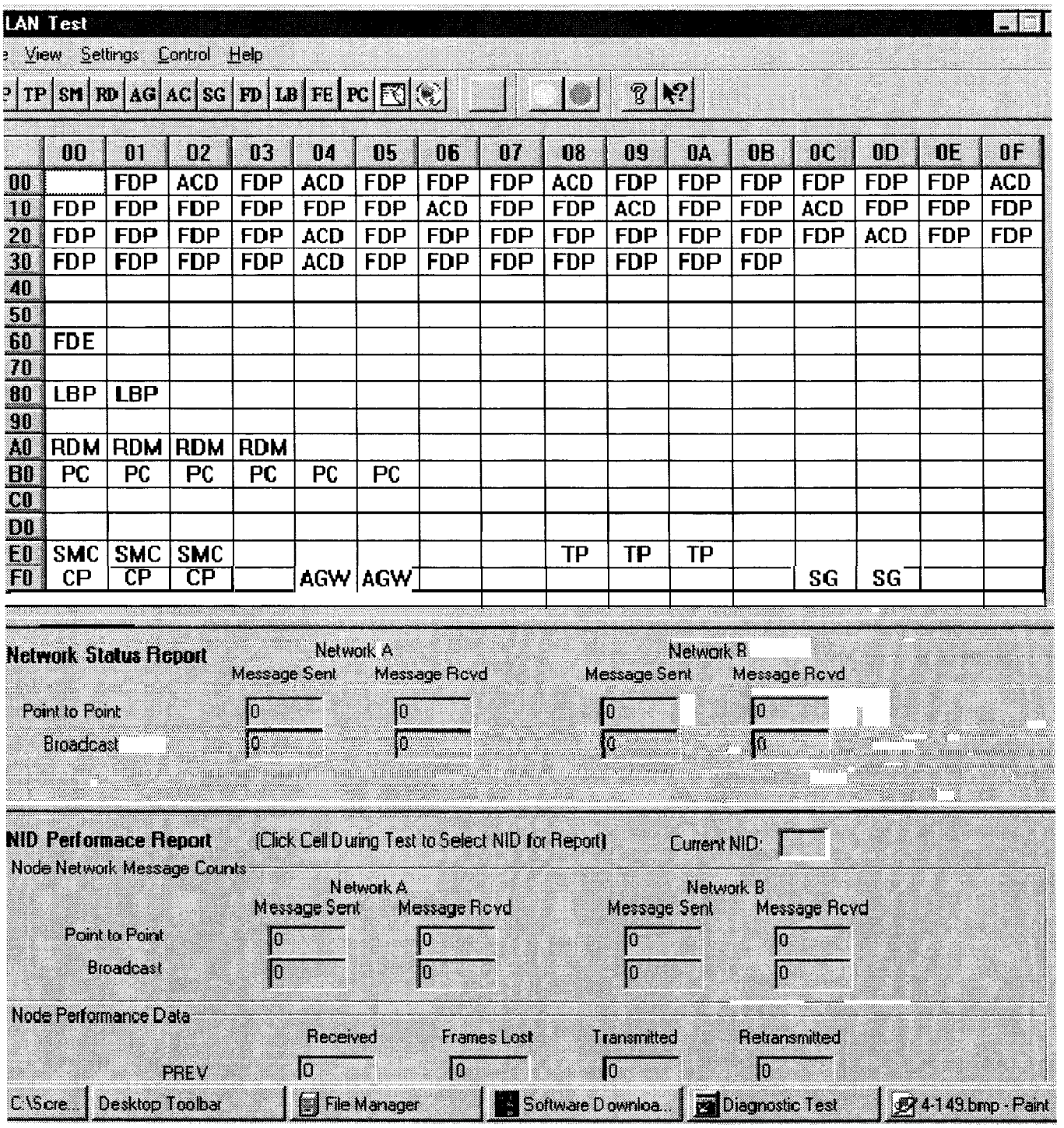


FIGURE 4-I 46. LAN TEST WINDOW

6. Observe a grid with all configured NIDs on the network(s).

7. To select individual NID(s):

(a) If Broadcast is required, tab, arrow down, or click to select Broadcast,

(b) To verify the Broadcast setting, select Settings again and observe a " " next to Broadcast.

8. To select the number of messages:

(a) Select Settings/Iterations.

(b) Observe a Message Iterations box.

(c) The default value for Point-to-Point and Broadcast in this box is 5.

(d) If desired, change either or both message number(s).

(e) Select OK to select the changed number and exit or Cancel to exit with the default message number.

9. To start the test:

(a) Select Control/Clear all Results or blank page in the Toolbar to clear any previous test data.

(b) Select Control/Start to click on the green circle in the Toolbar.

(c) If test is being run on the operational network:

(1) Observe Warning box (Figure 4-147).

(2) Select the response to Continue, perform only Point-to-Point Tests (if selected) or Cancel.

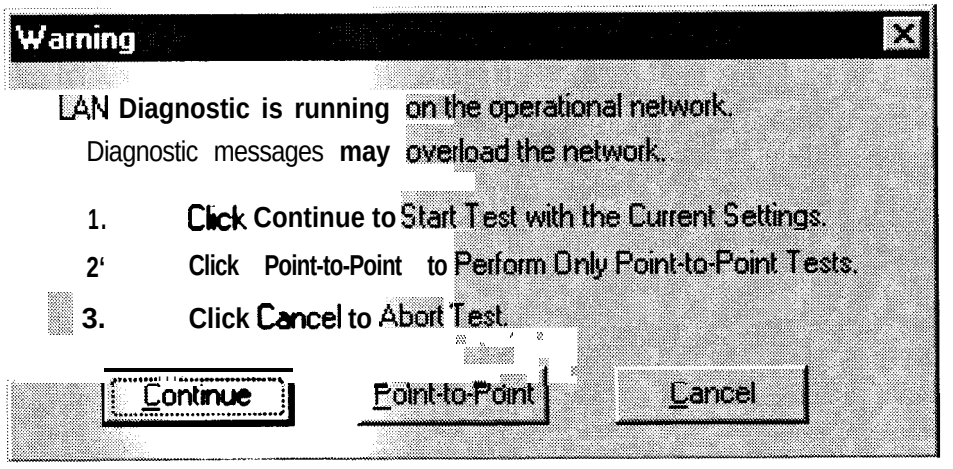


FIGURE 4-I 47. LAN TEST STATUS WINDOW

(d) Observe all configured nodes are momentarily highlighted in blue with asterisks at the grid location (a resetting operation).

(e) Observe Status bar for test progress.

(f) Observe the following on the grid at the selected chassis position(s) (Figure 4-148).

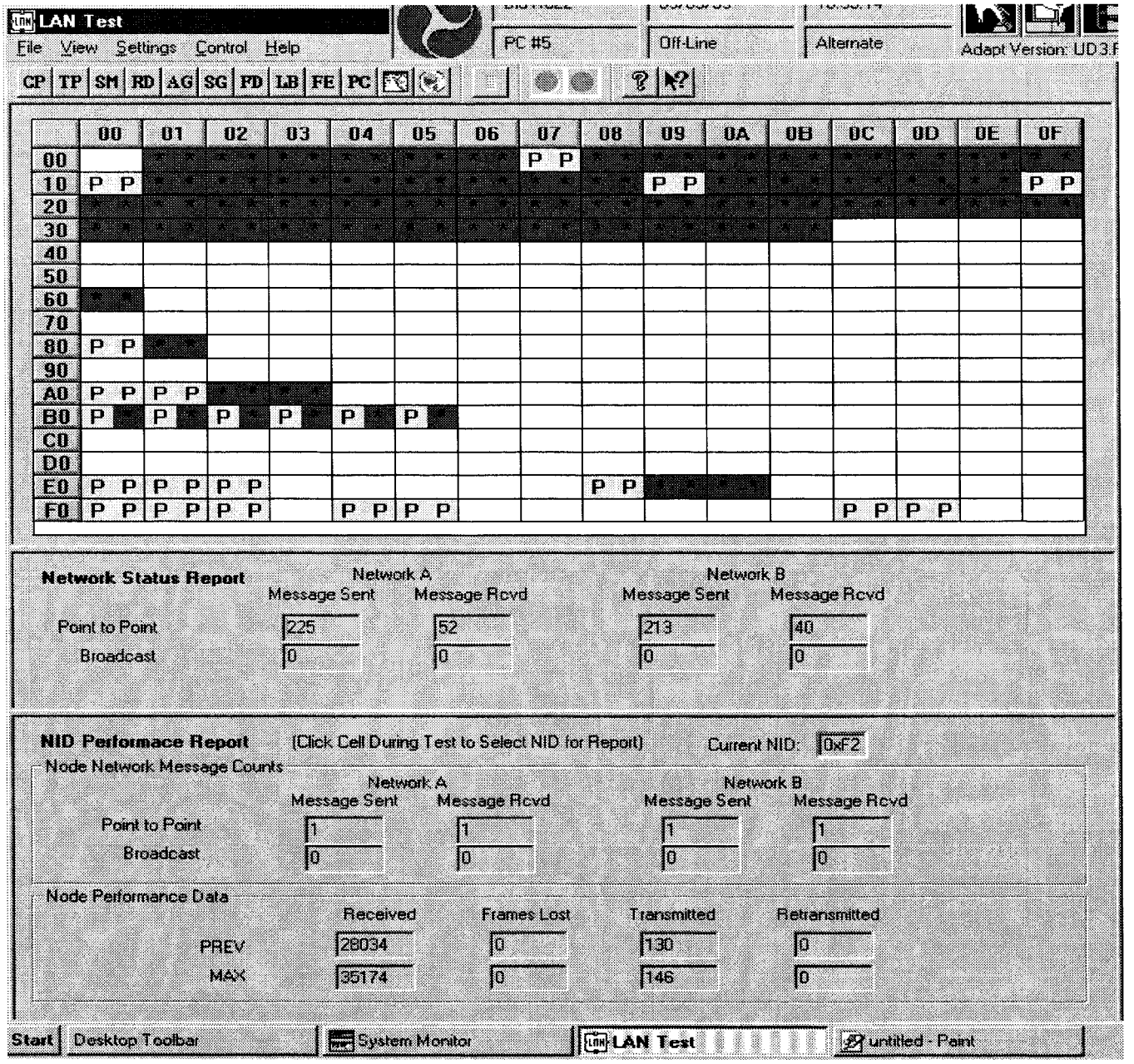


FIGURE 4-148. LAN TEST RESULTS WINDOW

(1) The left half of the grid location represents Network A (operational), the right half represents Network B (maintenance).

a Blue indication with asterisk (*) indicates no response from selected chassis.

b Yellow indication with percent sign (%) indicates the selected chassis is responding.

(g) Observe the messages sent/received incrementing in the Network Status Report (Point to Point and Broadcast) beneath the client area.

(h) Observe the test completion and the contents of the Network Status Report (Point to Point and Broadcast) (Figure 4-148).

(1) If the Point-to-Point message portion of the test is correct, the message number sent and received are the same on both networks and a green indication in the grid with “P” indicates a pass condition for the test on that chassis.

a If the sent are greater than the receive, the grid retains the yellow with the percent sign (%).

b If the receive are greater than the sent, the grid indication is red with a (+).

(2) If the Broadcast message portion of the test is correct, the message number received is a multiple of 2 times the operational nodes on each network and a green indication in the grid with “P” indicates a pass condition for the test on that chassis.

a If the sent are greater than the expected multiple received, the grid retains the yellow with the percent sign (%).

b If the expected multiple received are greater than the sent, the grid indication is red with a (+).

10. If the user wants to activate the NID Performance Report in the bottom portion of the window:

(a) Click on a selected NID during the running of the LAN test.

(b) Observe the information in the Node Network Message Counts.

(1) Presents current test information.

(c) Observe the information in the Node Performance Data.

(1) It reflects a composite of network activity for the selected node as it exists at that particular point of time.

a PREV presents the previous interval values over a set period of time (usually 60 seconds).

b MAX presents the maximum value that has been achieved during the set period of time.

11. To stop the test before completion:

(a) Select Control/Stop or click on the red circle in the Toolbar.

(b) All counts are terminated.

12. To exit, select File/Exit.

4.6.3 Diagnostic Test

The Diagnostic Test initiates resident internal firmware self-tests for user-selected chassis.

a. Special Notes:

1. SMC-PC must be offline.
2. If a NID selected is in the operational system, a warning is displayed before the test is started.
3. Test results indicate whether or not the chassis passed the internal self-testing, failed the internal self-testing, or did not respond.
4. For RDMs, the status of each RDBM is also displayed in the message area.
5. For FDADs, two responses are displayed, one from SSS, and one from DPS.

b. Menu Bar Functions:

File Menu

Exit	Quits the application after giving the user the opportunity to save the data.

View Menu

Tool Bar	Displays the tool bar menu
Status Bar	Displays the status bar menu.

Settings Menu

NID Selection	Displays a menu which allows the user to selects/deselect a predefined group of nodes (ACDs, FDPs, SMCs, CPs, TPs, SGs, LBPs, RDMs, AGWs, all configured nodes), or clear all selected NIDS.
Request Delay	Allows setting the length of delay between resetting chassis and requesting for chassis status data.
Clear All Settings	Clears all user-specified settings.

Control Menu

Start	Starts transmission of messages, and updates Status bar to notify the user that the actual Diagnostic Test is delayed for a set amount of time to allow for each subsystem to reset and initialize.
stop	Stops the transmission of reset and status request messages.
Clear All Test Results	Clears all status data in the NID table and message window.

c. Toolbar Functions:

CP Button	Selects/Deselects all CPs.
TP Button	Selects/Deselects all TPs.
SM Button	Selects/Deselects all SMCs.
RD Button	Selects/Deselects all RDMs.
AG Button	Selects/Deselects all AGWs.
AC Button	Selects/Deselects all ACDs.
SG Button	Selects/Deselects all SGs.
FD Button	Selects/Deselects all FDPs
LB Button	Selects/Deselects all LBPs.
FE Button	Selects/Deselects all FDEs.
PC Button	Selects/Deselects all PCs.
Eraser Button	Clears all NID selections.
World Button	Selects/Deselects all configured NIDs.
Blank Page Button	Clears all status data in the NID table and message below.
Green Circle Button	Starts transmission of messages.
Red Circle Button	Stops transmission of messages.

d. Diagnostic Test operation:

1. Double click on the Diagnostic Test icon (Figure 4-139).
2. Observe the Diagnostic Test window (Figure 4-149).
3. Observe a grid with all configured NIDs on the network(s), also observe that all the PC boxes are shaded.
4. To select individual NID(s):
   (a) Place the cursor in individual grid location(s), in the Selection Table, for a specific NID and click.
   (b) Observe the grid location turns blue.

Diagnostic Test

e View Settings Control Help

P | TP | SM | RD | AG | AC | SG | FD | LB | FE | PC

	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
00		FDP	ACD	FDP	ACD	FDP	FDP	FDP	ACD	FDP	FDP	FDP	FDP	FDP	FDP	ACD
10	FDP	FDP	FDP	FDP	FDP	FDP	ACD	FDP	FDP	ACD	FDP	FDP	ACD	FDP	FDP	FDP
20	FDP	FDP	FDP	FDP	ACD	FDP	FDP	FDP	FDP	FDP	FDP	FDP	FDP	ACD	FDP	FDP
30	FDP	FDP	FDP	FDP	ACD	FDP	FDP	FDP	FDP	FDP	FDP	FDP				
40																
50																
60	FDE															
70																
80	LBP	LBP														
90																
A0	RDM	RDM	RDM	RDM												
B0	PC	PC	PC	PC	PC	PC										
C0																
D0																
E0	SMC	SMC	SMC						TP	TP	TP					
F0	CP	CP	CP		AGW	AGW							SG	SG		

Help, press F1 NUM

FIGURE 4-149. DIAGNOSTIC TEST WINDOW

5. To select a group of NIDs:

   (a) Click on the Toolbar icon (CP, TP, SMC, etc.) which defines the group(s) of chassis to select.

   (b) Select Settings/NID Selection and select groups of NIDs from the list presented.

   (c) Click on the grid column or row to select all chassis within that column or row.

   (d) Observe with icon, column, or row selected, the selected grid locations turn blue.

   (e) Selections may be deselected by clicking the same icon, column, or row.

6. To select all NIDs:

   (a) Select the world icon in the Toolbar.

(b) Observe all NIDs are highlighted in the Selection Table.

7. To select a delay in test data request from the SMC:

(a) Select Settings/Request Delay.

(b) Observe Set Delay Time selection box (Figure 4-150).

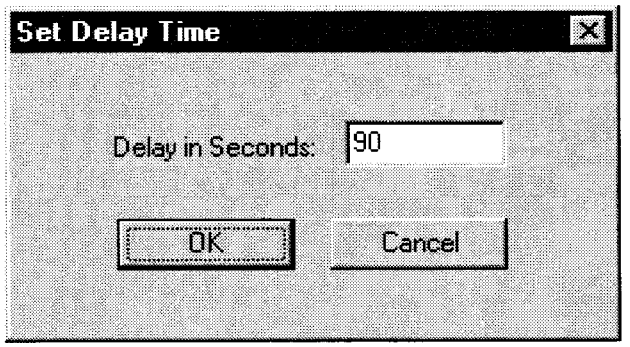


FIGURE 4-150. DIAGNOSTIC TEST DELAY DIALOG WINDOW

(1) Recommended delay times for all chassis are 50 seconds, except TP which is recommended to be 90 seconds.

(c) To change the delay time.

(1) Delete the existing numeric and type in new numeric.

(2) Select the existing numeric by holding the left mouse button and blocking the numeric and typing in a new numeric.

(3) Click the OK button to activate changed delay value or Cancel to proceed with current delay value.

6. To start the test:

(a) Select Control/Clear all Test Results or blank page in the Toolbar to clear any previous test data, all NIDs will become blue.

(b) Select Control/Start or click on the green circle in the Toolbar.

(c) If test is being run on the operational network:

(1) Observe Warning box (Figure 4-150A).

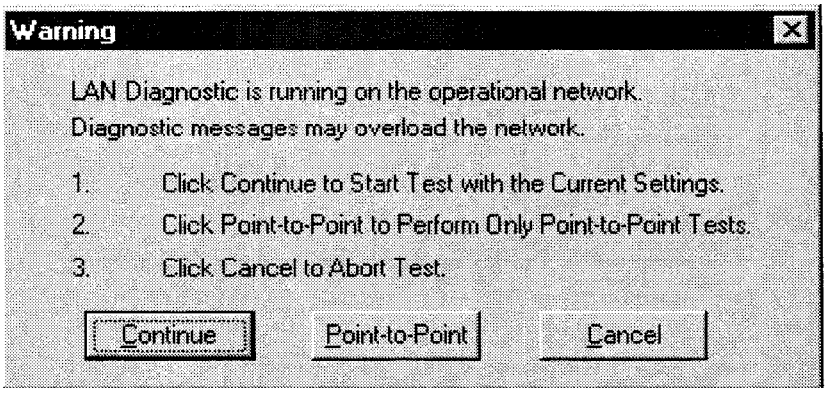


FIGURE 4-l 50A. WARNING BOX DIALOG WINDOW

(2) Click OK to continue or Cancel to discontinue.

(d) Observe a Wait box (Figure 4-150B).

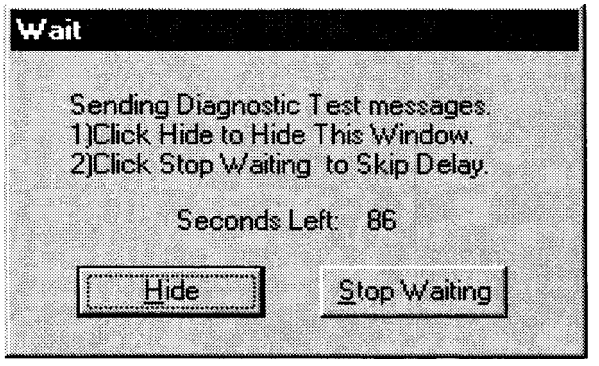


FIGURE 4-l 50B. WAIT BOX WINDOW

(1) A countdown is provided commencing from the selection made in step 7(b) or 7(c) above.

a During this time, the SMC is sending Power Up or Reset messages to the selected chassis.

b Observe the chassis are reset and proceed through their internal diagnostic routines.

c Observe the chassis message window indicates the progress of the resetting.

(2) Observe a Hide button.

a Selecting this button blanks out the Wait box, but the delay continues.

(3) Observe a Stop Waiting button.

a Selecting this button skips the delay.

(e) At end of the delay, the SMC sends a request for Diagnostic Test results (Figure 4-151).

(f) The results are indicated by:

(1) If the chassis does not respond to the request, the grid location for the NID is yellow with an “NR.”

(2) If the chassis responded and results indicate a pass, the grid location for the NID is green with a “PP.”

(3) If the chassis responded and results indicate a failure, the grid location for the NID is red with an “FF.”

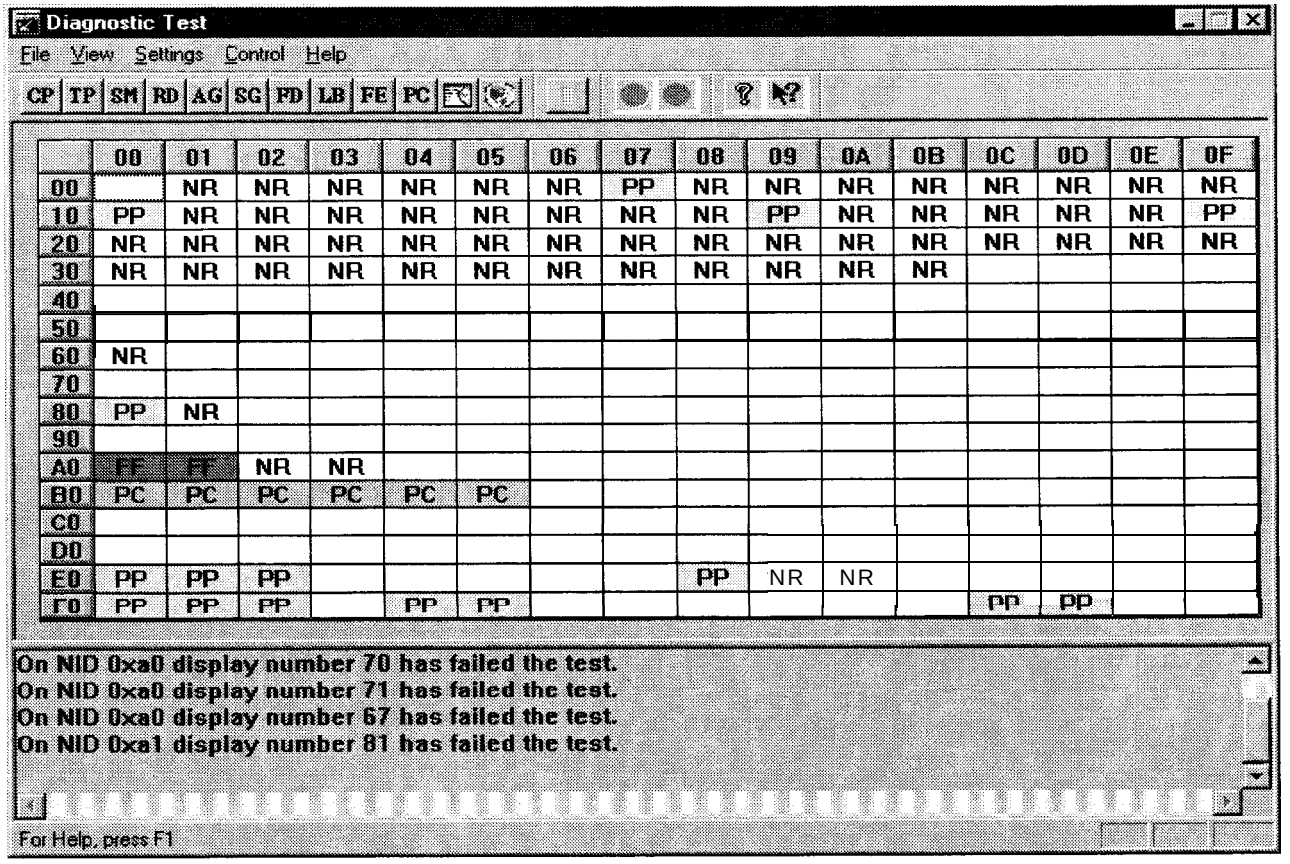


FIGURE 4-l 51. DIAGNOSTIC TEST RESULTS WINDOW

9. To stop the test:

(a) Select Control/Stop or click the red circle on the Toolbar.

(1) This must be done before another diagnostic test is run.

10. To exit:

(a) Select File/Exit

4.7 REPORTS

The Reports group contains a collection of ARTS-related reports that can be requested by the user.

a. Reports operation:

1. Click Reports in the Programs window (Figure 4-4).

2. Observe the Reports program group (Figure 4-152).

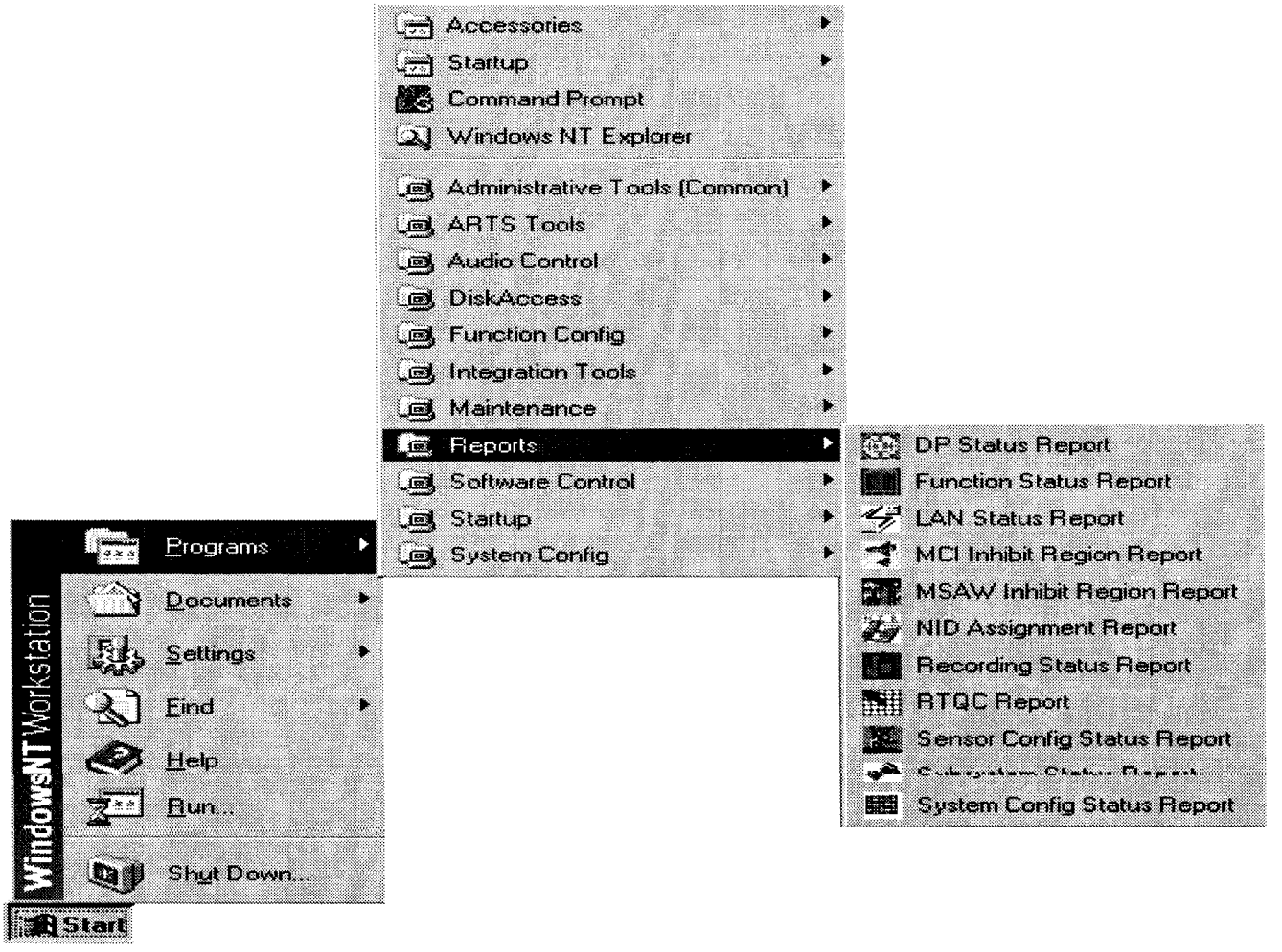


FIGURE 4-l 52. REPORTS GROUP WINDOW

4.7.1 System Config Status Report

The System Config Status Report displays system configuration information (chassis state and peripheral information) for all non-DP chassis.

a. Special Notes: The following information is available for each chassis:

1. SMC — NID, chassis state, LAN status, and status of hard disks, optical disks, floppy disk, WWVB, HSP, PCs, PD-PC Interface Status, echo printers.

2. CP — NID, chassis state, LAN status, and status of hard disks, floppy disk, Inter-facility links, Traffic Management System (TMS), Digital Altimeter Setting Indicators (DASIs).

3. TP — NID, chassis state, LAN status, and status of hard disks, floppy disk, and serial channels.

4. AGW — NID, chassis state, LAN status, and status of hard and floppy disks, and status of configurable processes.

5. RDM — NID, chassis state, LAN status, and status of hard disks and floppy disk.

6. RGW — NID, chassis state, LAN status, hard disk status, floppy disk status, and sensor serial channel status. LAN status for the RGW indicates the status of the RGW network's LAN C and LAN D.

7. This report is updated in real-time.

8. Only the site adapted list of peripherals is displayed.

9. No user modification to this report is available.

b. Menu bar Functions:

File Menu

Exit	Quits the application.

View Menu

Tool Bar	Toggles the tool bar between displayed and hidden.
Status bar	Toggles the Status bar between displayed and hidden.

c. System Config Status Report operation:

1. Click System Config Status Report from Reports Program group (Figure 4-152).

2. Observe System Config Status Report Window (Figure 4-153).

3. Observe all configured chassis identified across the top of the report.

4. Observe a column below each configured chassis.

5. Observe an adapted peripheral item list along the left side of the report.

   (a) Special identifiers followed by a space in this list are:

      (1) "I" indicates Interfacility.

      (2) "T" indicates Traffic Management.

      (3) "D" indicates DASI.

      (4) "S" indicates sensor.

      (5) Numerics following Inter-facility, TMS, DASI, and sensors are identifiers for the respective serial board number and port number of the board. Example: I ZCN 4,0 = an ARTCC facility identified as ZCN whose Inter-facility interface is on serial board 4, port 0.

System Config Status Report

File View Help

	SMC0 0D	SMC1 13	SMC2 1E	CP0 0C	CP1 12	CP2 18	TP0 0B	TP1 11	TP2 17	AGW0 66	AGW1 67	RDM0 21	RDM1 22	RDM2 A2	RDM3 A3	RGW0 FA	RGW1 FB
State	D	A	D	D	A	D	D	A	D	D	D					S	A
LAN A/C [RGW]	-	U			U			U				D	D	D	D	U	U
LAN B/D [RGW]	-	U	-	-	U	-	-	U	-	-	-	D	D	D	D	U	U
D0	-	U	-	-	U	-	-	U	-	-	-	D	D	D	D	U	U
D1	-	U	-	-	U	-	-	U	-	-	-	D	D	D	D		
FD	-	D	-	-	D	-	-	D	-	-	-	D	D	D	D	D	D
OP0	-	D	-														
OP1	-	D	-														
WWVB	-	D	-														
HSP	-	D	-														
PC a	-	N	-														
PC b	-	SMS	-														
PRN a	-	D	-														
PRN b	-	D	-														
PD-PC a	-	U	-														
PD-PC b	-	U	-														
I ZCN 4, 0				-	D	-											
I ZCR 4, 1				-	D	-											
I UDS 4, 2				-	D	-											
T TMS 4, 4				-	D	-											
D DASI1 4,7				-	D	-											
S JFK 5, 0							-	U	-							U	U
S JFK 5, 1							-	U	-							U	U
S JFK 5, 2							-	U	-							U	U
S JFK 5, 3							-	U	-							U	U
S EWR 6, 0							-	D	-							D	D
S EWR 6, 1							-	D	-							D	D
S EWR 6, 2							-	D	-							D	D
S EWR 6, 3							-	D	-							D	D
S ISP 7, 0							-	D	-							D	D
S ISP 7, 1							-	D	-							D	D
S ISP 7, 2							-	D	-							D	D

For Help, press F1

FIGURE 4-I 53. SYSTEM CONFIG STATUS REPORT WINDOW (PART 1 OF 2)

(b) The identifiers following PC, PRN, and PD-PC are:

(1) "a" reflects the status of the connections from SMC-PC 1, 3, and 5.

(2) "b" reflects the status of the connections from SMC-PC 2, 4, and 6.

(c) Use scroll bar at right to scroll adapted peripheral item list (Figure 4-153A).

System Config Status Report

File View Help

	SMC0 0D	SMC1 13	SMC2 1E	CP0 0C	CP1 12	CP2 18	TP0 0B	TP1 11	TP2 17	AGW0 66	AGW1 67	RDM0 21	RDM1 22	RDM2 A2	RDM3 A3	RGW0 FA	RGW1 FB
S ISP 7, 1							-	D	-							D	D
S ISP 7, 2							-	D	-							U	U
S ISP 7, 3							-	D	-							D	D
S HPN 8, 0							-	D	-							D	D
S HPN 8, 1							-	D	-							D	D
S HPN 8, 2							-	D	-							U	U
S HPN 8, 3							-	D	-							D	D
S SWF 9, 0							-	D	-							D	D
S SWF 9, 1							-	U	-							U	U
S SWF 9, 2							-	D	-							D	D
S SWF 9, 3							-	D	-							D	D
S AC1 10, 0							-	D	-							D	D
S AC1 10, 1							-	D	-							D	D
S AC1 10, 2							-	U	-							U	D
S AC1 10, 3							-	D	-							D	D
S AC2 11, 0							-	D	-							D	D
S AC2 11, 1							-	D	-							D	D
S AC2 11, 2							-	D	-							D	D
S AC2 11, 3							-	D	-							D	D
S QVH 12, 0							-	D	-							D	D
S QVH 12, 1							-	D	-							D	D
S QVH 12, 2							-	D	-							D	D
S QIE 12, 3							-	D	-							D	D
S QIE 12, 4							-	D	-							D	D
S QIE 12, 5							-	D	-							D	D
S QPL 12, 6							-	D	-							D	D
DPS_FMA										D	D						
ANOM1										D	D						
ANOM2										D	D						
ANOM3										D	D						
ANOM4										D	D						
FAST										D	D						

For Help, press F1

FIGURE 4-153A. SYSTEM CONFIG STATUS REPORT WINDOW (PART 2 OF 2)

6. Each column has a configured list, selected from the item list, and status (colored) for each chassis:

   (a) Red indicates down.

   (b) Green indicates up.

   (c) Yellow indicates standby.

(d) Light green indicates the status of this SMC-PC.

(e) Pink indicates off-line.

(f) Gray indicates configured item, but not available.

7. Within each configured item, cross-referenced by chassis and item list, observe an alpha character(s):

(a) "D" indicates down.

(b) "U" indicates up.

(c) "S" indicates standby.

(d) "N" indicates Non-SMS.

(e) "SMS" indicates SMS.

(f) "0" indicates off-line.

(g) "A" indicates active.

8. The data displayed in the System Config Status Report window is updated periodically as new information is received at the SMC-PC. If no status is available, the No Status dialog (Figure 4-154) is displayed.

9. Select File/Exit to exit.

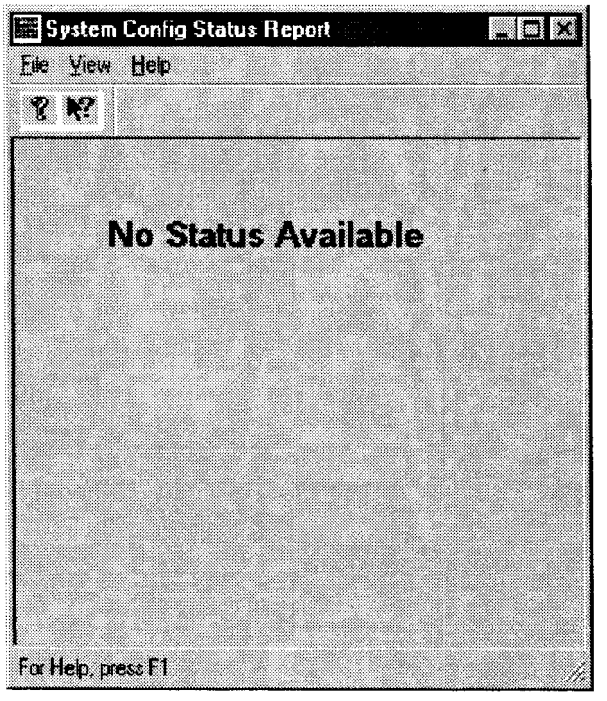


FIGURE 4-I 54. SYSTEM CONFIG STATUS REPORTS — NO DATA AVAILABLE DIALOG WINDOW

4.7.2 LAN Status Reports

The LAN Status Reports displays a table containing the status of the LAN (up, down, or not configured) for each network device. This status information is updated periodically as new information is received at the SMC-PC.

a. Special Notes:

1. This report is updated in real-time.

b. Menu bar Functions:

File Menu

Exit	Quits the application.

View Menu

Toolbar	Toggles the Toolbar between displayed and hidden.
Status bar	Toggles the status bar between displayed and hidden.

c. LAN Status Reports operation:

1. Click LAN Status Reports (Figure 4-152).
2. Observe the LAN Status Reports window (Figure 4-155).

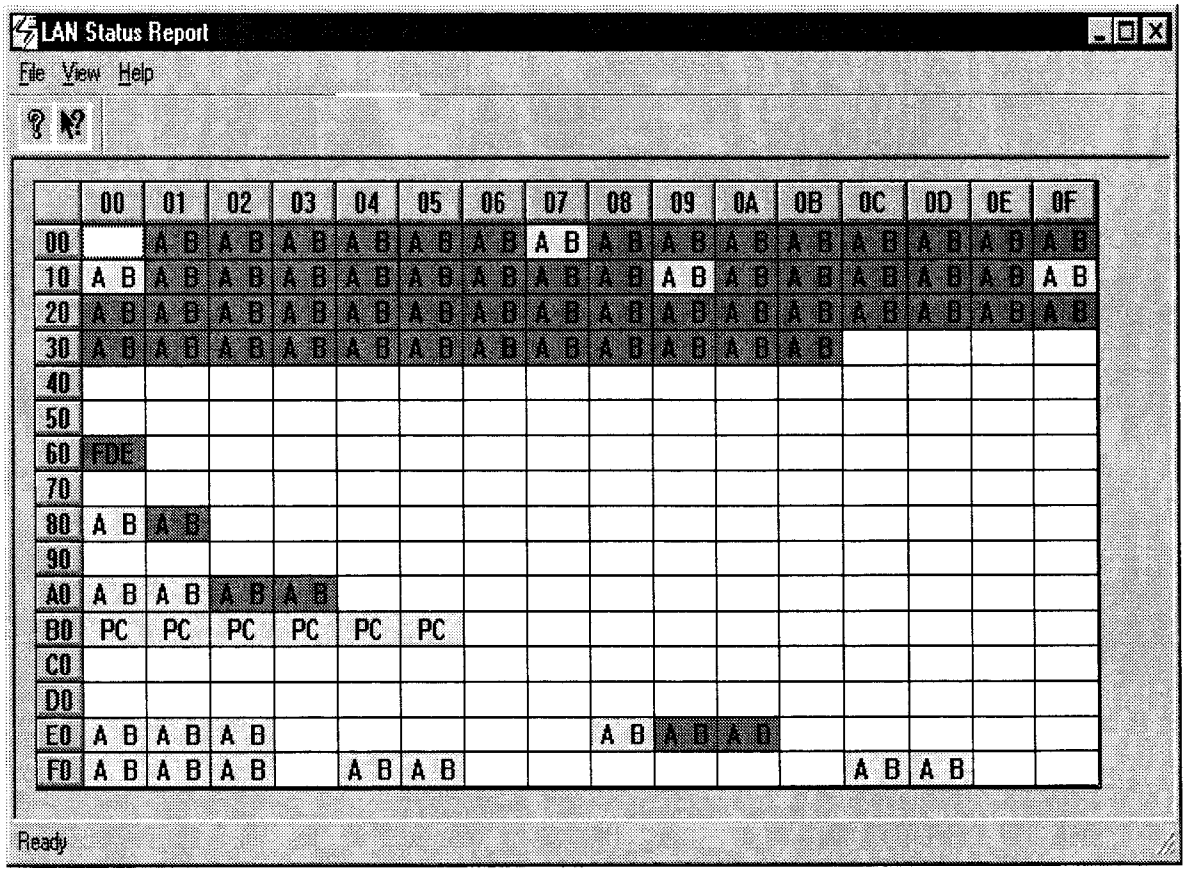


FIGURE 4-I 55. LAN STATUS REPORTS WINDOW

3. Observe a grid with 16 horizontal identifiers of 00 — OF (hexadecimal) and 16 vertical identifiers of 00 — FO (hexadecimal).

4. Each configured chassis has an A and B to denote trunks of the operational/maintenance LAN.

   (a) The trunks may be individually enabled/disabled based on the status of the LAN Interface card(s).

5. Each configured chassis is color coded to denote LAN connectivity status:

   (a) Green is enabled, red is disabled.

   (b) White is not configured.

4.7.3 NID Assignment Report

The NID Assignment Report displays a table of NID assignment ranges for the FDP, ACD, LBP, RDM, AGWs, SG, SMC, PC, CP, TP, and FDE.

a. Special Notes:

   1. The table of NID assignments is site-adaptable.

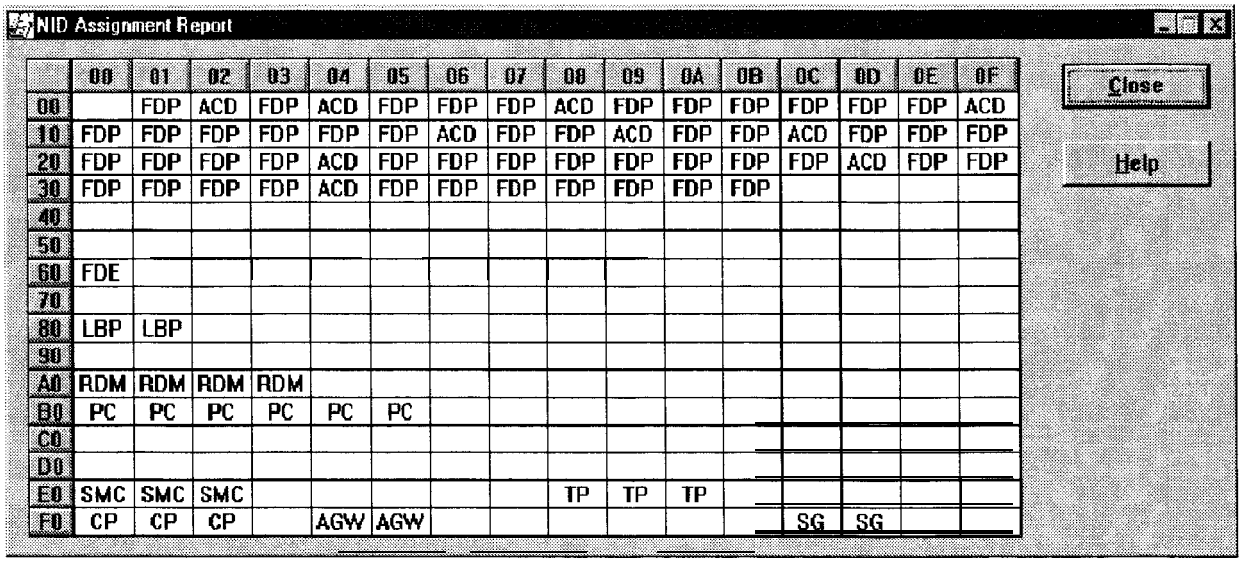
   2. There is no NID assignment of 00 or FF.

   3. No user modification to this report is available.

b. NID Assignment Report operation:

   1. Click NID Assignment Report (Figure 4-152).

   2. Observe NID Assignment Report window (Figure 4-156).



	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
00		FDP	ACD	FDP	ACD	FDP	FDP	FDP	ACD	FDP	FDP	FDP	FDP	FDP	FDP	ACD
10	FDP	FDP	FDP	FDP	FDP	FDP	ACD	FDP	FDP	ACD	FDP	FDP	ACD	FDP	FDP	FDP
20	FDP	FDP	FDP	FDP	ACD	FDP	FDP	FDP	FDP	FDP	FDP	FDP	FDP	ACD	FDP	FDP
30	FDP	FDP	FDP	FDP	ACD	FDP	FDP	FDP	FDP	FDP	FDP	FDP				
40																
50																
60	FDE															
70																
80	LBP	LBP														
90																
A0	RDM	RDM	RDM	RDM												
B0	PC	PC	PC	PC	PC	PC										
C0																
D0																
E0	SMC	SMC	SMC						TP	TP	TP					
F0	CP	CP	CP		AGW	AGW							SG	SG		

FIGURE 4-156. NID ASSIGNMENT REPORT WINDOW

3. Observe a grid with 16 horizontal identifiers of 00 — OF (hexadecimal) and 16 vertical identifiers of 00 — FO (hexadecimal).

4. The chassis identifiers is located at the junction of the grid location.

5. An example to determine NID address of SMCO in the figure below; locate the SMC(s) on the grid.

   (a) Add its vertical grid number (EO) and its horizontal grid number(s) (00 — 02) together (E0+03 = E3). SMC1 is E4, SMC2 is E5.

6. Locate any adapted chassis and determine its NID address.

7. Select Close to exit.

4.7.4 DP Status Reports

The DP Status Reports displays the status of all keyboards and displays in the ARTS system.

a. Special Notes:

1. Also included in this report is the display number, NID, associated sensor, plus the subset, symbol, and status for each keyboard associated with the display.

2. For displays in the Mosaic mode there is an indicator in the sensor designation (ACDs only).

3. The report is displayed in real-time.

4. No user modification to this report is available.

b. Menu bar Functions:

File Menu

Exit	Quits the application.

View Menu

Toolbar	Toggles the Toolbar between displayed and hidden.
Status bar	Toggles the Status bar between displayed and hidden.
ACD	Selects the ACD displays and keyboards.
FDAD	Selects the FDAD displays and keyboards.
LBP	Selects the LBP displays and keyboards.
RBDM	Selects the Remote displays and keyboards.

c. Toolbar Functions:

A Button	Selects the ACD displays and keyboards.
F Button	Selects the FDAD displays and keyboards.

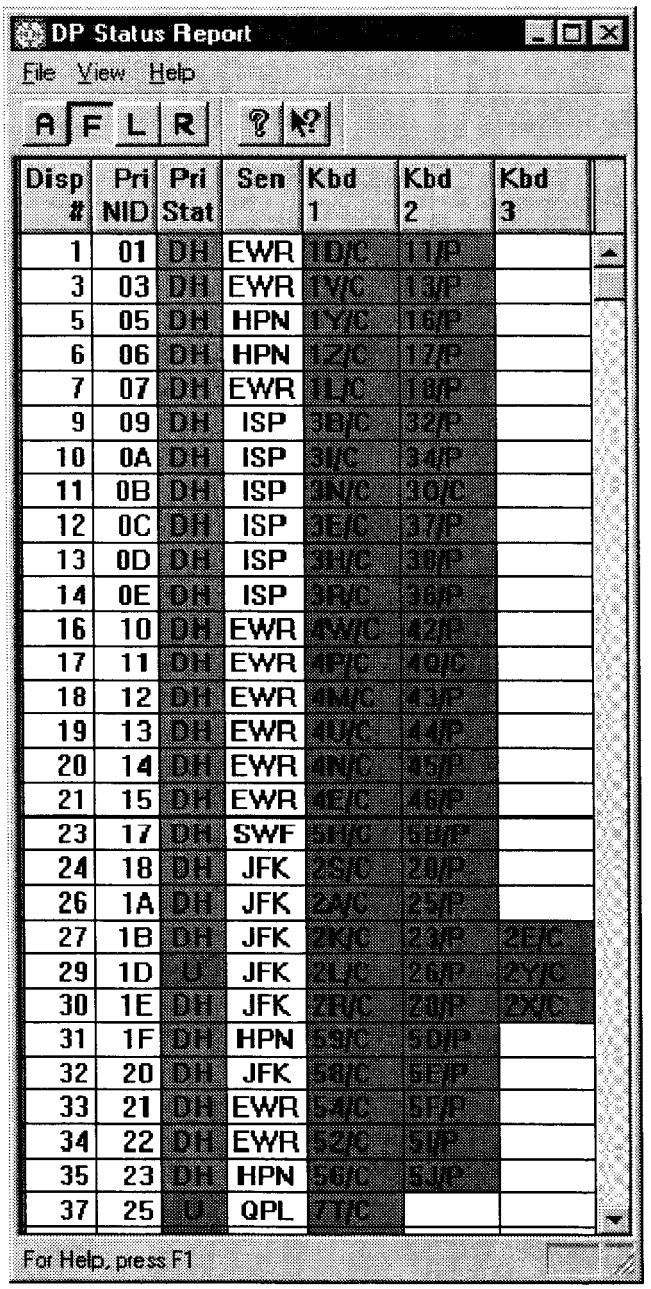
L Button — Selects the LBP displays and keyboards.

R Button — Selects the Remote displays and keyboards.

d. DP Status Reports operation:

1. Click DP Status Reports (Figure 4-l 52).

2. Observe the DP Status Reports window (Figure 4-157).



Disp #	Pri NID	Pri Stat	Sen	Kbd 1	Kbd 2	Kbd 3
1	01	DH	EWR	1D/C	11/P	
3	03	DH	EWR	1V/C	13/P	
5	05	DH	HPN	1Y/C	16/P	
6	06	DH	HPN	1Z/C	17/P	
7	07	DH	EWR	1L/C	18/P	
9	09	DH	ISP	3B/C	32/P	
10	0A	DH	ISP	3U/C	34/P	
11	0B	DH	ISP	3N/C	30/C	
12	0C	DH	ISP	3E/C	37/P	
13	0D	DH	ISP	3H/C	38/P	
14	0E	DH	ISP	3R/C	36/P	
16	10	DH	EWR	4W/C	42/P	
17	11	DH	EWR	4P/C	40/C	
18	12	DH	EWR	4M/C	43/P	
19	13	DH	EWR	4U/C	44/P	
20	14	DH	EWR	4N/C	45/P	
21	15	DH	EWR	4E/C	46/P	
23	17	DH	SWF	5H/C	5B/P	
24	18	DH	JFK	2S/C	20/P	
26	1A	DH	JFK	2A/C	25/P	
27	1B	DH	JFK	2K/C	23/P	2E/C
29	1D	U	JFK	2L/C	26/P	2Y/C
30	1E	DH	JFK	2R/C	28/P	2X/C
31	1F	DH	HPN	53/C	5D/P	
32	20	DH	JFK	54/C	5E/P	
33	21	DH	EWR	54/C	5F/P	
34	22	DH	EWR	52/C	5U/P	
35	23	DH	HPN	56/C	5J/P	
37	25	U	QPL	7T/C		

For Help, press F1

FIGURE 4-l 57. DP STATUS REPORT WINDOW

3. Select View/FDAD or click the F button in the Toolbar.

4. Observe all the site adapted FDAD displays are listed in columns identified as Disp (Display) #, Pri (Primary) NID, Pri Stat (Status), Sen (Sensor), and Kbd (Keyboard) 1, 2, and 3. (Figure 4-157).

   (a) Display numbers are listed in decimal.

   (b) Primary NID numbers are listed in hexadecimal.

   (c) Primary status identifies Up (U), Up in Training mode (UT), Down due to Bad Version (DV), Down due to Heartbeat (DH), Down due to Keyboard entry (DK).

      (1) Green indicates up, red down.

   (d) Sensor identifies which sensor this display is logically connected to.

   (e) Keyboard identifies the controller position number, type of position (C=Controller, S=Supervisory, M=Maintenance, P=Paired), and status (green is up, red is down) for up to three keyboards associated with an FDAD.

5. Select View/LBP or click the L button from the Toolbar.

6. Observe all site-adapted LBP displays are listed in columns identified as Disp (Display) #, Pri (Primary) NID, Pri Stat (Status), Sen (Sensor), and Kbd (Keyboard) 1, 2, and 3. (Figure 4-157A).

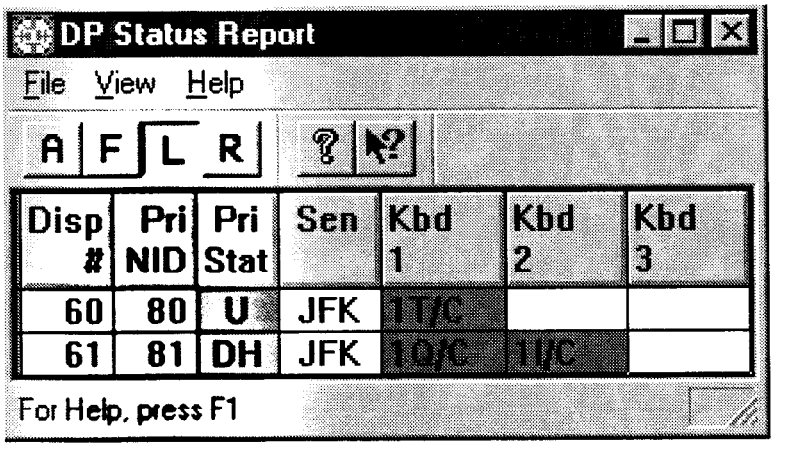


FIGURE 4-l 57A. DP STATUS REPORT WINDOW — LBP

   (a) Display numbers are listed in decimal.

   (b) Primary NID numbers are listed in hexadecimal.

   (c) Primary status identifies Up (U), Up in Training mode (UT), Down due to Bad Version (DV), Down due to Heartbeat (DH), Down due to Keyboard entry (DK).

      (1) Green indicates up, red down.

(d) Sensor identifies which sensor this display is logically connected to.

(e) Keyboard identifies the controller position number, type of position (C=Controller, S=Supervisory, M=Maintenance, P=Paired), and status (green is up, red is down) for up to three keyboards associated with a Digital Bright Radar Indicator Tower Equipment (DBRITE).

7. Select View/RDBM or click the R button from the Toolbar.

8. Observe all site-adapted RDBM displays is listed in columns identified as Disp #, Pri NID, Pri Stat, Sec (Secondary) NID, Sec Stat, Sen, and Kbd 1. (Figure 4-157B).

DP Status Report

File View Help

A F L R

Disp #	Pri NID	Pri Stat	Sec NID	Sec Stat	Sen	Kbd 1	Kbd 2	Kbd 3
62	A0	DH	A1	DH	JFK	2W/C	29/C	
63	A2	DH	A3	DH	JFK	27/C		
64	A2	DH	A3	DH	EWR	4Z/C		
65	A2	DH	A3	DH	EWR	49/C		
66	A2	DH	A3	DH	HPN	1W/C		
67	A0	DH	A1	DH	ISP	33/C	35/C	
68	A2	DH	A3	DH	EWR	4G/C	4J/C	
69	A2	DH	A3	DH	SWF	5Z/C		
70	A0	DH	A1	DH	AC1	7A/C		
71	A0	DH	A1	DH	AC1	7B/C		
72	A2	DH	A3	DH	AC1	7C/C		
73	A2	DH	A3	DH	AC1	7D/C		
74	A2	DH	A3	DH	AC1	7E/C		
75	A2	DH	A3	DH	AC1	7F/C		
76	A2	DH	A3	DH	AC1	7G/C		
77	A2	DH	A3	DH	AC1	7H/C		
78	A2	DH	A3	DH	AC1	7I/C		
79	A2	DH	A3	DH	AC1	7J/C		
80	A2	DH	A3	DH	AC1	7O/C		
81	A0	DH	A1	DH	AC2	7R/C		
82	A2	DH	A3	DH	AC2	5S/C		
83	A2	DH	A3	DH	AC2	5T/C		
84	A2	DH	A3	DH	AC2	7U/C		
85	A2	DH	A3	DH	AC2	7V/C		
86	A2	DH	A3	DH	AC2	7W/C		
87	A3	DH	A2	DH	AC2	7X/C		
88	A2	DH	A3	DH	AC2	7Y/C		
89	A3	DH	A2	DH	AC2	7Z/C		
90	A2	DH	A3	DH	AC2	5A/C		

For Help, press F1 NUM

FIGURE 4-157B. DP STATUS REPORT WINDOW — RDBM

(a) Display numbers are listed in decimal.

(b) Primary NID numbers are listed in hexadecimal.

(c) Primary status identifies Up (U), Up in Training mode (UT), Down due to Bad Version (DV), Down due to Heartbeat (DH), Down due to Keyboard entry (DK).

(1) Green indicates up, red down.

(d) Secondary NID identifies the alternate device's NID number for this display.

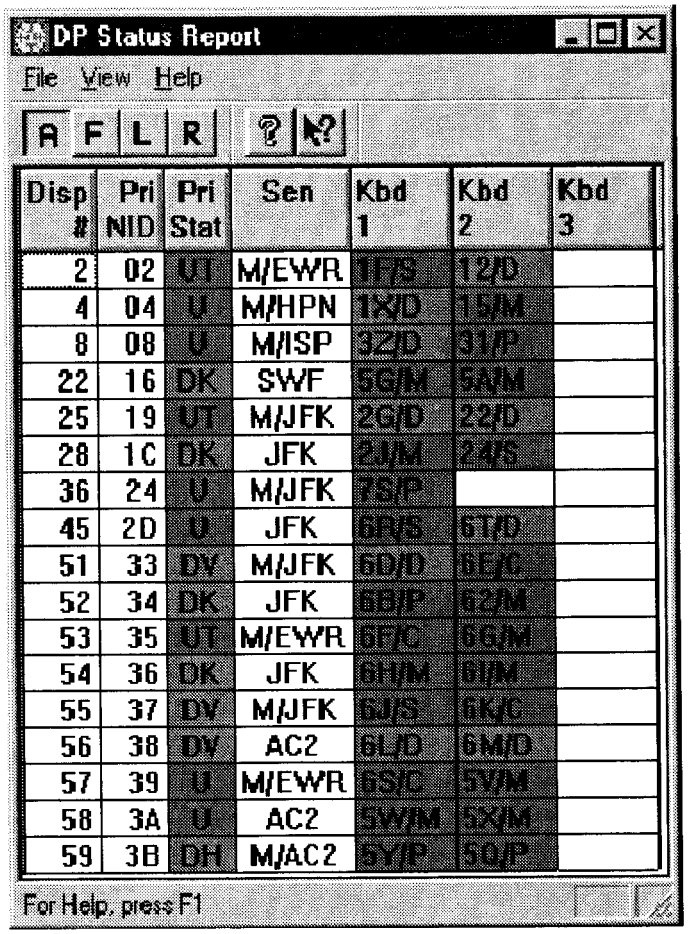
(e) Secondary Status identifies the Status ((U)p + (T)raining or (D)own + (V)ersion, (H)eartbeat, or (K)eyboard) of the display.

(f) Sensor identifies which sensor this display is logically connected to.

(g) Keyboard identifies the controller position number, type of position (C=Controller, S=Supervisory, M=Maintenance, P=Paired), and status (green is up, red is down) for up to three keyboards associated with a DBRITE display.

9. Select View/ACD or click the A button in the Toolbar.

10. Observe all the site adapted ACD displays are listed in columns identified as Disp (Display)#, Pri (Primary) NID, Pri Stat (Status), Sen (Sensor), Kbd (Keyboard) 1, 2, and 3. (Figure 4-157C).



Disp #	Pri NID	Pri Stat	Sen	Kbd 1	Kbd 2	Kbd 3
2	02	UT	M/EWR	1F/S	12/D	
4	04	U	M/HPN	1X/D	15/M	
8	08	U	M/ISP	3Z/D	31/P	
22	16	DK	SWF	5G/M	5A/M	
25	19	UT	M/JFK	2C/D	22/D	
28	1C	DK	JFK	2J/M	24/S	
36	24	U	M/JFK	7S/P		
45	2D	U	JFK	6R/S	6T/D	
51	33	DV	M/JFK	6D/D	6E/C	
52	34	DK	JFK	6B/P	62/M	
53	35	UT	M/EWR	6F/C	66/M	
54	36	DK	JFK	6H/M	6I/M	
55	37	DV	M/JFK	6J/S	6K/C	
56	38	DV	AC2	6L/D	6M/D	
57	39	U	M/EWR	6S/C	5V/M	
58	3A	U	AC2	5W/M	5X/M	
59	3B	DH	M/AC2	5Y/P	5Q/P	

FIGURE 4-I 57C. DP STATUS REPORT WINDOW — ACD

(a) Display numbers are listed in decimal.

(b) Primary NID numbers are listed in hexadecimal.

(c) Primary status identifies Up (U), Up in Training mode (UT), Down due to Bad Version (DV), Down due to Heartbeat (DH), Down due to Keyboard entry (DK).

(1) Green indicates up, red down.

(d) Sensor identifies which sensor this display is logically connected to, or Mosaic indicator (M/).

(e) Keyboard identifies the controller position number, type of position (C=Controller, S=Supervisory, M=Maintenance, P=Paired), and status (green is up, red is down) for up to three keyboards associated with an ACD.

(f) LAN C and LAN D indicates the ACD's status (up or down) of the RGW network. Green indicates up, red indicates down.

11. Select File/Exit to exit.b

4.7.5 Function Status Report

The Function Status Report displays the status and settings of ARTS system functions.

a. Special Notes:

1. The report is a multi-table of results from selected functions which were selected and/or enabled/inhibited in other windows (i.e., Function Config Group).

2. The report is displayed in real-time.

3. No user modification of this window is available.

4. The following functional area is displayed in this report:

(a) Function Status

(b) Altimeter

(c) Inter-facility Print **Classes**

(d) Intersensor CA settings

(e) PC Message **Classes**

(f) FAST Status

(g) Inter-facility Processing

(h) GSI/ATIS

(i) Entry/Exit Fix.

b. Menu bar Functions:

File Menu

Exit	Quits the application.

View Menu

Toolbar	Toggles the Toolbar between displayed and hidden.

Status bar Toggles the Status bar between displayed and hidden.

c. Function Status Reports operation:

1. Click Function Status Reports (Figure 4-152).

2. Observe the Function Status Reports window (Figure 4-158).

3. Observe several titled lists.

(a) Function Status list:

(1) Time and Date Source status is WWVB or INPUT

(2) The remaining items status is colored red with D(isabled) or green with E(nabled).

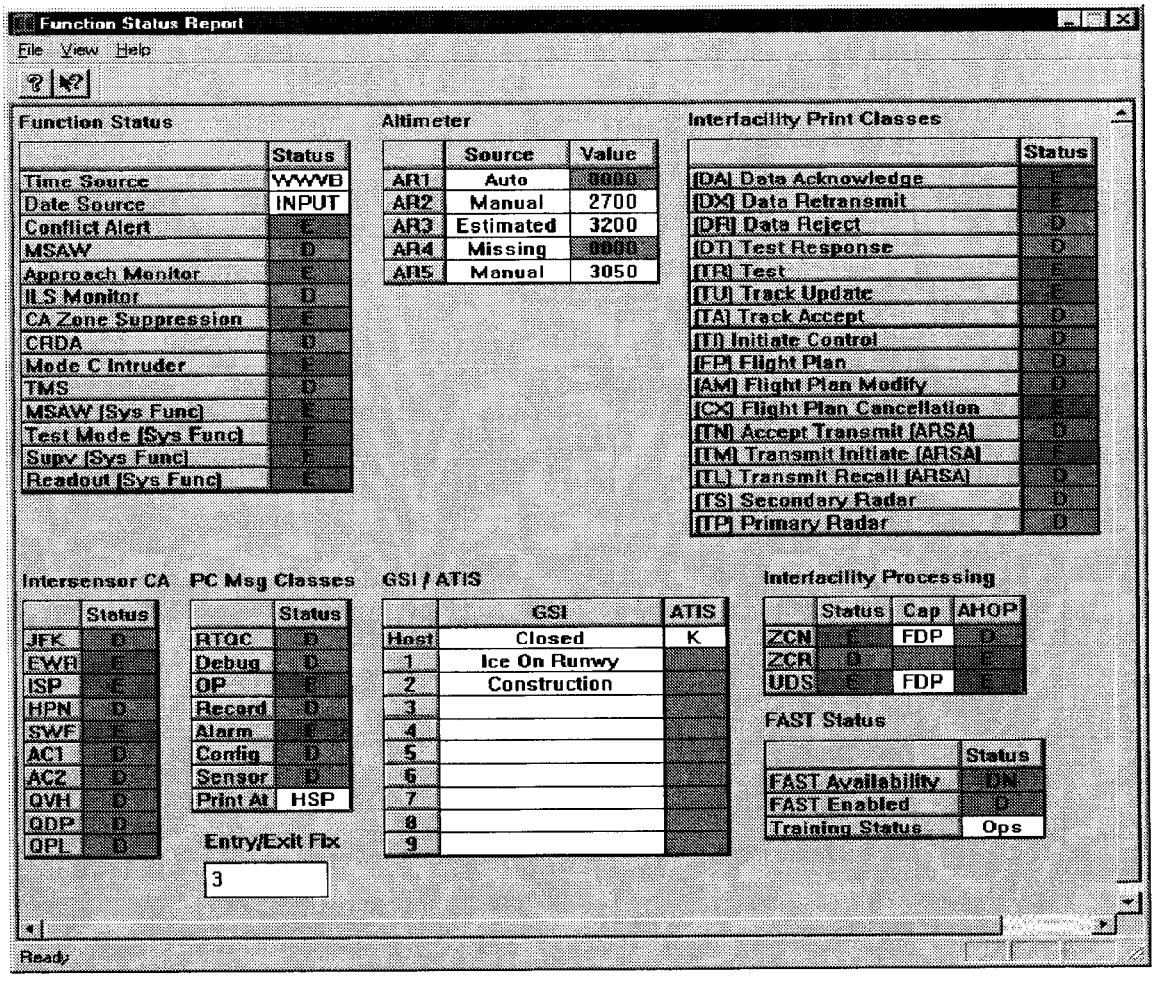


FIGURE 4-I 58. FUNCTION STATUS REPORTS WINDOW

(b) Altimeter:

(1) The list reflects the results of any changes/modifications made to the Altimeter list when System Config/System Settings/Altimeter tab is selected.

(c) Inter-facility Print Classes:

(1) The list reflects the results of any changes/modification made to the Inter-facility Print when Function Config/Interfacility Config is selected.

(2) The status of the items in the list is colored red with D(isabled) or green with E(nabled).

(d) Intersensor CA:

(1) The list reflects the results of any changes/modification made to the Interfacility Print when Function Config/Alert Config is selected.

(2) The status of the items in the list is colored red with D(isabled) or green with E(nabled).

(e) PC Msg Classes:

(1) The list reflects the results of any changes/modification made to the System Monitor Message Classes when Function Config/System Monitor Config is selected.

(2) The status of the items in the list is colored red with D(isabled) or green with E(nabled).

(3) The Print At item in the list is PC (local printer) or HSP (High Speed Printer).

(f) FAST Status:

(1) The list reflects the results of any changes/modification made to FAST availability and status, and training status.

(2) The status of the items in the list is colored red with D(isabled) or green with E(nabled).

(g) Inter-facility Processing:

(1) The list reflects the results of any changes/modification made to the Inter-facility Processing when Function Config/Interfacility Config is selected.

(2) An indication of which ARTCC(s) is interfaced to the ARTS system.

(3) The status of the items in the list is colored red with D(isabled) or green with E(nabled).

(4) The status of "Cap" depends on whether FDP/RDP (Flight Data Processing or Radar Data Processing).

(5) The status of Automatic Handoff Processing (AHOP) is colored red with D(isabled) or green with E(nabled).

(h) GSI/ATIS:

(1) The list reflects the results of any changes/modifications made to the GSI/ATIS list when System Config/System Settings/ATIS/GSI tab is selected.

(i) Entry/Exit Fix:

(1) This numeric identifies which Entry/Exit fix is currently being used on the DP displays from Entry/Exit Fix Configuration.

4.7.6 Sensor Config Status Report

The Sensor Config Status Report displays sensor-related information.

a. Special Notes:

1. The report is displayed in real-time.
2. No user modification of this window is available.

b. Menu bar Functions:

File Menu

Exit	Quits the application.

View Menu

Toolbar	Toggles the Toolbar between displayed and hidden.
Status bar	Toggles the Status bar between displayed and hidden.

c. Sensor Config Status Report operation:

1. Click Sensor Config Status Report (Figure 4-l 52).
2. Observe the Sensor Config Status Reports window (Figure 4-l 59).

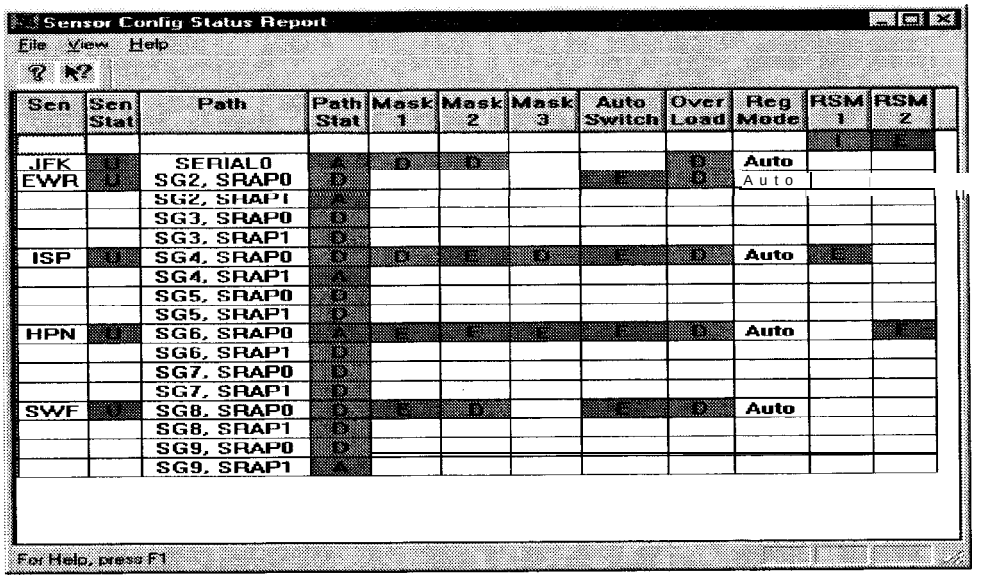


FIGURE 4-l 59. SENSOR CONFIG STATUS REPORTS WINDOW

3. Observe information pertaining to each configured sensor in the system. The Mask 1, 2, 3, auto switch, and overload will reflect changes made in the System Config/Sensor Config function.

(a) Sensor Status:

(1) The status of the sensors in the list is colored red with D(own), green with U(p), or yellow with interfaces conditionally up and at least one CQARS threshold not met (C).

(b) Path:

(1) The path identifies which Sensor Gateway (SGx), SRAPx or Serial path is being used for a specific sensor.

(c) Path Stat:

(1) The status of the sensors in the list is colored red with D(own), green with A(ctive), or yellow with AV(ai)L(able).

(d) Mask 1, 2, 3:

(1) The status of individual masks for a sensor is colored red with D(isabled) or green with E(nabled), gray if not selected, or white if not configured.

(e) Auto Switch:

(1) The status of automatic switching for a sensor is colored red with D(isabled) or green with E(nabled), gray if not selected, or white if not configured.

(f) Over Load:

(1) The status of over load for a sensor is colored red with D(isabled) or green with E(nabled).

(g) Reg Mode:

(1) The status of the registration mode (RTQC) is identified as Man(ual) or Auto(matic).

(h) RSM Status:

(1) The status of the RSMs is indicated as green (Enabled) or Red (inhibited). The overall status of each RSM is indicated in the first (unmarked) row in the sensor Config Status Report table.

4. Clicking on the report area of a sensor will bring up a secondary screen which contains the CQARS information (QUICK ANALYSIS OF RADAR SITE). Some of the information is relevant only to short-range sensors, while other information is relevant only to long-range sensor. Irrelevant information is not displayed.

(a) The title bar gives the name of the sensor, the start and end times, and the total number of scans in the report.

(b) The upper left corner shows a number of thresholds and their current status. The "Measurement" column gives the name of the threshold. The "Threshold" column gives the threshold value and an indication of whether the threshold is an upper bound ("<") or a lower bound (">"). The "Current" column gives the current value and an indication of whether the value is within range (green) or out of limit (red).

(c) The upper right corner shows the inter-sensor link error statistics for each pair of sensors. One sensor in the pair is the one shown in the title bar. The "Inter-Sensor" column shows the second sensor in the pair. The "Threshold" column shows the link error threshold in NM. The "Avg Dist-NM" column shows the average distance in NM. The "Samples" column shows number of samples in the average.

(d) Below the threshold section there are target counts broken down by categories. "RR" indicates radar-reinforced. "BCN ONLY" indicates beacon-only. "RDR ONLY"

indicates radar-only. Radar-only is further broken down into correlated and uncorrelated returns.

(e) Beside the target counts are track counts broken down by categories. Each category has a total new tracks and total deleted tracks. These totals are subdivided into radar-only, beacon-only, and radar-reinforced tracks.

(f) The "BCN HIT COUNT" entry shows the average beacon hit count.

(g) The "ALT CHG > 700" entry shows the number of instances in which consecutive returns had an altitude difference of 700 feet or more.

(h) The bottom of the window shows target attributes for ASR-9 short-range sensors (Figure 4-159A). The ARTS IIIA Quality is broken down into quality levels from 0 to 7, with percentages for each level. The Target Confidence attribute is broken down into levels from 0 to 5, with percentages for each level. The Target Quality level is broken down into levels from 0 to 3, with percentages for each level. The Target Eligibility is broken down into levels from 0 to 3, with percentages for each level.

Sensor EWR Start 9:00 End 9:05 Scans 270

Measurement	Threshold	Current		Inter-Sensor	Threshold	Avg Dist-NM	Samples
BCN BLIP/SCAN	>95%	98		ISP	0.20	0.05	200
RDR BLIP/SCAN	>90%	94		HPN	0.20	0.20	210
BCN RTQC	>95%	85		SWF	0.20	0.30	220
RDR RTQC	>95%	99		AC1	0.20	0.40	230
MODE 3/A VALID	>90%	97		AC2	0.20	0.50	240
MODE C VALID	>90%	95		QVH	0.30	1.00	250
RR BCN	>90%	83					
BCN SPLITS	<10%	2					
RDR SPLITS	<10%	3					
3/A ZERO CODES	<10%	2					
TOTAL TARGETS	460				NEW	DELETED	
[illegible]	[illegible]			TRACKS	450	540	
BCN ONLY	110			RR BCN	140	170	
RDR ONLY	250			BCN ONLY	150	180	
CORRELATED	120			RDRONLY	160	190	
UNCORRELATED	130						
BCN HIT COUNT	50			ALT CHG > 700	260		
		ASR-9	TGT	ATTRIBUTES			
ARTS IIIA QUALITY		CONFIDENCE		QUALITY		ELIGIBILITY	
QUAL 0	0%	CONF 0	0%	QUAL 0	0%	ELIG 0	0%
QUAL 1	1%	CONF 1	2%	QUAL 1	3%	ELIG 1	4%
QUAL 2	2%	CONF 2	4%	QUAL 2	6%	ELIG 2	8%
QUAL 3	3%	CONF 3	6%	QUAL 3	9%	ELIG 3	12%
QUAL 4	4%	CONF 4	8%				
QUAL 5	5%	CONF 5	10%				
QUAL 6	6%						
QUAL 7	7%						

FIGURE 4-159A. CQARS SHORT RANGE REPORT

(i) Long-range sensors (Figure 4-159B) show the average beacon run length ("ARSR BCN RUN LENGTH") and radar run length ('RDR RUN LENGTH").

Sensor QVH Start 9:00 End 9:05 Scans 270

Measurement	Threshold	Current		Inter Sensor	Threshold	Avg Dist NM	Samples
BCN BLIP/SCAN	>95%	98		ISP	0.30	0.09	200
RDR BLIP/SCAN	>90%	94		HPN	0.30	0.20	210
BCN RTQC	>95%	85		SWF	0.30	0.30	220
RDR RTQC	>95%	99		AC1	0.30	0.40	230
MODE 3/A VALID	>90%	97		AC2	0.30	0.50	240
MODE C VALID	>90%	95		QVH	0.30	1.00	250
RR BCN	>90%	83					
BCN SPLITS	<10%	2					
RDR SPLITS	<10%	3					
3/A ZERO CODES	<10%	2					
BIT 25	<10%	96					
TOTAL TARGETS	460				NEW	DELETED	
RR BCN	100			TRACKS	450	540	
BCN ONLY	110			RR BCN	140	170	
RDR ONLY	250			BCN ONLY	150	180	
				RDR ONLY	160	190	
ARSR BCN RUN LENGTH	5			ALT CHG > 700	260		
ARSR RDR RUN LENGTH	10						

FIGURE 4-159B. CQARS LONG RANGE REPORT

4.7.7 Subsystem Status Reports

Subsystem Status Reports allows the user to request the printing of Subsystem Status Reports.

a. Special Notes:

1. An SMC-PC in the Non-SMS or Host Down state cannot request these reports.
2. The requested report(s) are queued to the printer.
3. No user modification of this window are available.
4. The following reports are available:
   (a) Network Subsystem Status Reports
   (b) Monitor/Control Subsystem Status Reports
   (c) Inter-facility Subsystem Status Reports
   (d) TMS Subsystem Status Reports
   (e) Radar Subsystem Status Reports
   (f) DASI Subsystem Status Reports
   (g) Serial Interface Adapter Subsystem Status Reports
   (h) CTAS Interface Subsystem Status Reports.

b. Subsystem Status Reports operation:

1. Click Subsystem Status Reports (Figure 4-152).
2. Observe the Subsystem Status Reports window (Figure 4-160).

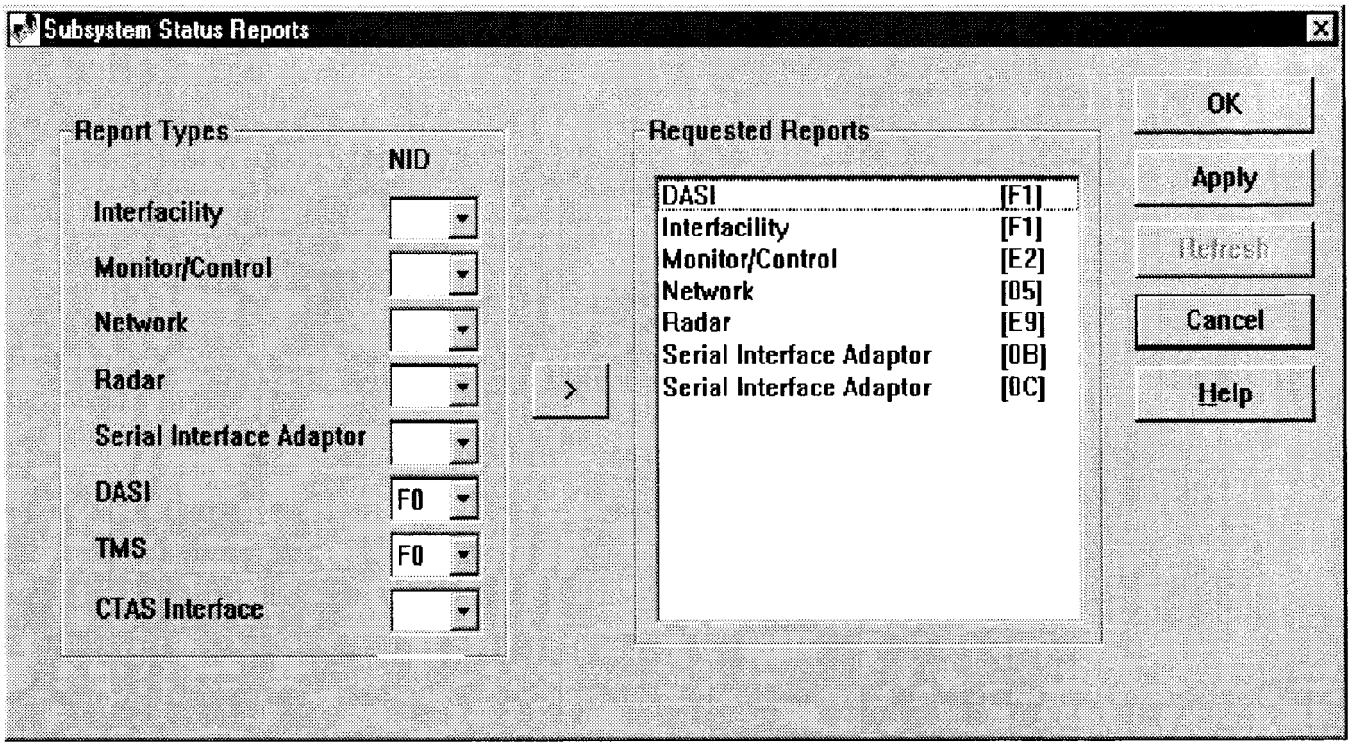


FIGURE 4-I 60. SUBSYSTEM STATUS REPORTS WINDOW

3. To select a Status Report:
   (a) Place the cursor in a box under NID column for a report type and click the box or the down arrow adjacent to the box.
   (b) Observe the box highlights and a pull-down list of configured NIDs for the selected report type appears.
   (c) Click on NID number.
   (d) If only one report is required:
      (1) Click on the > button.
      (2) Observe the Report Type and NID appear in the Requested Reports window.
      (3) Click OK to activate printing of the report and exit or Cancel to exit without printing.
      (4) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.
   (e) If multiple reports of different types is required:
      (1) Perform steps 3(a), (b), and (c) for all report types.
      (2) Click on the > button.

(3) Observe the Report Types and NIDs appear in the Requested Reports window.

(4) Click OK to activate printing of the reports and exit or Cancel to exit without printing.

(5) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

(f) If multiple reports of the same type is required:

(1) Perform steps 3(a), (b), and (c) for a report type.

(2) Click on the > button.

(3) Perform steps 3(a), (b), and (c) for the same report type.

(4) Click on the > button.

(5) Continue until all NIDs for a report type is selected

(6) Click OK to activate printing of the reports and exit or Cancel to exit without printing.

(7) Click Apply to execute the function and not exit and/or Refresh to set selection box to original status.

(g) See the following figures for a sample of each of the Subsystem Status Reports:

(1) Network Subsystem Status Report — Figure 6-2.

(2) Monitor/Control Subsystem Status Report — Figure 6-3.

(3) Inter-facility Subsystem Status Report — Figure 6-6.

(4) TMS Subsystem Status Report — Figure 6-7.

(5) Radar Subsystem Status Reports — Figures 6-4 and 6-5.

(6) DASI Subsystem Status Report — Figure 6-8.

(7) Serial Interface Adapter Subsystem Status Report — Figure 6-l.

4.7.8 Recording Status Report

The Recording Status Report displays recording-related information. This report will reflect changes made.

a. Special Notes: The following information is included in this report.

1. The report is displayed in real-time.

2. No user modification of this window is available.

3. The following information is available in the report:

(a) CDR status (active or inactive)

(b) SMC processor performing CDR recording

(c) Current CDR data destination disk, along with a progress bar indicating percent complete

(d) Status (available or unavailable), current CDR position number being recorded, and last available CDR position for recording for each CDR disk

(e) List of CDR classes for which recording is currently enabled

(f) PD-PC recording status (enabled or disabled).

b. Menu bar Functions:

File Menu

Print	Prints the currently active file.
Print Setup	Allows the user to change settings for next printing.
Exit	Exits the List Directory and closes all associated windows.

View Menu

Toolbar	Toggles the Toolbar between displayed and hidden.
Status bar	Toggles the Status bar between displayed and hidden.

c. Toolbar Functions:

Print Button	Prints the current file.

d. Recording Status Report operation:

1. Click Recording Status Report (Figure 4-152).
2. Observe the Recording Status Reports window (Figure 4-161).
3. Observe boxes which identify:

(a) CDR Status, either Active or Inactive

(b) CDR Processor, either SMCO, SMC1, or SMC2 (depending on configuration)

(c) Destination Disk of CDR extraction data, either Disk 0 or Disk 1

(d) Performance Data Recording Status, either Enabled or Disabled

(e) Enabled CDR Classes

(f) Disk Status of the optical recording media, either available or unavailable (down)

(g) A progress bar indicating percent complete

(h) Current position (address) of where recording is taking place, and the last position (address) on the disk.

(1) Current position indicator and progress bar update in real-time.

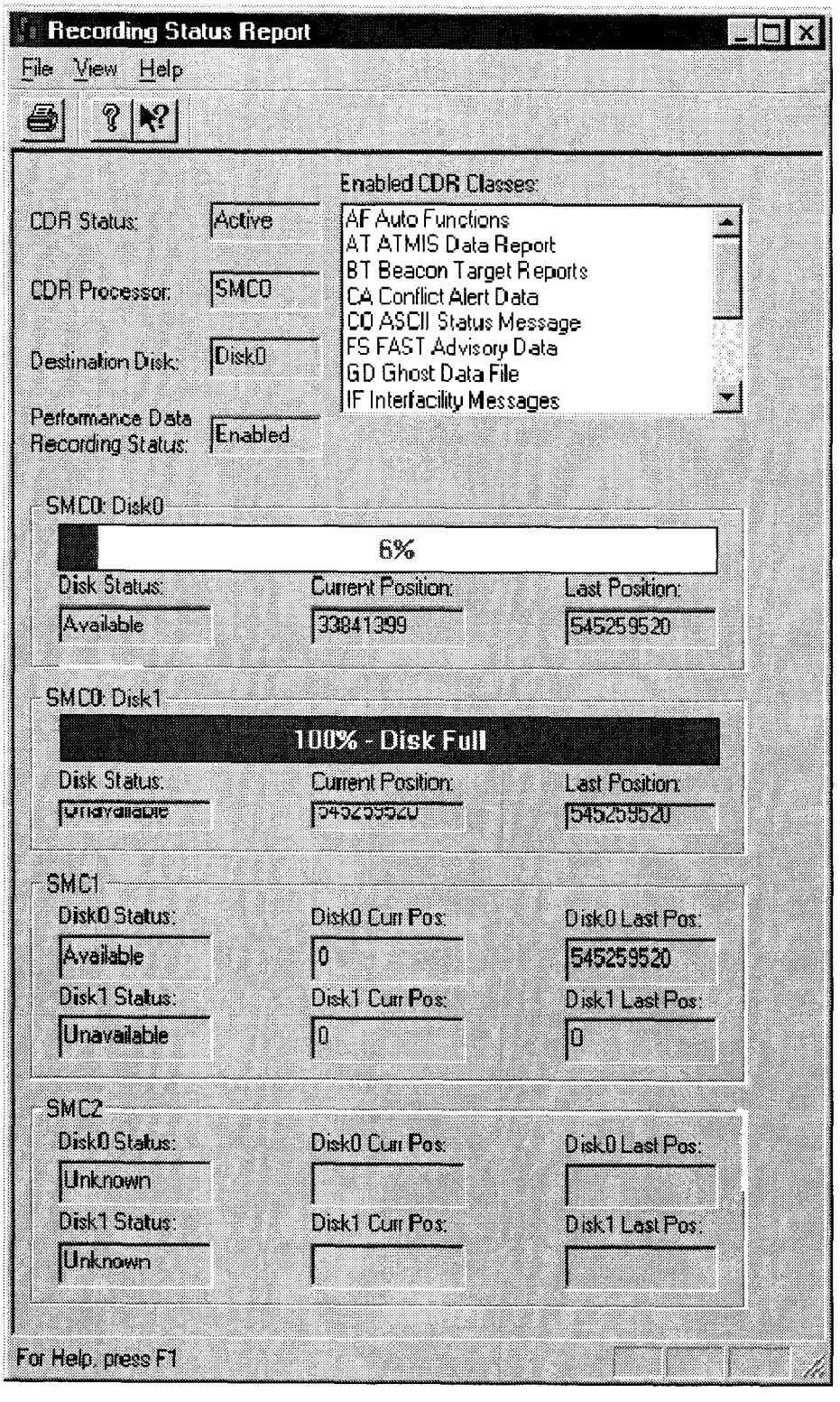


FIGURE 4-I 61. RECORDING STATUS REPORT WINDOW

4.7.9 RTQC Report

RTQC Report allows the user to request the printing of a Real-Time Quality Control (RTQC) Report.

a. Special Notes: The following information for each sensor is included in this report:

1. Time
2. Network Identifier (NID) number
3. RTQC sensor number
4. The signed two-digit and one decimal place azimuth correction factor in Azimuth Change Pulses (ACPs)
5. The signed three decimal place range correction factor in nautical miles
6. An SMC-PC in the Non-SMS or Host Down state cannot request this report.

b. RTQC Report operation:

1. Click RTQC Report (Figure 4-152).
2. Observe the RTQC Report Dialog window (Figure 4-162).

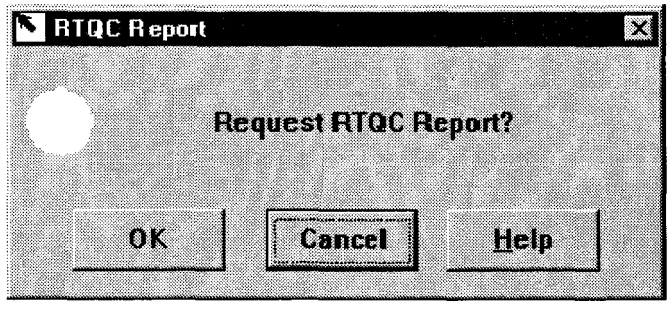


FIGURE 4-162. REQUEST RTQC REPORT DIALOG WINDOW

3. Click on OK to print the RTQC Report on the HSP or local printer and exit or Cancel to exit without printing.
4. Observe at the SMC-PC monitor and printer:

```
mm/dd/yy hh:mm:yy NID# RTQC SENSOR 0 TERMS 0.0 ACP 0.000 NM
mm/dd/yy hh:mm:yy NID# RTQC SENSOR 1 TERMS 0.0 ACP 0.000 NM
mm/dd/yy hh:mm:yy NID# RTQC SENSOR 2 TERMS 0.0 ACP 0.000 NM
mm/dd/yy hh:mm:yy NID# RTQC SENSOR 3 TERMS 0.0 ACP 0.000 NM
mm/dd/yy hh:mm:yy NID# RTQC SENSOR 4 TERMS 0.0 ACP 0.000 NM
mm/dd/yy hh:mm:yy NID# RTQC SENSOR 5 TERMS 0.0 ACP 0.000 NM
mm/dd/yy hh:mm:yy NID# RTQC SENSOR 6 TERMS 0.0 ACP 0.000 NM
mm/dd/yy hh:mm:yy NID# RTQC SENSOR 7 TERMS 0.0 ACP 0.000 NM
mm/dd/yy hh:mm:yy NID# RTQC SENSOR 8 TERMS 0.0 ACP 0.000 NM
mm/dd/yy hh:mm:yy NID# RTQC SENSOR 9 TERMS 0.0 ACP 0.000 NM
```

4.7.10 MCI Inhibit Region Report

The MCI Inhibit Region Report allows the user to request a printout of a list of all keyboards that have an MCI Inhibit Geographical Region(s) enabled, and the MCI Suppressed Region numbers for each keyboard.

a. Special Notes: The following information is included in this report:

1. List of keyboards that have an MCI Inhibit Geographical Region(s) enabled.
2. The MCI Suppressed Region numbers for each keyboard.
3. An SMC-PC in the Non-SMS or Host Down state cannot request this report.

b. MCI Inhibit Region Report operation:

1. Click MCI Inhibit Region Report (Figure 4-152).
2. Observe the Request MCI Inhibit Region Report Dialog window (Figure 4-163).

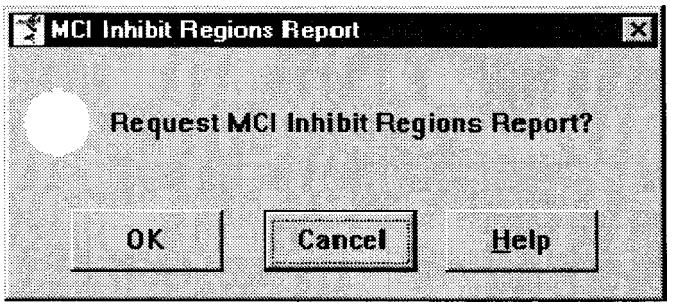


FIGURE 4-I 63. REQUEST MCI INHIBIT REGIONS REPORT DIALOG WINDOW

3. Click on OK to print the MCI Inhibit Region Report on the HSP or local printer and exit or Cancel to exit without printing.
4. Observe at the SMC-PC monitor and printer:

mm/dd/yy hh:mm:ss NID# KYBD ENABLED MCI INHIBIT REGIONS

NONE	No MCI inhibits, or;
CID (1) aa bb cc dd	CID is the controller ID, and
CID (2) hh ii jj kk II	letter pairs represent inhibited region numbers.

4.7.11 MSAW Inhibit Region Report

MSAW Inhibit Region Report allows the user to request a printout of all MSAW General Terrain Monitor (GTM) Regions that is inhibited.

a. Special Notes: The following information is included in this report:

1. A printout of all MSAW GTM regions that is inhibited.
2. An SMC-PC in the Non-SMS or Host Down state cannot request this report.

b. MSAW Inhibit Regions Report operation:

1. Click MSAW Inhibit Regions Report (Figure 4-152).

2. Observe the Request MSAW Inhibit Regions Report Dialog window (Figure 4-164).

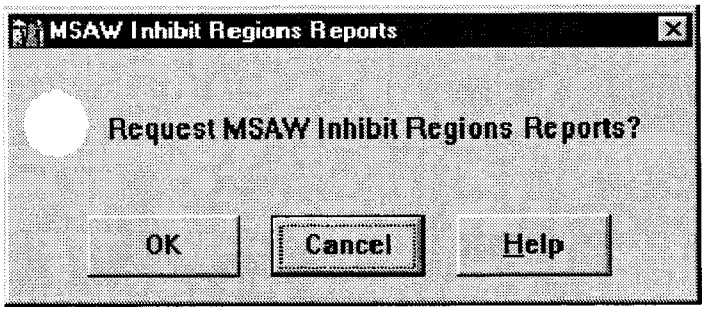


FIGURE 4-l 64. REQUEST MSAW INHIBIT REGIONS REPORT DIALOG WINDOW

3. Click on OK to print the MSAW Inhibit Regions Report on the HSP or local printer and exit or Cancel to exit without printing.

4. Observe at the SMC-PC monitor and printer:

mm/dd/yy hh:mm:ss NID# ENABLED MSAW GTM INHIBIT REGIONS
NONE No MSAW GTM inhibits, or;
aa bb cc dd . . . . . Letter pairs represent inhibited region numbers.

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4.8 START MENU

The Start menu contains several useful Windows NT system applications. Not all functions in this group will be described.

a. Start menu operation:

1. Click the Start button in the Desktop window (Figure 4-4).
2. Observe the Start menu (Figure 4-165).

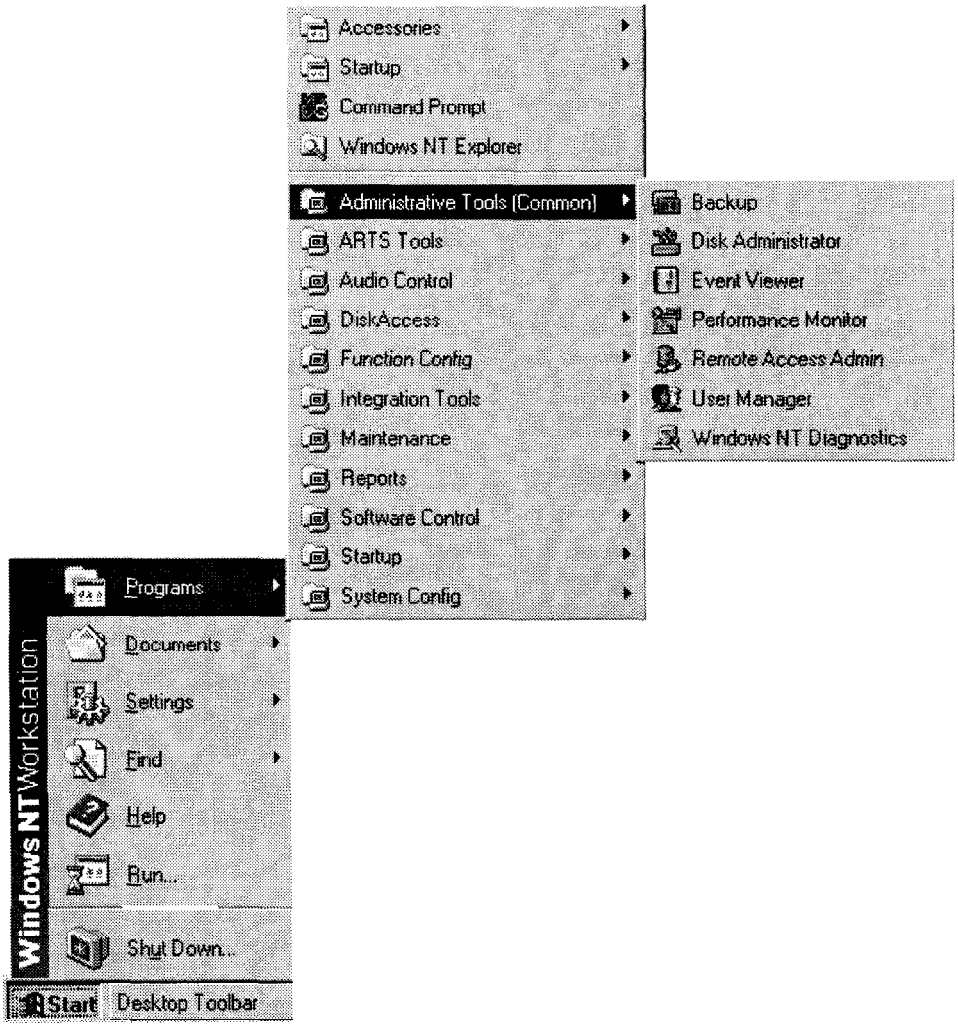

FIGURE 4-165. START MENU WINDOW

4.8.1 Windows NT Explorer

The Windows NT Explorer is a COTS application which provides a graphical means of organizing and manipulating files and directories. Windows NT Explorer allows the user to move, copy, rename, and delete files and directories, print documents, start applications, and maintain disks. Windows NT Explorer also supports the sharing of files and directories with other network users, and provides a connect function which allows remote file systems to be accessed as if they were a directly connected.

a. Special Notes:

1. Refer to Windows NT Explorer, Start Here, Microsoft Windows NT Workstation, Version 4.0, Microsoft Corporation, 1996, Document No. 000-28620, Chapter 2.

b. Windows NT Explorer electronic reference procedure:

1. From the Start menu:

(a) Click Help icon.

(b) Observe a list of book icons and a tabbed list of Contents, Index, and Find.

(c) Click on “How To...“.

(d) Observe “How To...“’s Table of Contents as another list of book icons.

(e) Double click on “Work with Files and Folders”.

(f) Reference desired procedure.

4.8.1 .1 Disk Access is installed in SMC-PC. Disk Access allows the connection of the disk drives in the VME chassis to the SMC-PC via the Windows NT Explorer (Figure 4-166). The user specifies a drive letter to represent the drive/partition to be connected to the PC. The user expands the NFS network by double clicking on that line under Shared Directories to view the nodes on the network (Figure 4-167). The user expands the node by double clicking on it to see the exported drives and partitions. A single click on the drive/partition causes it to be entered into Path (Figure 4-168). A valid user name may need to be entered into Connect As, depending on how the system is configured at each site.

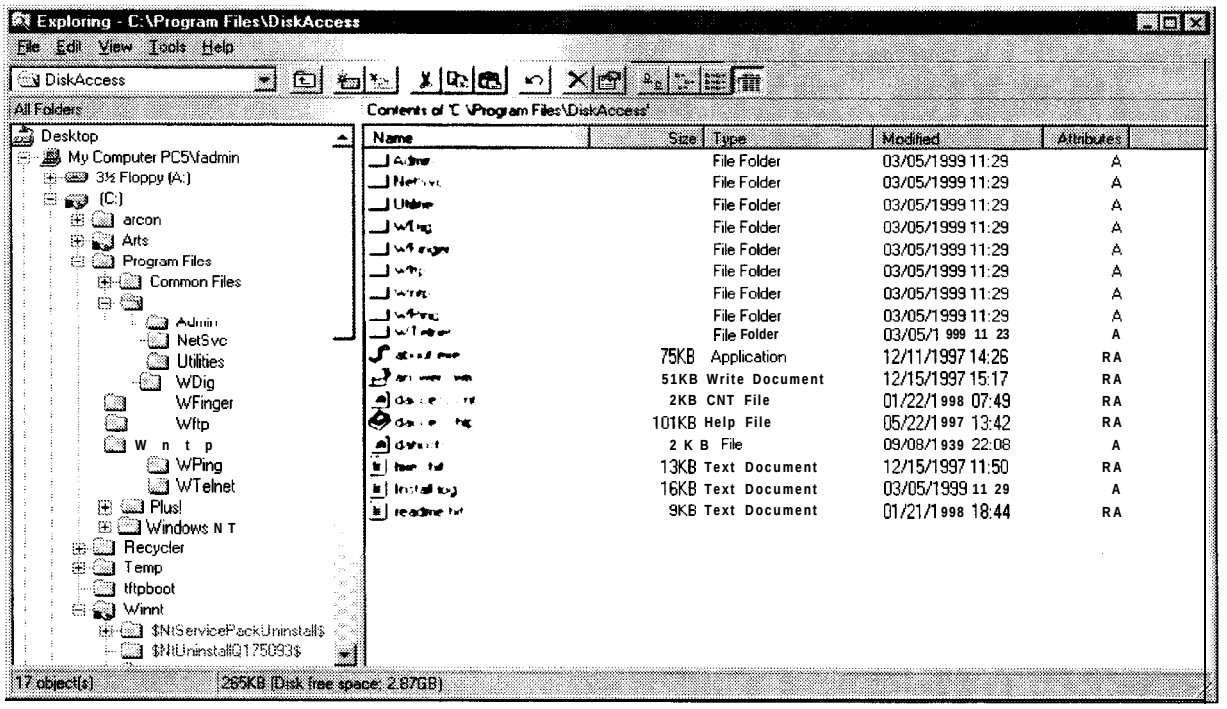

FIGURE 4-l 66. WINDOWS NT EXPLORER WINDOW

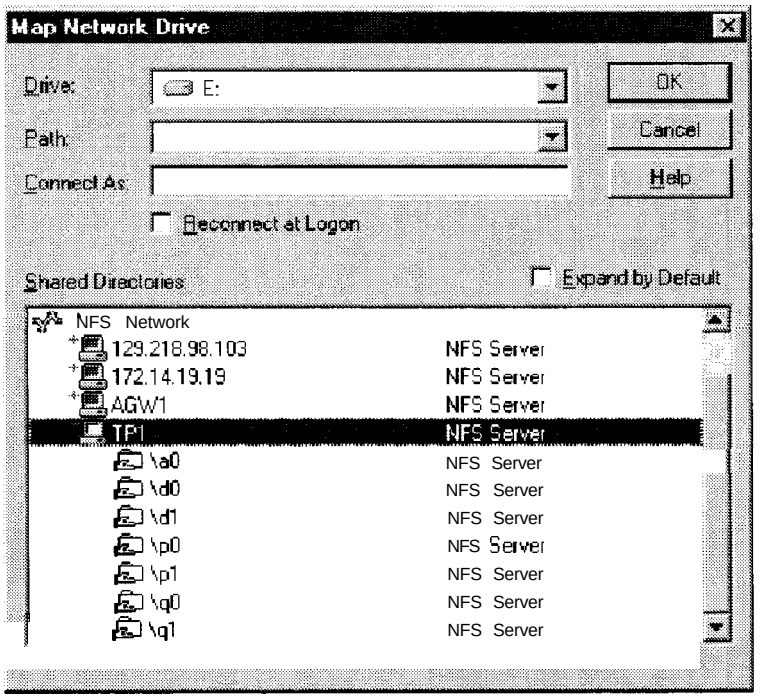

FIGURE 4-I 67. SHARED DIRECTORIES WINDOW

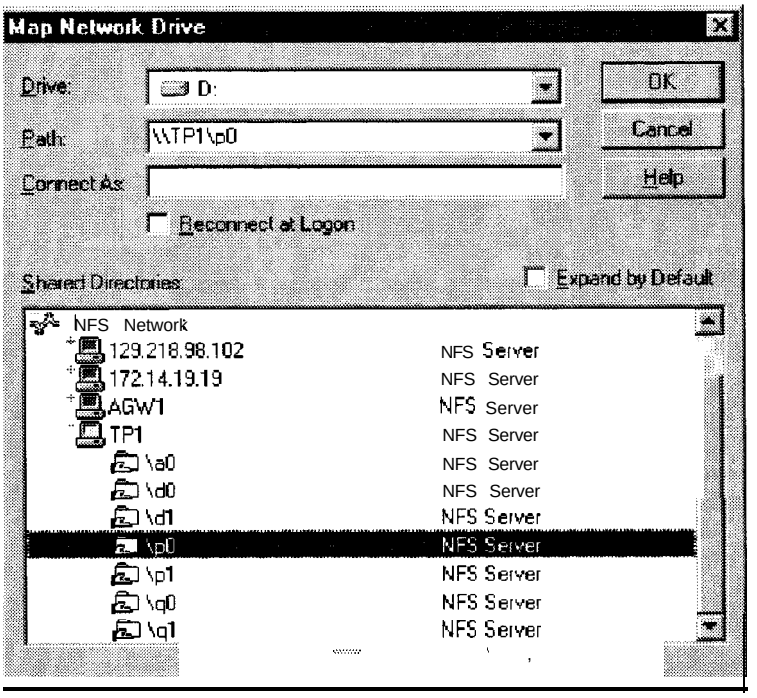

FIGURE 4-I 68. PATH WINDOW

4.9 ADMINISTRATIVE TOOLS

The Administrative Tools group contains system administration and management tools. Not all of these functions are described for use.

a. Administrative Tools operation:

1. Click the Administrative Tools icon in the Programs window (Figure 4-4).

2. Observe the Administrative Tools program group (Figure 4-169).

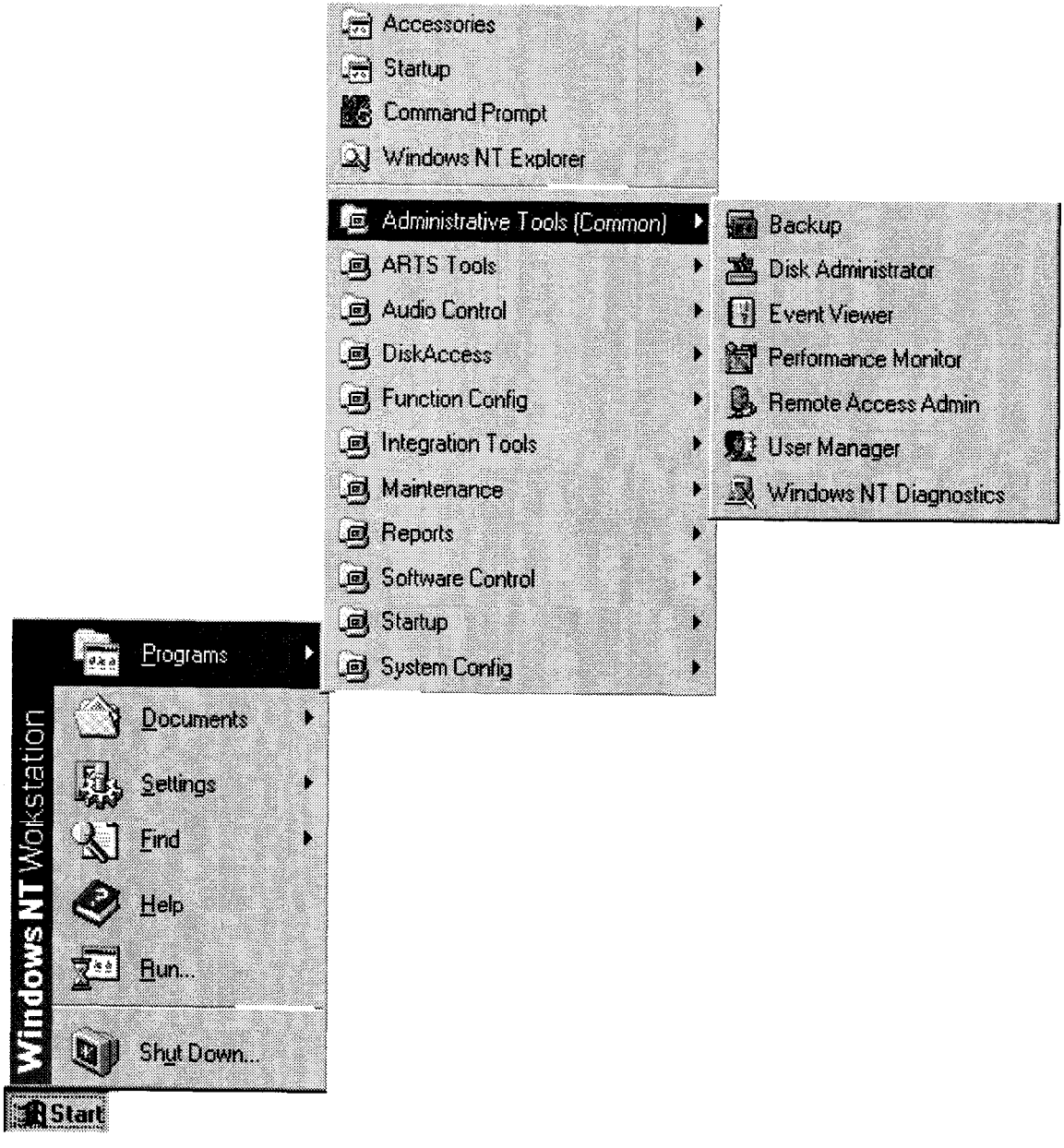

FIGURE 4-I 69. ADMINISTRATIVE TOOLS GROUP WINDOW

4.9.1 Registry Editor

The Registry Editor (Regedt32) is a Windows NT tool which is used by the Administrator to inspect and modify Windows NT and ARTS PC parameters in a database.

a. Special Notes:

1. Windows NT stores its configuration information in a database that is organized in a tree type format. Registry Editor (Figure 4-170) enables you to inspect and modify the default preferences in the Registry. **Normally, you should not need to do so, and in fact, you are liable to break your system if you make incorrect changes.** We expect that most administrators will not allow their users to run Registry Editor.

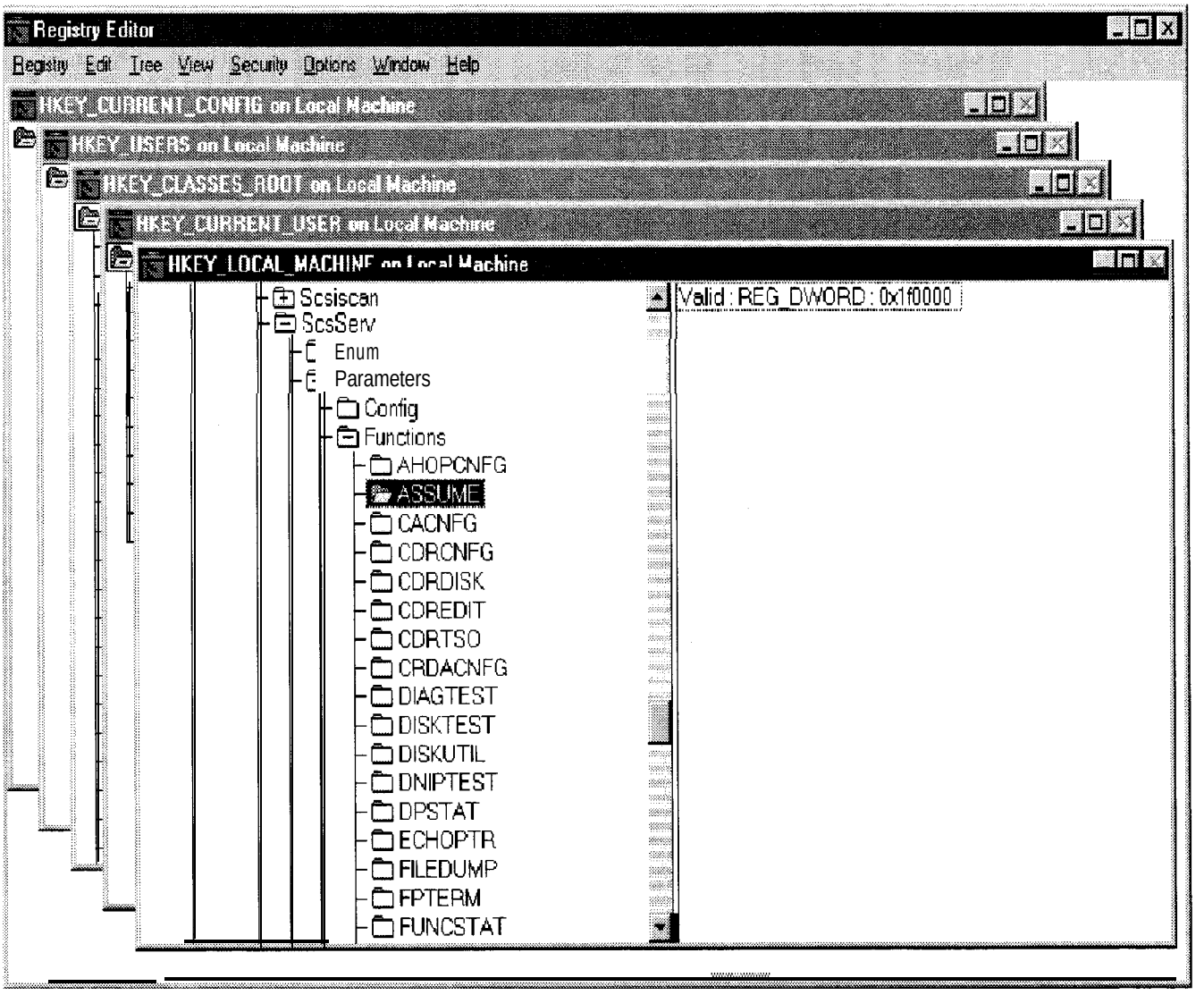

FIGURE 4-170. REGISTRY EDITOR WINDOW

2. Appendix F, SMC-PC Parameters, contains a list of the current modifiable ARTS parameters.

4.10 SMC-PC INSTALLATION

4.10.1 Setup SMC-PC Using Start/Run Method

The Setup SMC-PC provides an interface for installing the SMC-PC Software.

a. Setup SMC-PC operation:

1. Click the Start button.
2. Select Run from the Start Menu.
3. The user can either type in the full directory path that contains the file or click on the pulldown menu and make a selection from the list.
4. Observe Setup SMC-PC Installation dialog window (Figure **4-171).**
5. To progress through the installation sequence, click Continue or Cancel to exit.

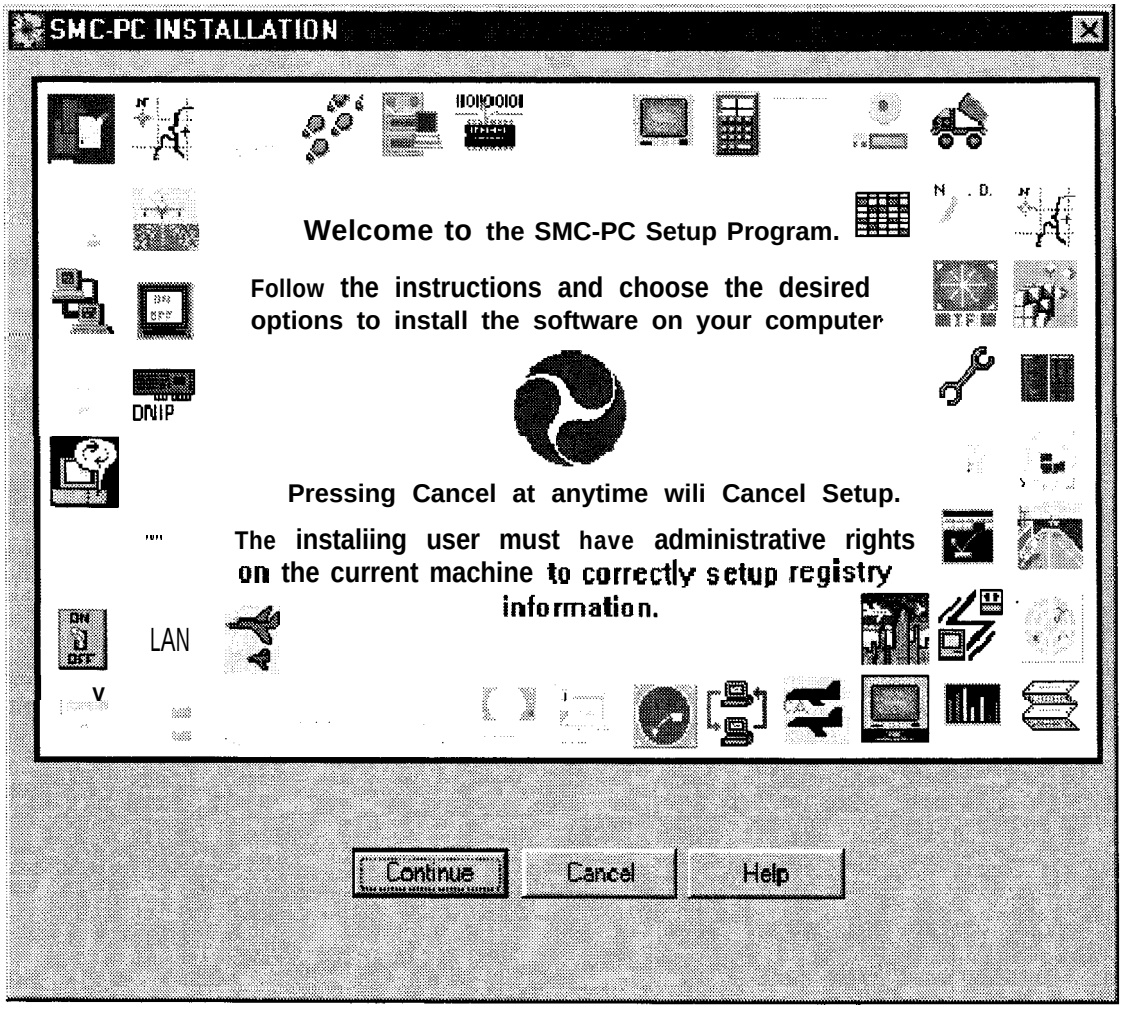

FIGURE **4-l** 71. SETUP SMC-PC INSTALLATION DIALOG WINDOW

4.10.1 .1 **Components.** The Components screen allows the user to select the components to be installed (Figure 4-172). The user can Copy Files, Copy Tools, or Set the Registry.

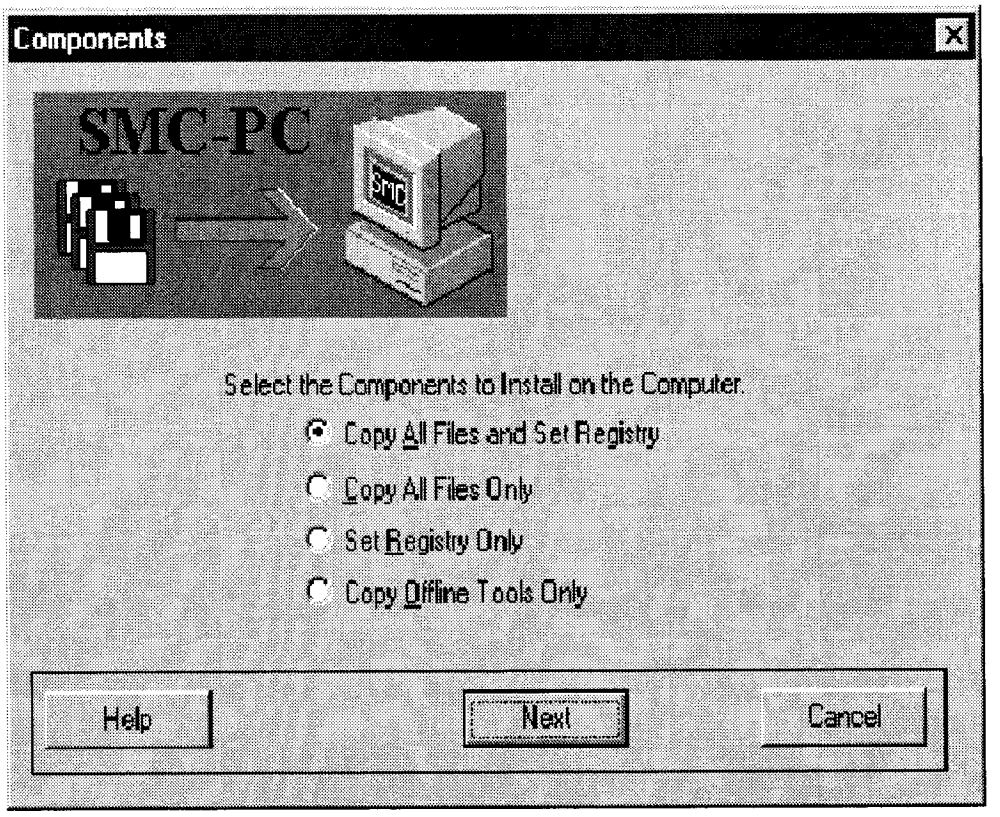

FIGURE 4-I 72. COMPONENTS WINDOW

Copy All Files and Set Registry	"Does a Full Install": Installs all files to the user-determined output directory, installs SCS and SSS services in registry, set service registry values as specified on subsequent screens, and sets up all icons on the desktop. Both services will be set on automatic, meaning they will be started whenever the computer is turned on.
Copy All Files Only	Installs all files to the user-determined output directory and sets up all icons on the desktop. This option, by itself, may be run by a user without Administrator privileges on the current machine. This option allows the installing user to update the software without changing registry values.
Set Registry Only	Sets the user-defined parameters in the Registry. The user-defined parameters are determined in subsequent dialog windows. Set Registry requires the installing user to have Administrator privileges or the installation will not be successful. This option does not copy any files.
Copy Offline Tools Only	Installs offline tools such as the Site Adaptation editor, CDE Editor, File Dump, Lat/Long X/Y calculator. It sets enough of the registry to allow the offline tools to work (e.g., Help System path).

4.10.1.2 Source Directory. The Source Directory dialog window is displayed when the Copy Files or Copy Tools component is selected (Figure 4-173). It prompts the user to enter the parameter which specifies the source directory of the SMC-PC software. The user may type in the source directory, or select it by pressing the Browse button which opens a Directory Selection dialog window.

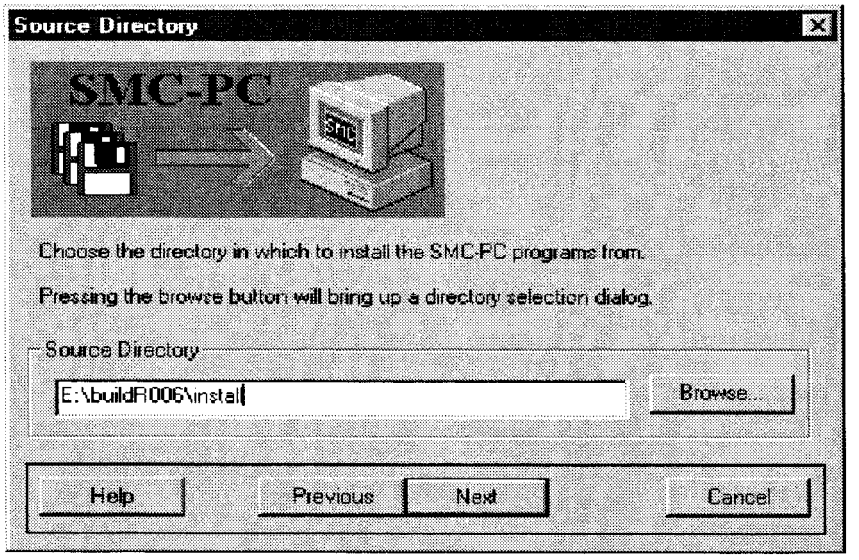

FIGURE 4-l 73. SOURCE DIRECTORY WINDOW

4.10.1.3 Destination Directory. This parameter screen is displayed when copying files or copying tools (Figure 4-174). It prompts the user to enter the destination directory of the SMC-PC software. It ensures that the selected drive has the necessary disk space to install the files. The user can type in the Destination Directory or select it by pressing the Browse button which opens a Directory Selection dialog box.

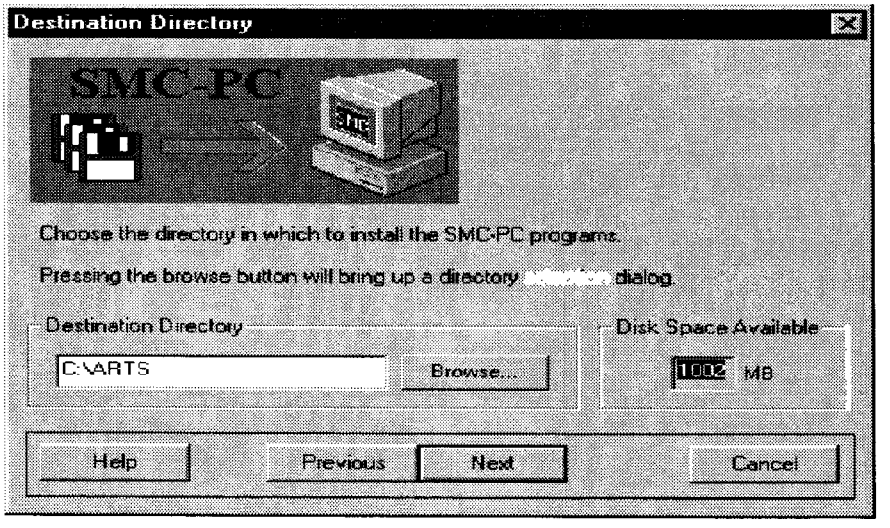

FIGURE 4-l 74. DESTINATION DIRECTORY WINDOW

4.10.1.4 Site Type. This parameter screen allows Site Type selection (Figure 4-175). The user selects whether this is an ARTS II or ARTS III installation site.

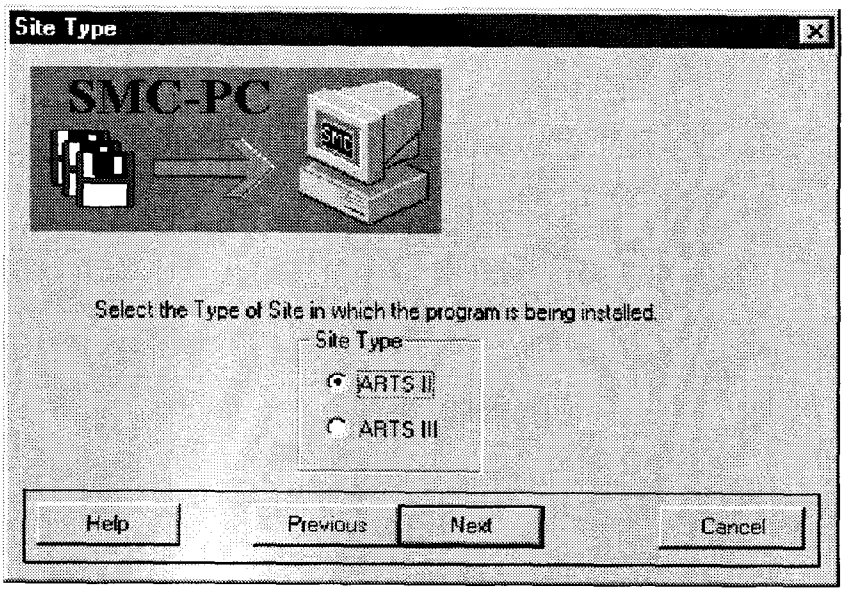

FIGURE 4-l 75. SETUP SITE TYPE WINDOW

4.10.1.5 Adaptation File. This screen is displayed when copying files (Figure 4-176). The installation utility allows the user to retrieve an Adaptation file from another source. Clicking on the Specify Adapt File radio button allows the user to edit the Adaptation Data Source edit box. Like the Destination Directory screen, the user can either type in the full directory path that contains the adaptation file or select the directory by pressing the Browse button.

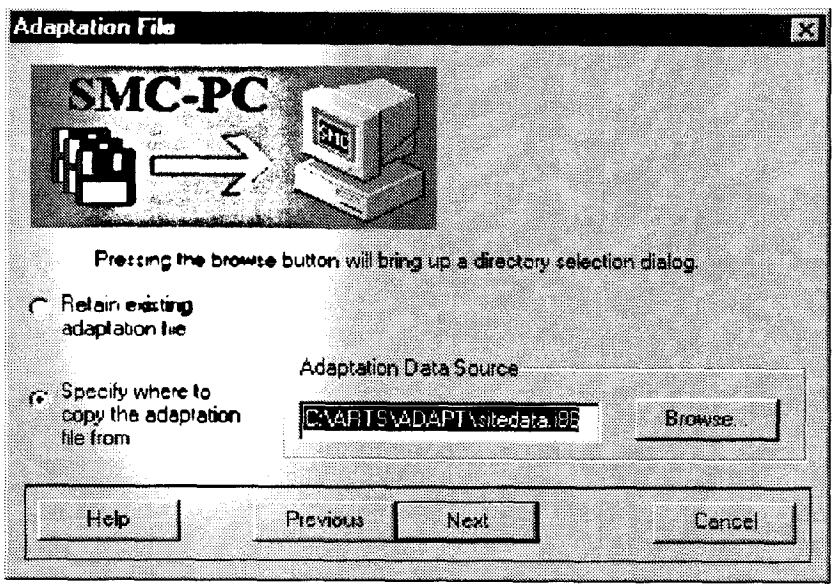

FIGURE 4-l 76. ADAPTATION FILE WINDOW

4.10.1.6 Parameters. This screen is displayed when setting the registry (Figure 4-177). The Parameters screen determines Registry information and installation directories. PD Dir Path allows the user to specify where the output PD files are stored. SMON History Directory Path allows the user to determine where the SMON History output files will be stored. These directory paths can be entered directly or selected by pressing the Browse buttons.

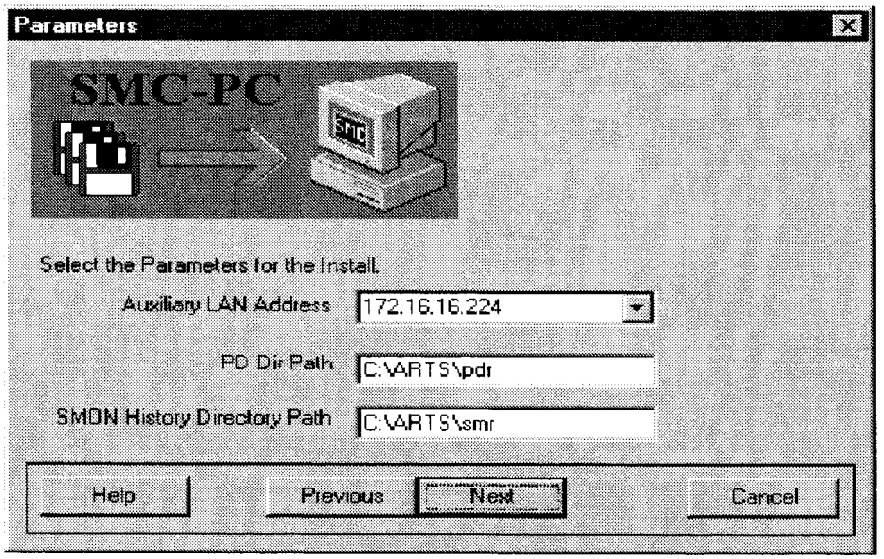

FIGURE 4-l 77. PARAMETERS WINDOW

4.10.1.7 SMON Parameters. This screen is displayed when setting the registry (Figure 4-178). The SMON Parameters screen determines Registry information that is used by other applications. It displays default printer values.

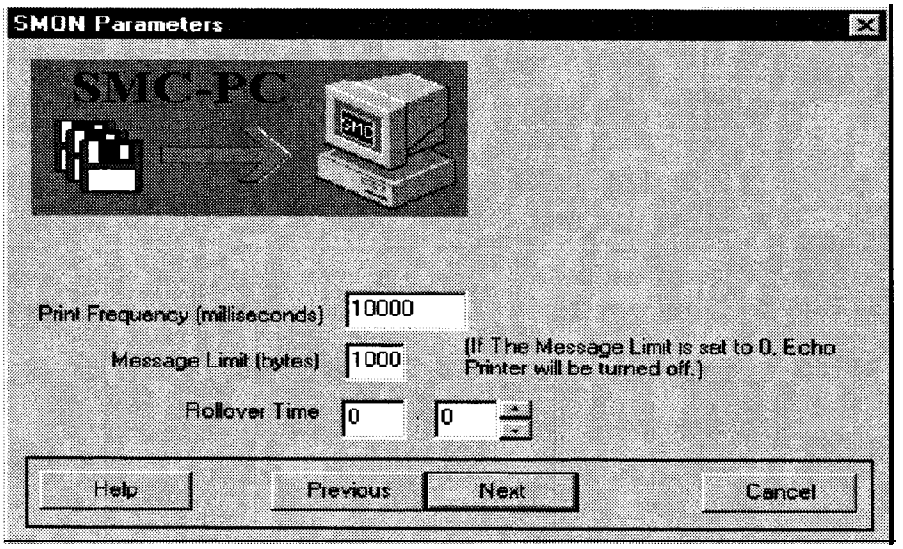

FIGURE 4-l 78. SMON PARAMETERS WINDOW

4.10.1.8 User Information. This screen prompts the user for a user name for an account and a password for that account (Figure 4-178A). The current user name is defaulted. (This option is not available when Copy All Files Only option is selected.)

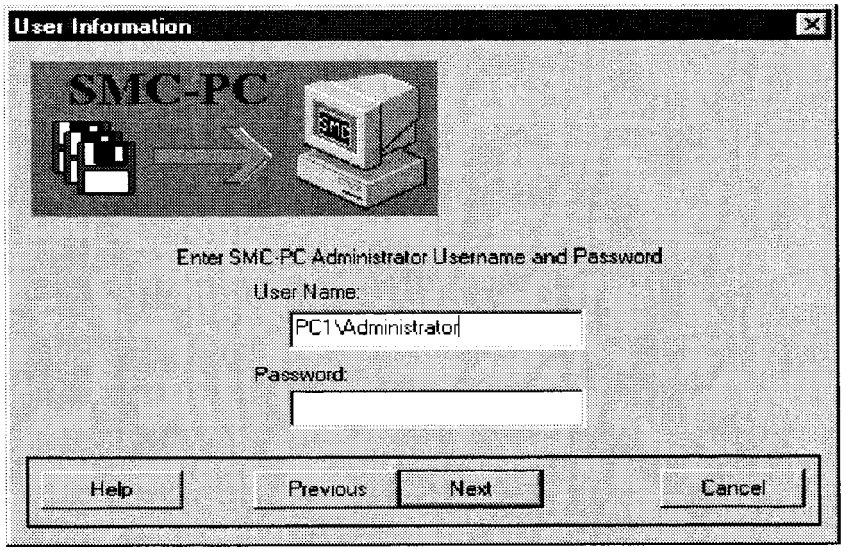

FIGURE 4-I 78A. USER INFORMATION WINDOW

4.10.1.9 Print Setup. This screen selects the printer to be used, its properties, the paper size and source, and printing orientation (Figure 4-178B). (This option is not available when Copy All Files Only option is selected.)

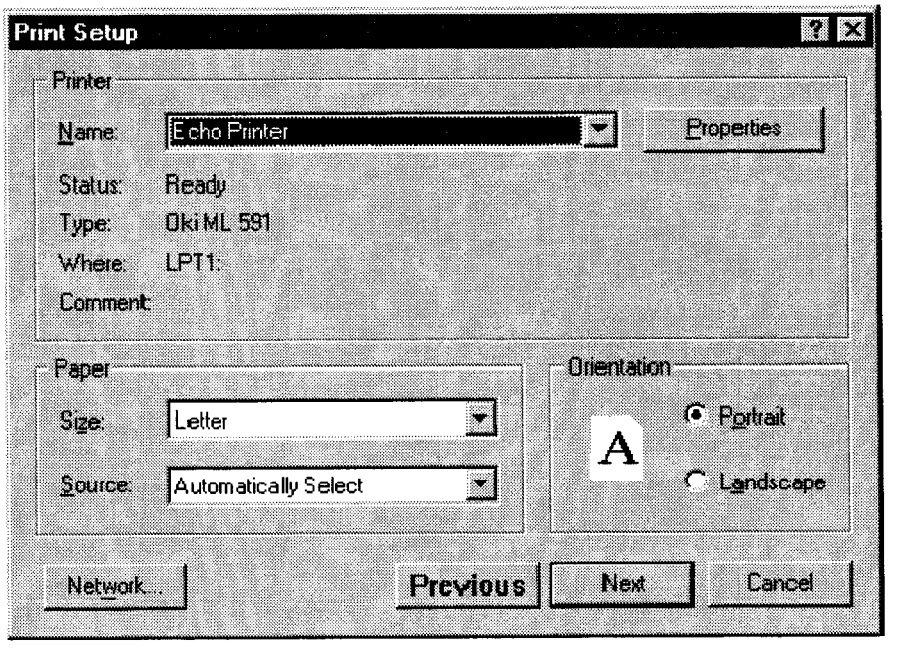

FIGURE 4-I 788. PRINT SETUP WINDOW

4.10.1.10 Installing. A confirmation screen is displayed prior to the final installation screen (Figure 4-178C). The final screen is displayed during the actual installation of the Files to the computer (Figure 4-179). It displays the progress of the installation. After a successful installation a Setup Successful window (Figure 4-179A) is displayed allowing the user to do a Restart.

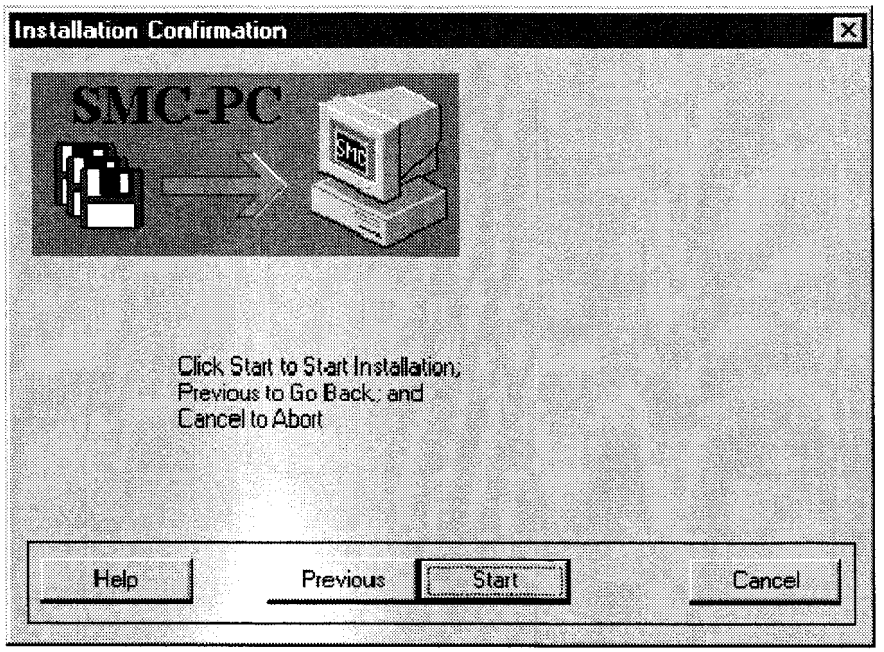

FIGURE 4-I 78C. INSTALLATION CONFIRMATION WINDOW

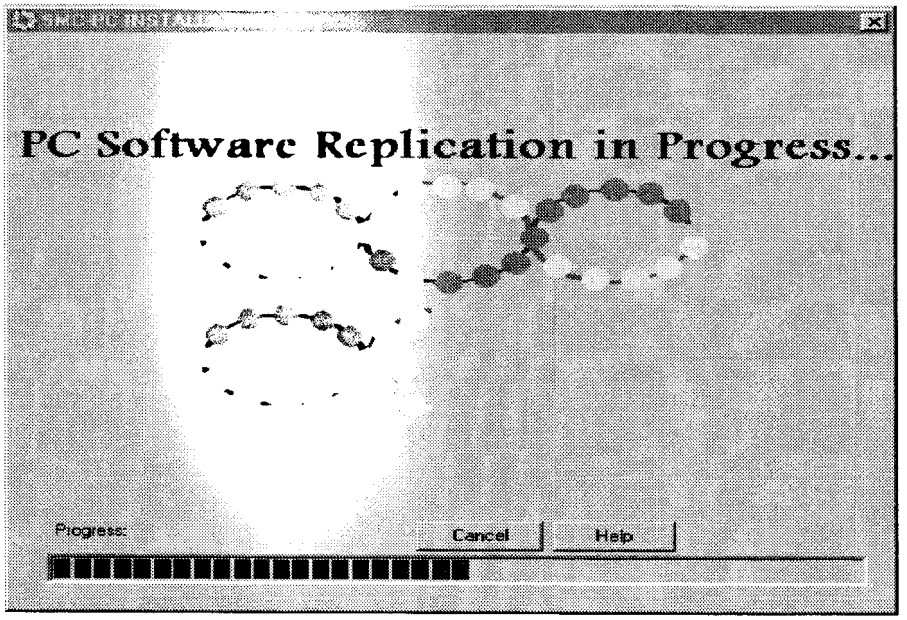

FIGURE 4-I 79. INSTALLING WINDOW

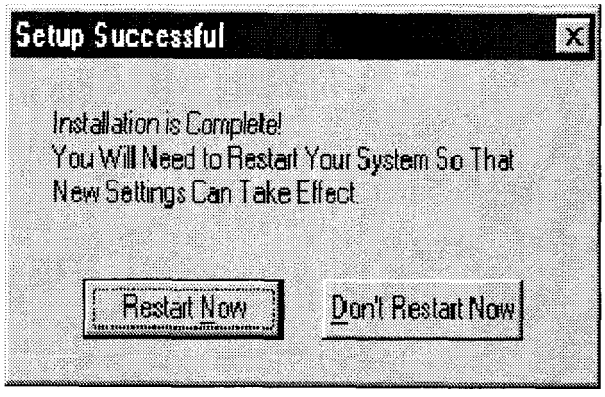

FIGURE 4-I 79A. SETUP SUCCESSFUL WINDOW

4.10.1 .11 Copying Errors. If any errors are encountered during installation, an Error screen is displayed (Figure 4-180). It lists out the files that could not be copied to the installation directory and any other errors that are encountered. If you are copying over an existing version of the installation, ensure that none of the files that already exist are read only. This causes errors in the new installation. Also errors are encountered if there are open applications or if the toolbar is opened.

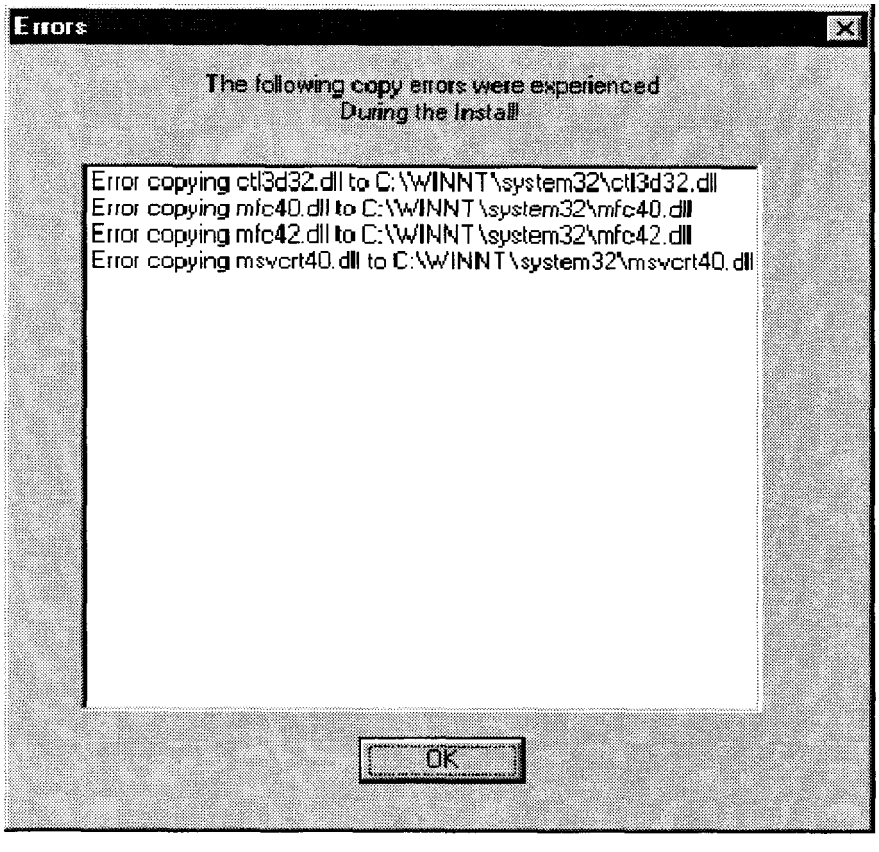

FIGURE 4-I 80. COPYING ERRORS DIALOG WINDOW

4.10.1.12 Service Errors. If the user attempts to install the service when not logged in with administrator privileges, an error box is displayed (Figure 4-181).

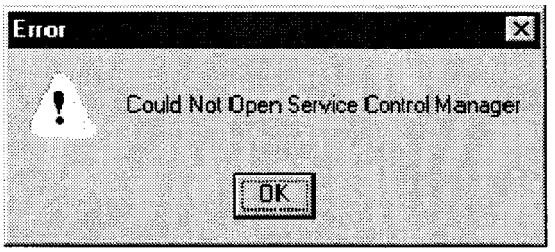

FIGURE 4-I 81. SERVICE ERRORS DIALOG WINDOW

4.10.1.13 Registry Errors. If the user attempts to set the registry when not logged in with administrator privileges, an error box is displayed (Figure 4-182).

FIGURE 4-I 82. REGISTRY ERRORS DIALOG WINDOW

4.10.2 Uninstall Utility

The Uninstall Utility provides a user interface for removing the installed SMC-PC files and removing the services from the user's PC.

FIGURE 4-I 83. UNINSTALL UTILITY DIALOG WINDOW (DELETED)

4.10.2.1 Uninstall Utility Errors. If the user attempts to install the service when not logged in with administrator privileges, an error box is displayed (Figure 4-184).

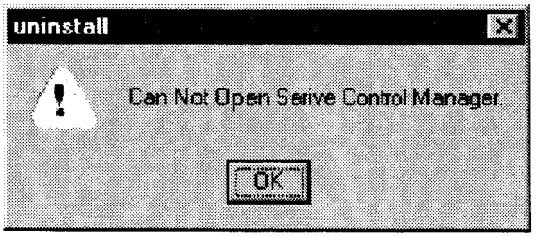

FIGURE 4-I 84. UNINSTALL ERRORS DIALOG WINDOW

4.10.2.2 Uninstall Utility Completion. On completion of the Uninstall, a message box is displayed (Figure 4-I 85).

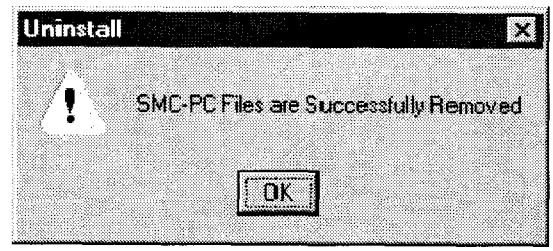

FIGURE 4-185. UNINSTALL COMPLETE DIALOG WINDOW

4.11 ACCESSORIES

The Accessories group contains additional COTS applications such as a word processor, clock, and calculator.

a. Accessories operation:

1. Click the Accessories icon in the Programs window (Figure **4-4).**

2. Observe the Accessories program group (Figure 4-186).

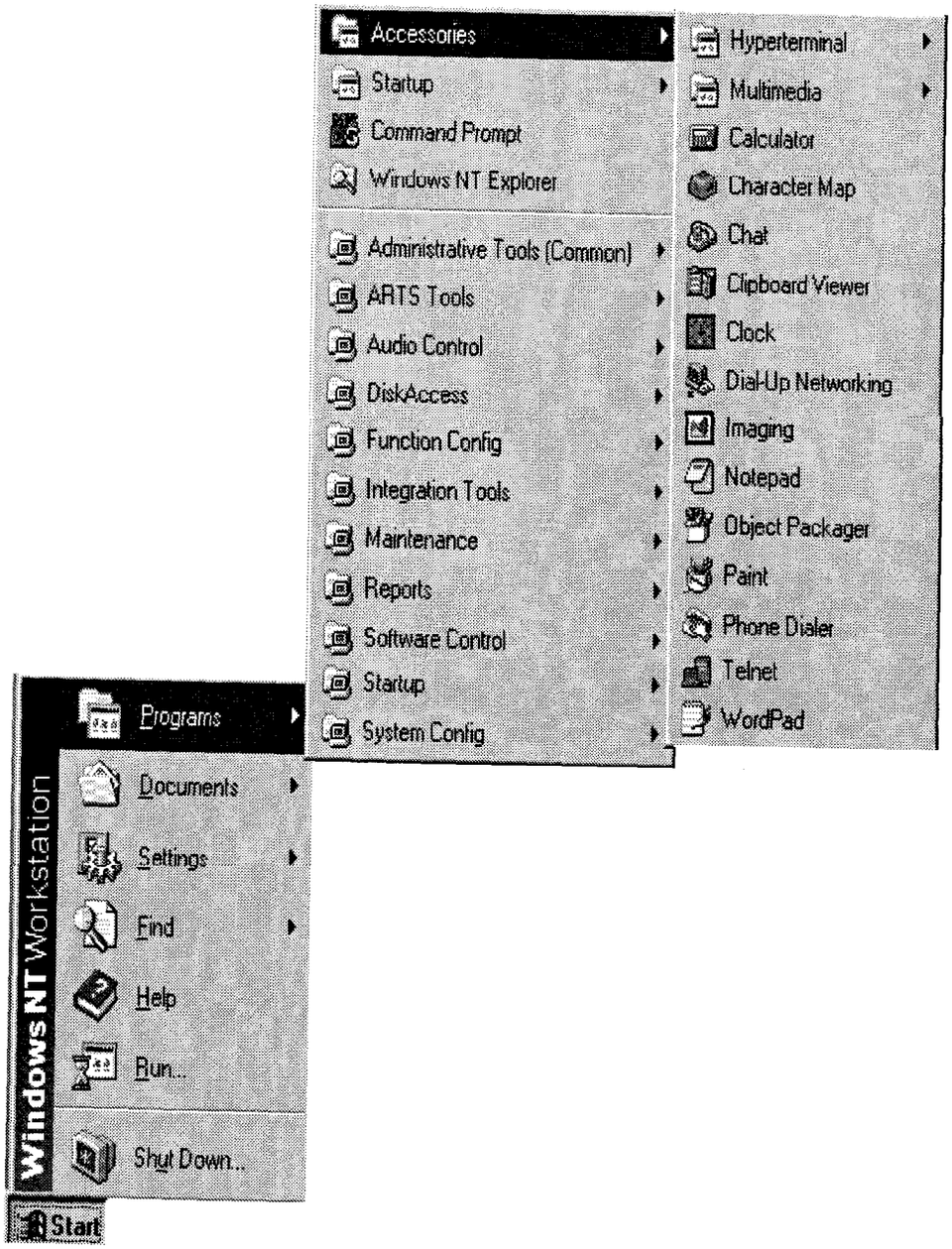

FIGURE 4-I 86. ACCESSORIES GROUP WINDOW

4.11.1 Notepad

The word processor, Notepad, can be used for viewing and editing ARTS training scenario files, site adaptation files, CDR Editor output, etc.

a. Notepad Operation:

1. Click on the Notepad icon (Figure 4-186).

2. Observe the Notepad window.

4.12 STARTUP

The Startup group contains the COTS and non-COTS applications that get initiated upon login to Windows NT (Figure 4-187). It is initially configured to start up the System Monitor function described in paragraph 4.5.7 and the Desktop Toolbar in paragraph 4.5.13.

a. Startup operation:

1. Click the Startup icon in the Programs window.

2. Observe the Startup Program Group (Figure 4-187).

FIGURE 4-187. STARTUP GROUP WINDOW

5.0 DISPLAY KEYBOARD ENTRIES

The purpose of this section is to list, in tabular form, all display keyboard entries. For more detailed information on keyboard entries and processing, refer to NAS-MD-638.

The display keyboard entries are divided into four groups:

1. Normal (Table 5-1)
2. Implied (Table 5-2)
3. Supervisory (Table 5-3)
4. Maintenance (Table 5-4).

The following general guidelines apply to the keyboard entry formats:

- When Enter is indicated, the enter key located at the top right side of the controller's keyboard is to be used. Slew is the corresponding enter key located next to the slewball positioning device.
- Commas separate keys that are pressed in sequence. For instance, F1 , DELTA, Enter means press the F1 key, then press the key marked with a small triangle, then press the Enter key.
- An ^ in the entry indicates that the space bar is to be pressed.
- An item that appears inside brackets [ ] is optional.
- If uppercase items appear in a list inside parentheses, one item must be selected from the list. For example, the (A/D/S/T) notation indicates the various ways to identify a track (ACID, discrete ABC, slew, or tab line ID).
- Superscripts identify the applicable Keyboard Entry Note in paragraph 5.1.
- No display keyboard entry is valid at an ACD in RGW mode except for the implied entry to Delete Frozen ARTS Data Block (see Table 5-2).

Message Entry Error Indications

- When a keyboard entry is invalid, an error indication is presented in the Readout Area. These error indications are:

Readout Area	Message Entry Error Indications
IF INHIB	inter-facility Interface Disabled
IF WAIT	Inter-facility Wait
FILE NOT FOUND	TG Scenario Name Not Found

Readout Area	Messaae Entrv Error Indications
FORMAT	Incorrect Format Used
ILL POS	Illegal Position
ILL TRK	Illegal Track
ILL FNCT	Illegal Function
DUP ID	Duplicate Aircraft Identification
CAPACITY	Capacity Exceeded
NO RESP	No Response to Entry
NO SLEW	Required Slew Entry Not Made
ILL LINE	Illegal Line
DUP BCN	Duplicate Beacon
NOT ADAPTED	Matching site adapted data does not exist
UNEXPTD RESP	Response received when none expected
WWVB DOWN	WWVB not available
SLEW RANGE ERR	Slew coordinate exceeds display sensor maximum range (single-sensor) or is off the system plane (mosaic).

TABLE 5-I. NORMAL KEYBOARD ENTRIES

Function	Entry Format[1]	Description
Initiate Control	F1, acid, [^, ABC, or + or / or /1, /2, /3, or /4, or Delta], [^, Delta, first scratch pad or assigned alt[12, 13, 14]], [^, +, second scratch pad or Pilot Reported Altitude[12, 13, 36]], [^, a/c type(2-4 a/n)]. Enters or Slew[4]	Initiate new track file. First + = assign beacon code from IFR block, / = assign code from first VFR block. /1 = assign code from second VFR block, etc. First Delta = radar-only FP.
	F1, [OK, ^[7]]. identity(ADT)[2], [^, first scratch pad or assigned alt [12, 13, 14]], [^, +, ^, second scratch pad or Pilot Reported Altitude[12, 13, 36]], Slew	Activate existing track file (if ACID used, the existing track may be retrieved from the FP file).
	F1, [OK, ^[7]], identity(ADT)[2], [^, first scratch pad[12, 13, 34]], [^, +, ^, second scratch pad[12, 13, 34]], Enter	Enable auto-acquisition for an existing track file.
Track Reposition	F2, [OK, ^[7]], identity(ADS)[2, 6], Slew	Reposition Full Data Block (FDB) of an active track or reinitiate FDB for a track in tabular coast. Space not required if track identified by slew in next field.

TABLE 5-I. NORMAL KEYBOARD ENTRIES (Continued)

Function	Entry Format[1]	Description
Track Suspend	F3, [OK, ^[7]], identity(ADST)[2], Enter[5]	Change status of an active, store, or tabular coast track to suspend.
Terminate Control	F4, [OK, ^[7]], identity (ADST)[2,6], [/, status, (A/P/E)], Enter[5]	Disassociate FP data from the identified active track or terminate the identified tabular track. "OK" not required in backup mode. Optional status (A = arrival, P = departure, E = enroute) to resolve duplicate ACID/DBC. Optional ETA/PTD identifying a specific leg in a multiple leg flight plan.
	F4, ALL, Enter	Terminate all tabular tracks (except FPs) and disassociate the FP data from all active tracks controlled by the enterer or, if the enterer is a paired position, by the enterer's paired controller, provided that the enterer is paired with only one controller.
Track Handoff	F5, [OK, ^[7]], (controller[18], or C or Cnn (nn=00-99)), [/[9]], ^, identity (ADS)[2, 6], Enter[5]	Initiate track handoff to ARTCC, or intrafacility (if ARTCC, requires successful completion of ARTCC/ARTS communication). nn = adapted sector number.
	F5, [OK, ^[7]], identity (ADS)[2, 6], [scratch pad[12,13,14]], Enter[5]	Track handoff accept. For handoff from ARTS or ARTCC, requires successful completion of ARTCC/ARTS communication unless controller enters "OK' — a "forced" accept.[20]
	F5, [OK, ^[7]], Delta, n (adapted ARTS site), or ARTS-site-ID, [controller[18]], [/], ^, identity(ADS)[2, 6], Enter	Initiate track handoff to another ARTS facility. Requires successful completion of inter-facility communication, unless controller enters "OK" — a "forced handoff". n = 1 to NARTSQ (SV).
	F5, [OK, ^[7]], ARTS-site-ID and fix #,^, identity (ADS)[2, 6], Enter[5]	Initiate ARTS to ARTS FP and track handoff to another ARTS facility. Completion requires successful completion of inter-facility communication. A flight strip is not produced at the receiving facility.

TABLE 5-I. NORMAL KEYBOARD ENTRIES (Continued)

Function	Entry Format[1]	Description
	F5, identity (ADS)[2, 6], Enter[5]	Track handoff recall. For handoff to ARTS or ARTCC, requires successful ARTCC/ARTS communication. For handoff of an ARTS to ARTS FP, a recall cancellation message is sent; completion requires successful ARTS/ ARTS communication.
	F5, OK, ^, [7, 15], identity (ADS)[2, 6], Enter[5]	Forced handoff recall/accept for track in handoff to ARTCC, i.e., no ARTCC communication.
	F5, [OK^[7]], Delta, identity (ADST)[2], Enter[5,21]	Inhibit inter-facility auto handoff for the identified track.
	F5, C, (E/I), Enter	Enable/inhibit inter-facility auto handoff for tracks controlled by the entering position.
	F5, A, [OK ^[7]], Delta, identity (ADST)[2], Enter[5,21]	Inhibit intrafacility auto handoff for the identified track.
	F5, A, C, (E/I), Enter	Enable/Inhibit intrafacility auto handoff for tracks controller by the entering position.
Flight Data Entry	F6, acid[32], [^, ABC or + or / or /1, /2, /3, or /4, or Delta], [^, controller or entry/exit fix[8]], [^, hhmm, E], [^, Delta, first scratch pad[12, 13, 34]], [^, +, second scratch pad[12, 13, 34]], [^, a/c type[25]], [^, requested alt (3 digits)], Enter	Reserve track file for the entered FP data. Optional fields may be entered in any order. First Delta = radar-only FP. hhmm = ETA/PTD.
	F6 *, ^, acid[32], [^, ABC or DELTA], [^, 'exit fix[8]], [^, hhmm, E], [^, Delta, first scratch pad[12, 13, 34]], [^, +, second scratch pad [12, 13, 34]], [^, a/c type[25]], [^, requested alt. (3 digits)], Enter	Display "DM" for keyboard-entered FPs. * = a departure FP that requires manual coordination to effect IF handoff. First Delta = radar only FP. hhmm = PTD. Optional fields may be entered in any order.
	F6, [OK, ^[7]], Slew	Display/delete aircraft type in FDB.
Multi-function: ATIS	F7, A, n (0-3), Enter	Display ATIS character and General Information (GI) data (n=O) or unique GI (n=l-9) in SDA.
	F7, A, H, Enter[21]	Display active arrival fix area(s) in readout area.

TABLE 5-1. NORMAL KEYBOARD ENTRIES (Continued)

Function	Entry Format[1]	Description
	F7, A, (A/B/C/D), [H], Enter[21, 22]	Enable/disable specified arrival fix area. H = fixes are adapted.
	F7, A, (A/B/C/D), altitude(3 digits), Enter[21,22]	Modify altitude associated with the specified arrival fix inhibit area. Automatic acquisition is inhibited on aircraft within the specified area above the specified altitude but enabled for aircraft at or below this altitude.
Altimeter Tab List	F7, A, Enter	Enable/inhibit altimeter tabular list.
	F7, A, altimeter region ID, Enter	Enable/inhibit specified altimeter region (3 alphanumeric characters) for display in altimeter tabular list.
Beacon	F7, B, Slew	Identify unassociated track for a Limited Data Block (LDB) readout, or display track data for an associated track in the readout area.
	F7, B, code (2 octal digits; 00-77), Enter	Enter/delete a selected code block displayed in System Data Area (SDA).
	F7, B, identity (ADT)[2], Enter	Erase ABC for the identified inactive track.
Configuration	F7, C, controller to[19], [controller from[19]], Enter[22, 28]	Consolidate second entered controller (enterer if omitted) with first entered controller, i.e., transfer control to first controller all store tracks, handoffs, and current and future FPs which are assigned to second controller.
	F7, C controller to[19] [controller from[19]] +, Enter[22 ,28]	Full consolidation. Same as consolidate; however, all tracks (active, inactive, and all future tracks and handoffs) controlled by second entered controller are transferred to first entered controller.

TABLE 5-I. NORMAL KEYBOARD ENTRIES (Continued)

Function	Entry Format'	Description
	F7, C, controller to[19] [controller from[19]], [/], Enter[22, 28]	Limited consolidation. Consolidate second entered controller (enterer if omitted) with first entered controller; i.e., transfer control to first controller all store tracks and FPs (including future FPs as signed by fix pairs) assigned to second controller. Virgule (/) = do not transfer handoffs to first controller.
	F7, C, /, Enter[22, 28]	Limited consolidation. Change entering controller from a consolidated to a limited consolidated position. Enterer takes control of all future FPs and handoffs (unless FP is assigned to different controller via fixed pairs).
	F7, C, Enter[22, 28]	Deconsolidate to entering controller; i.e., return control of all stored tracks, FPs, and subsequent FPs to the entering controller.
	F7, C, controller[19], *, status (P/C/M), [asso. controller[19]], [asso. controller[19]], Enter[22, 28]	Modify status of first entered controller. C = controller position, M = maintenance position, P = paired position. If P is entered, the associated controller(s) must be entered.
	F7, C, PERIOD, controller[18], fix id, Enter[22, 28]	Partially resectorize current configuration by reassigning control of pending and future arrival flights arriving over the fix(es) designated by fix id to the entered controller. Illegal at training position.
	F7, C, (P1/P2), Enter[22, 28]	Request configuration printout: PI = keyboard (status); P2 = all entry/exit fix configurations.
Display	F7, D, Enter[10]	Erase FDBs displayed but not controlled at the display.
	F7, D, Slew[10]	Select/erase FDB readout.
	F7, D, identity(ADT)[2], [^, A/P], Enter	Display track file data in readout area. A = arrival, P = departure.
	F7, D, PAR, ^, [sensor identifier], (E/I), Enter	Enable/inhibit display of parrot symbology. Sensor identifier is only allowed for mosaic displays.

TABLE 5-I. NORMAL KEYBOARD ENTRIES (Continued)

Function	Entry Format'	Description
	F7, D, +, Enter	Display configuration number and keyboard consolidations.
	F7, D, /, Enter	Display configuration number and keyboard pairings.
Emergency	F7, E, identity (ADS)[2], Enter[5]	Inhibit/enable display of EM, RF, and HJ in identified FDB.
Filter	F7, F, Enter	Display current LDB and PDB altitude filter limits in enterer's preview area.
	F7, F, unassociated track altitude limits (6 digits), [^, associated track altitude limits (6 digits)], Enter	Modify display LDB filter limits. Modify display LDB and Partial Data Block (PDB) filter limits (in that order). Altitude in 100's of feet.
	F7, F, C, altitude limits (6 digits), Enter	Modify display PDB filter limits.
	F7, F, RNG, rng, Enter	Specify range scale switch setting. rng = range 6-60 NM (ARTS IIE DBRITE only).
	F7, F, T, Enter	Display reported altitude for associated and unassociated tracks having a Mode C transponder.
	F7, F, S, Enter	Display Mode 3/A code for unassociated tracks having a Mode 3/A code which matches a selected code block.
	F7, F, L. Enter	Display Mode 3/A code for associated and unassociated tracks.
	F7, F, M, [rr], [F/D], Enter	Specify remote display track cutoff range (rr in NM), and/or fixed (F) or /dynamic (D) offcentering mode.
	F7, F, M. Enter	Display remote display track cutoff range and the offcentering mode. Only from remote position.
	F7, F, Z, Enter	Display current filter zone parameters for unassociated and associated tracks in Readout Area.

TABLE 5-1. NORMAL KEYBOARD ENTRIES (Continued)

Function	Entry Format'	Description
	F7, F, ^, zone id, ^, [R,rrrr], [Z,zzzzzz], [A,aaaaaa], Enter/Slew	Add/modify/delete one filter zone for unassociated tracks. zone id = 1-3 alphanumeric characters. rrrr = 2 ranges 00-64 NM. zzzzzz = 2 azimuths 000-360 degrees. aaaaaa = 2 altitudes in 100s of feet. Displayed as LDBs. Slew entry only allowed on mosaic displays.
	F7, F, C, ^, zone id, ^, [R,rrrr], [Z,zzzzzz], [A,aaaaaa], [+], Enter/ Slew	Add/modify/delete one filter zone for associated tracks. zone id = l-3 alphanumeric characters. rrrr = 2 ranges 00-64 NM. zzzzzz = 2 azimuths 000-360 degrees. aaaaaa = 2 altitudes in 100s of feet. + = apply associated zone filter data to unassociated zone of the same zone id. Displayed as PDBs. Slew entry only allowed on mosaic displays.
	F7, F, R, ^, [R,rrrr], [Z,zzzzzz], [A,aaaaaa], Enter/Slew	Modify all filter zones for unassociated tracks. rrrr = 2 ranges 00-64 NM. zzzzzz = 2 azimuths 000-360 degrees. aaaaaa = 2 altitudes in 100s of feet. Slew entry only allowed on mosaic displays.
	F7, F, C, R, ^, [R, rrrr], [Z, zzzzzz], [A, aaaaaa], [+], Enter/Slew	Modify all filter zones for associated tracks. rrrr = 2 ranges 00-64 NM. zzzzzz = 2 azimuths 000-360 degrees. aaaaaa = 2 altitudes in 100s of feet. + = apply associated zone filter data to all unassociated zones. Slew entry only allowed on mosaic displays.

TABLE 5-I. NORMAL KEYBOARD ENTRIES (Continued)

Function	Entry Format[1]	Description
Heavy	F7, H, [OK, ^[7]], identity(ADST[2]), [^, (.a/*b/c/..d/actype)], Enters	Display/inhibit site-adapted alpha character, satellite airport character, a/c category character, or a/c type in FDB. a = V (VFR), P (VFR on top) or site-adapted alpha b = satellite airport designator (optional, clear if not entered) c = a/c category: H = Heavy T = TCAS B = Heavy+TCAS F = B-757 L = B-757+TCAS d = exit fix designator actype = 2-4 chars (leading alpha). If the entered a, b, or d data are the same as currently displayed, the display of that character is inhibited. If no data are entered, c data are inhibited.
Trackball	F7, I, NC, Slew	Specify new center home trackball position (radar home option must be site-adapted).
	F7, I, HS, Enter	Select home trackball option.
	F7, I, NH, Enter	Select no-home trackball option.
Destination Airport Data	F7, J, a (airport designator), Slew	Select destination airport data for specified track. a = alpha character for destination airport data (displayed in FDB). Destination airport data (adapted data) displayed in FDB scratch pad. Track arrival status (adapted data) is updated.
	F7, J, a (airport designator), i (approach indicator), Slew	Select destination airport data and approach type for specified track. a = alpha character for destination airport data (displayed in FDB). i = alpha character for approach indicator. Approach type (adapted data) displayed in FDB scratch pad. Track arrival status (adapted data) is updated.

TABLE 5-1. NORMAL KEYBOARD ENTRIES (Continued)

Function	Entry Format[1]	Description
Initialize	F7, K, Enter	Enable auto offset, display of arrival/ departure tabular lists, VFR tabular list, and automatic display of unassociated radar only tracks.
	F7, K, E, Enter	Reestablish filter zones to site adapted values for this display.
Leader	F7, L, [OK, ^[7]], leader direction (1 digit: 1/2/3/4/5/6/7/8/9), identity (ADS)*, Enter[5, 10]	Select offset direction of the identified track at this display or at all displays if the track controller is adapted for implied global changes. If a "5" was entered, any previous single track modify offset entry is canceled and normal leader direction criteria apply.
	F7, L, leader direction (1 digit: 1/2/3/4/6/7/8/9), Enter[10]	Select offset direction for all current tracks if auto-offset is disabled and for all future tracks at this keyboard.
	F7, L, controller[18], ^, leader direction (1 digit: 0/1 /2/3/4/6/7/8/9), Enter	Select offset direction for another controllers tracks on enterers display. A "0" terminates the "leader by controller" and then normal leader direction criteria apply.
	F7, L, leader direction (1 digit: 1/2/3/4/6/7/8/9).● ,Enter[10]	Select offset direction for all current and future tracks which are not controlled at this display only if auto offset is disabled. ILL FNCT if the display is an Instrument Land System (ILS) monitor display and ILS monitor function is enabled.
	F7, L, [OK, ^[7]], global leader direction (2 identical digits: 11/22/33/44/66/77/88/99), identity(ADS)[2], Enters	Select offset direction of identified track at all displays.
	F7, L, 0, *, Enter[10]	Deselect any previous entry to modify the initial leader direction for tracks not controlled at this display. Leader directions return to direction selected by controlling position.
	F7, L, (R/L), identity(ADS)[2], Enter[5]	Specify ILS monitor position to receive auto handoff (retain offset direction).

TABLE 5-I. NORMAL KEYBOARD ENTRIES (Continued)

Function	Entry Format'	Description
	F7, L, special offset identifier (1 alpha character), Enter	Enable/Disable Special Offset processing by area.
	F7, L, ldr dir (1/2/3/4/6/7/8/9), U, Enter	Select leader direction of current and future LDBs and MCIDBs at this display.
Modify	F7, M, [OK, ^[7]] identity(ADST)[2], [/,status (A/P/E], [^, data[8]], Enter[5]	Modify identified track with the entered data. Optional status (A = arrival, P = departure, E = enroute) to resolve duplicate ACID/Discrete Beacon Code (DBC). If no data, display/inhibit Mode C for an active track.
	F7, M, [OK, ^[7]], *, ^, identity(ADT)[2], Enter	Generate blinking "DM" (Departure Message) on acquisition and indicate that manual coordination is required to effect inter-facility handoff.
CRDA (Converging Runway Display Aid)	F7, N, runway pair configuration (1 -CRCFGQ), (T/S/A), Enter[22]	Enable the specified CRDA runway pair configuration. T = TIE mode S = STAGGER mode A = APG mode. Must be from a training position.
	F7, N, runway pair configuration (1 -CRCFGQ), D, Enter	Disable specified CRDA runway pair configuration. Must be from a training position.
	F7, N, Enter	Toggle on/off ghosting information in SDA. If toggled off and a CRDA runway pair configuration has been selected, "GHOST OFF" displayed at non-primary and secondary CRDA control positions. If toggled on and a CRDA runway pair configuration has been selected, CRDA runway configuration displayed at non-primary and secondary CRDA control positions.
	F7, N, runway identifier (1 Alpha Character), Enter	Toggle display of all ghost tracks on the final approach corresponding to specified runway identifier.
	F7, N, airport ID (1 alpha char [excluding L, R, or C]), runway number (1 or 2 digits), [L/R/C] for parallel runways, Enter	Toggle display of all ghost tracks on the final approach corresponding to specified airport ID and runway number.

TABLE 5-1. NORMAL KEYBOARD ENTRIES (Continued)

Function	Entry Format'	Description
	F7, N, airport ID (1 alpha char [excluding L, R, or C]), runway number (1 or 2 digits), [L/R/C] for parallel runways, (E/l), Enter	Enable/inhibit display of all ghost tracks on final approach corresponding to specified airport ID and runway number.
	F7, N, runway identifier (1 alpha character), (E/l), Enter	Enable/inhibit display of all ghost tracks on final approach corresponding to specified runway identifiers.
	F7, N, ALL, Enter	Terminate all Ghost Data Blocks (GDBs) currently displayed at the display associated with this keyboard.
	F7, N, L, leader direction (l/2/3/4/6/7/8/9), Slew	Modify leader offset direction of GDB of the specified ghost track.
	F7, N, L, leader direction (l/2/3/4/6/7/8/9), Enter	Modify leader offset direction for all current and future ghost tracks at the display associated with this keyboard.
	F7, N, L, leader direction (1/2/3/4/6/7/8/9), runway identifier (1 alpha character), Enter	Modify leader offset direction for all current and future ghost tracks on final approach corresponding to the specified runway identifier at the display associated with this keyboard.
	F7, N, Slew	Display ghost track that is linked to the associated track identified by the slew.
	F7, N, Slew	Erase display of ghost track identified by the slew.
	F7, N, *, Slew	Display track data in preview readout area for associated track linked to the ghost track identified by the slew.
	F7, N, runway identifier (1 alpha character), Slew	Force associated track into qualifying for ghosting. Override all qualification checks except for ghosting area check. Note: Runway identifier specified in this entry is the runway on which the aircraft will land and not where you want to see the ghost.
	F7, N, runway pair configuration (1 -CRCFGQ), B, Enter	Enable/disable the display of boundary lines for RDA and APG regions.
	F7, N, runway pair configuration (1 -CRCFGQ), L, Enter	Enable/disable the display of APG course line segments.
Auto-Offset	F7, 0, Enter	Select/inhibit auto-offset for this display (ARTS IIIE only).

TABLE 5-1. NORMAL KEYBOARD ENTRIES (Continued)

Function	Entry Format[1]	Description
Preview	F7, P, Slew	Relocate preview area.
	F7, P, (1/2/3), Slew	Relocate specified BRITE tab list.
	F7, P, controller[18], Enter[21, 23]	Select/inhibit supervisory position.
	F7, P, (N/S/E/W), Enter	Relocate altitude restriction display for specified area.
MSAW Display	F7, Q, Slew	Inhibit MSAW display output for specified track (i.e., "LA" and aural alarm; display * in FDB).
Quicklook	F7, Q, ALL, Enter	Display all controller Full Data Blocks.
	F7, Q, [controller[18]], Enter	Select/inhibit FDB readout (quicklook) of all tracks controlled by entering controller. If controller is omitted, inhibit all quick looked tracks for this display.
Read Memory	F7, R, S, Enter[22]	Enable/disable readout of SDC memory.
	F7, R, (S/V/Vii, [^, process name], [^, process id (l-3 digits)], Enter[22]	Enable/disable the readout of entered memory: S = SDC, V = VME memory. ii = network id. 2 hex digits. If network ID is omitted, enterer's memory is assumed.
	F7, R, (S/V), address (8 hexadecimal digits), [^, d (1 digit 0-9)], Enter[22]	Select/erase readout (S=SDC, V=VME) of contents of d*4 addresses (4 bytes). (If d is omitted, 4 is assumed; if 0 is entered, 40 is assumed.)
	F7, R, (S/V), *, Enter[22]	Erase all memory readout (S=SDC, V=VME).
	F7, R, (S/V), address (8 hexadecimal digits), ^, contents (2, 4, or 8 hexadecimal digits), Enter[22]	Change contents of memory, beginning at specified address, to specified contents (S=SDC, V=VME).
System	F7, S, Slew	Relocate the SDA.
	F7, S, +, C, Enter[21]	Enable/inhibit display of keyboard consolidation data in SDA.
Tabular	F7, T, Slew	Relocate Arrival/Departure tab list.
	F7, T, Enter	Select/inhibit display of Arrival/Departure tab list.
	F7, T, A, Enter	Select/inhibit display of Satellite Arrivals tab list.
	F7, T, A, Slew	Relocate Satellite Arrivals tab list.

TABLE 5-I. NORMAL KEYBOARD ENTRIES (Continued)

Function	Entry Format'	Description
	F7, T, C, Slew	Relocate Coast/Suspend tab list.
	F7, T, H, Slew	Relocate Hospital tab list.
	F7, T, H, Enter	Select/inhibit display of Hospital tab list.
	F7, T, I, Slew	Relocate ILS Monitor/Special Offset Regions tab list.
	F7, T, L, Slew	Relocate Altimeter tab list.
	F7, T, M, Slew	Relocate Low Altitude/Conflict Alert (LA/CA) display area.
	F7, T, Q, Slew	Relocate CA Zone Suppression tab list.
	F7, T, R, Slew	Relocate Memory tab list.
	F7, T, S, Enter	Select/inhibit display of sign-on list.
	F7, T, S, Slew	Relocate the sign-on list.
	F7, T, time (hhmm, 4 digits), Enter	Terminate store tracks with ETA/PTD less than time specified for this position.
	F7, T, V, Enter	Select/inhibit display of VFR FP list.
	F7, T, V, Slew	Relocate VFR FP list.
	F7, T, list#, Slew	Relocate Run Down tab list (list # = l-3). Keyboard must be adapted.
	F7, T, set ID, ^, set number, Enter	Select a tabular set configuration (by ID and number) consisting of initial leader directions for FDBs and LDBs and initial tabular display locations. Tabular set ID is l-5 characters (SV), first character alpha.Tabular set number = 1-5 (SP).
	F7, T, set ID, ^, tab set number, S, Enter	Save the current initial leader directions for FDBs and LDBs and the current tabular display locations in the tabular set configuration according to the specified ID and number. Tabular set = l-5 chars (SV), first character alpha. Tabular set number = l-5 (SP).
No Flight Plan Alert	F7, U, [region id], space, E [enable] or I [inhibit], Enter	Enables or inhibits the NO FP geographic area at the entering adapted control position. region id = 1-3 alphanumerics.

TABLE 5-I. NORMAL KEYBOARD ENTRIES (Continued)

Function	Entry Format[1]	Description
MSAW Processing	F7, V, Slew	Enable/disable MSAW for specified track.
Airspace Violator Alert	F7, W, (E/I/S), Enter	Enable, inhibit, or status the Airspace Violator Function for the entering controller.
	F7, W, [^], (E/I/S), Slew	Enable, inhibit, or status the Airspace Violator Function for the aircraft specified by slew.
	F7, W, (acid/beacon code/slew line#), ^, (E/I/S), Enter	Enable, inhibit, or status the Airspace Violator Function for the specified aircraft.
	F7, W, airport ID, [(A/D)], ^, (E/I/S), Enter	Enable, inhibit, or status the Airspace Violator Function for the entering controller for a specified airport.
Switch Sensor	F7, X, sensor identifier (alpha char), Enter	Align display to selected sensor. Remove from mosaic mode, if applicable.
	F7, X, MOS, Enter	Switch display to mosaic mode.
	F7, X, sensor identifier (alpha char), ^, MOS, Enter	Switch display's functional sensor to entered and place/retain display in mosaic mode.
Scratch Pad	F7, Y, [OK, ^[7]], identity(ADS), Enter[5]	Delete first scratch pad data.
	F7, Y, [OK, ^[7]], identity(ADS), ^, data (1-3 chars)[12,13,14], Enter[5]	Display first scratch pad data or assigned altitude in line 2 of FDB.
	F7, Y, [OK, ^[7]], identity (ADS), ^, +, Enter[5]	Delete second scratch pad data or cancel Pilot Repot-ted Altitude.
	F7, Y, [OK, ^[7]], identity (ADS), [^], +, data (1-3 chars)[12,13,36], Enter[5]	Display second scratch pad or Pilot Reported Altitude data in line 2 of FDB.
Track Amplify	F7, Z, Enter[22]	Inhibit amplify data for entering keyboard.
	F7, Z, identity (AS)[2,6], Enter[5,22]	Display amplify data in SDA for identified track.
	F7, Z, P, ^, identity (AS)[2], Enter[5,22]	Print and record on PDPC data associated with the specified track.
Manual Reconfiguration	F7, 2, Enter	Reinitialize enterer's display if enterer is at a Remote Display Buffer Memory (RDBM) refreshed display.
	F7, 2, ALARM, M or C, Enter	Ring aural alarm.

TABLE 5-I. NORMAL KEYBOARD ENTRIES (Continued)

Function	Entry Format'	Description
	F7, 2, I, (E/I), Enter[21]	Enable/inhibit ILS monitor function.
	F7, 2, I, Enter	Enable/inhibit ILS Monitor/Special Offset Regions Status tab list.
	F7, 2, LDDT, Enter[22, 31]	Enable Limited Display Diagnostic Test (LDDT) Patterns.
	F7, 2, P, Enter	Toggle the display of radar only tracks at the entering position, if site adapted.
Sign On/Off	F7, 5, ci, [/di or .di or *di], [+id], [hhmm], Enter	Sign-On to (Open) an ARTS position as a(n) Controller, Instructor (I), Evaluator (E), Certifier (C), or for OJT. ci = Controller's initials (2 alpha) = instructor's initials if /di entered = Evaluator's initials if .di entered = Certifier's initials if *di entered. di = Developmentals initials for I, E, C, or OJT (2 alpha). id = subset and position symbol of position being opened. hhmm = start time, hours and minutes (only from supervisory position).
	F7, 5, *, cp, [+id], [hhmm], Enter	Close (combine) a position on the ARTS system. cp = subset (optional) and position symbol of position with which the closing position is combined. + = Key character indicating that the position being closed is entered, rather than implied. id = subset and position symbol of position being closed (combined with cp). hhmm = stop time, hours and minutes (only from supervisory position).

TABLE 5-1. NORMAL KEYBOARD ENTRIES (Continued)

Function	Entry Format'	Description
Digital Display (FDAD or ACD only)	F8, Slew	Change range ring center to entered slew position.
	F8, Enter	Return range ring center to initial position.
Digital Maps (FDAD only)	F8, M, [A], [B], [C], [D], [E], [F], Enter	Display digital maps as selected by entered character(s) A through F. If no map is selected, erase all displayed digital maps.
	F8, M, K, nn, Enter	Download keyboard selectable map set nn (00-99) to display RAM for this sensor. Display map A.
	F8, M, S, nn, Enter	Download switch selectable map set nn (00-99) to display EEPROM for this sensor.
VFR Flt Plan	F9, acid[32], ^, entry/exit fix, and [*], ^, [a/c cat (1 alpha), /], a/c typ, [^, alt], [^, controller[18]], Enter[21, 27]	Initiate ARTS/NAS VFR FP message.
	F9, acid, ^, entry or exit fix, ^, [a/c cat (1 alpha), /], a/c typ, [^, alt], [^, controller[18]], Enter[21, 27]	Retransmit VFR FP message for FP displaying "IFP".
	F9, acid or' VFR flight plan list id (0-9), ^, exit fix[29], Enter[21, 27]	Retransmit VFR FP message for FP displaying "FIX".
	F9, acid or VFR flight plan list id (0-9), Enter[21, 27]	Drop VFR FP from the VFR list.
Request Flight Plan Transfer	F9, ECID or beacon code, [^, adjacent ARTS id]. Enter • Entering display not in training or maintenance mode	Generate and transmit RF inter-facility message to ARTCC. ARTS id = one adapted character.
IF Print	F10, message type[16], Enter[22]	Select/inhibit printout of selected ARTCC IF message type.
CA	F11, C, Enter	Enable/inhibit display of CA tracks for this controller. "CA INHIB ccc" displayed in SDA (ccc = controller's inhibited this display).
	F11, K, identity (ADST)[2], Enter[5]	Enable/inhibit CA for specified track.
	F11, Slew	Enable/inhibit CA for specified track pair in conflict.

TABLE 5-1. NORMAL KEYBOARD ENTRIES (Continued)

Function	Entry Format'	Description
	F11, P (acid/Slew/both), Enter[5]	Enable/inhibit CA for specified track pair (tracks currently in conflict or pair-wise inhibited). ACID or slew or both must be entered.
	Fll , P, acid, Slew	Enable/inhibit CA for specified track pair (tracks not in conflict or not pair-wise inhibited).
	F11 , Q, M, region, (S/C), Enter[21]	Suppress (S) or Clear (C) Mode C Intruder (MCI) alerts in specified adapted MCI region (l-20) for entering controller. "MCI ZONE INHIB xyz" displayed in enterer's SDA (xyz = controllers inhibited on this display).
	F11 , Q, M, Z, Enter[21]	Master clear all MCI inhibit regions for the entering keyboard.
	Fll , Q, Q, Enter	Enable/inhibit display of CA zone suppression status list.
Alt. Restriction	F12, (N/S/E/W), nn, Enter	Enable altitude restriction display for specified area with altitude nn0.
	F12, (N/S/E/W), Enter	Disable altitude restriction display for specified area.
Geographic Restriction	F12, [L], i, ([rr], [a..a], [^, n..n] or Ajj), [delta], Slew	Display Local Geographic Restriction area. L (for Local) is optional if so adapted i = area i for local display (i = O-9) For circle and text areas: rr = circle radius (O-63) (optional) a..a = l-10 alphabetic characters of freeform text of line 1 of text area, optional n..n = l-1 0 alphanumerics for line 2 of text area, optional For message alert text areas: Ajj = jj'th message alert text (jj = O-99; site adapted at l-25 characters each.) delta = toggle the current state of the blink for the circle (if any) and message alert text.

TABLE 5-I. NORMAL KEYBOARD ENTRIES (Continued)

Function	Entry Format[1]	Description
	F12, [L], i, [rr], [a..a], [^, n..n], [delta], Enter	Modify existing Local Geographic Restriction display. L (for Local) is optional if so adapted. i = area i for local display (i = O-9) rr = circle radius (O-63) (N/A for message alert text areas) a..a = l-l 0 alphabetic characters for line 1 of text area (N/A for message alert text areas) n..n = 1-l 0 alphanumerics for line 2 of text area, optional; N/A for message alert text areas) delta = toggle the current state of the blink for the circle (if any) and message alert text.
	F12, [L],i,*, Slew	Relocate a Local Geographic Restriction area i = area i for local display. (i = 0-9), L (for Local) is optional if so adapted.
	F12, [L],i,+, Slew	Relocate text block within a Local Geographic Restriction display. i = area i for local display. (i = 0-9), L (for Local) is optional if so adapted.
	F12, [L],i,Enter	Inhibit the display of a Local Geographic Restriction area. i = area i for local display (i = 0-9), L (for Local) is optional if so adapted.
	F12, Q, Enter	Toggle all regional quicklook geographic areas at the enterer's display.
	F12, Q, (E/l), Enter	Enable/inhibit all regional quicklook geographic areas at the enterer's display.
	F12, Q, regional quicklook ID, Enter	Toggle a specific regional quicklook geographic area at the enterer's display.
	F12, Q, regional quicklook ID, (E/l), Enter	Enable/inhibit a specific regional quicklook geographic area at the enterer's display.
Run Down List	F13, identity (AD)[2], [^, line#], [^, remarks], Enter	Add/modify/delete a line in a Run Down tab list. Remarks = l-4 characters.

TABLE 5-1. NORMAL KEYBOARD ENTRIES (Continued)

Function	Entry Format'	Description
	F13, (A/M), Enter	Select Automatic/Manual Acknowledge mode for Run Down list.
	F13, identity (AD or line #)[2], Enter	Acknowledge Run Down list entry. Selected line stops blinking.
	F13, n (list#), ALL, Enter	Clear Run Down list number n (l-3).
	F13, (L/S), Enter	Select Long (L) or Short (S) length for Run Down list.
IF	F14, f, 0, Enter**	Enable/disable IF Test Program (may be entered only when system is in Test Mode). f = facility destination.
	F14, f, 1, message-contents, Enter**	Simulate ARTCC-to-ARTS interfacility (IF) message to facility f (O-2). Translate message to simulate interfacility format and transmit the accumulated buffer when a + is detected. Multiple F14, f, 1 s may be entered to transmit messages of length greater than is allowed by a single F14, f, 1. Following are special conversions made from entered data and translated for IF processing: Char. — Translated To * — space / — Longitudinal Redundancy Check (LRC) prepare character + — End of Message (EOM) /(virgule)
	F14, f, 2, Enter**	Disable/enable track update messages from being sent to ARTCC or another ARTS facility. f = facility destination (O-2).
	F14, f, 3, Enter**	Disable/enable time check for outputting of messages and for displaying "OLD" on tracks in handoff from ARTCC or another ARTS facility. f = facility destination (O-2).

TABLE 5-I. NORMAL KEYBOARD ENTRIES (Continued)

Function	Entry Format'	Description
	F14, f, 4, Enter**	Enable/disable time check for sending test messages to the ARTCC; i.e., enable/disable test message transmissions to the ARTCC. f = facility destination (O-2).
	F14, f, 5, fix pair, status, Enter**	Generate IF Test Loop Flight Plan. f = facility destination (O-2). fix pair: 3 char * 3 char status: A = Arrival, E = Overflt, P = Departure.
Target Generator	F15[22]	See Enhanced Target Generator, Para. 6.3.
F16 Multifunction	F16, C, 0, Enter**	Enable/inhibit display of FAST advisories at entering position.
	F16, C, S, Enter	Enable/inhibit display of landing sequence numbers at entering position.
	F16, C, A, Enter	Enable/inhibit display of runway advisories at entering position.
	F16, C, X, [OK, ^][7], identity (AS[2]), Enter[5]	Enable/suspend scheduling for the specified track.
	F16, C, 5, [OK, ^][7], identity (AS[2]), Enter[5]	Reset sequence numbers of all aircraft assigned to same runway as specified track.
	F16, C, R, [OK, ^][7], identity (S)[2,6], Slew	Resequence the aircraft pair specified by the entry.
	F16, C, P, [OK, ^][7], identity (AS)[2], Enter[5]	Enable/disable specified aircraft for priority sequencing.

TABLE 5-1. NORMAL KEYBOARD ENTRIES (Continued)

Function	Entry Format[1]	Description
	F16, C, M, [OK, ^][7], identity (AS)[2], Enter[5]	Designate/remove specified aircraft from missed approach status.

TABLE 5-2. IMPLIED KEYBOARD ENTRIES

Function	Entry Format[1]	Description
Beacon Readout	Slew, Enter • Unassociated track	Identify unassociated track for an LDB readout (see F7, B).
	Slew, Enter • Associated track • Track not in handoff status. • FDB does not have blinking "DM", "IF", "FP", "HO", "RDR", or beacon code. • Track controlled by enterer or paired position	Display track ACID, Reported Beacon Code (RBC), and Assigned Beacon Code (ABC) in the readout/preview area.
ACID Readout for GDBs	Slew, Enter • Ghost Data Block	Enable/disable the display of the parent ACID in the specified GDB.
Handoff Accept/Recall	Scratch pad[12,13,14], Slew, Enter	Track handoff accept (requires successful completion of ARTCC/ARTS communication). Optional first scratch pad data or assigned altitude.
	• Associated track • In handoff status • Entry made by designated receiver (handoff accept) • Entry made by control position (handoff recall) • Track not in "NAT" status	Track handoff recall (for handoff to ARTCC, requires successful ARTCC/ARTS or ARTS/ARTS communication) (see F5).

TABLE 5-2. IMPLIED KEYBOARD ENTRIES (Continued)

Function	Entry Format[1]	Description
Handoff Initiate	Controller[18] or C or Cnn or Delta, n (adapted ARTS site) or virgule, N, (dd) non-host ARTCC ID or aaad (ARTS-site-ID), [Controller[18]], [/[9]], Slew, Enter [OK, ^], aaad (ARTS-site-ID),", identity(ADS)[2, 6], Enter[5] • Associated track • Not in handoff status • Track controlled on this display	Initiate track handoff (if handoff to ARTCC, requires successful ARTCC/ARTS communication (see F5); if handoff is between two ARTS facilities, completion requires successful completion of ARTS/ARTS communication). nn = ARTCC control position (00-99) eligible to receive a handoff (adapted sector number) n = 1-NARTSQ(SV), adapted ARTS site aaad = ARTS-site-ID where aaa = three alpha characters and d = numeric (O-3) of the adjacent ARTS facility.
Inhibit Auto Handoff	Delta, Slew, Enter[21] • Associated track • Track controlled on this display or paired with enterer • Not training, arrival or VFR track • Not in handoff • Not inhibited from auto handoff initiate • No blinking "DM" or "IF" in FDB	Inhibit Inter-facility Auto Handoff for track (see F5).
Inhibit Intrafacility Auto Handoff	A, Delta, Slew, Enter[21] • Associated track • Track controlled on this display or paired with enterer • Not in handoff • Not inhibited from intrafacility auto handoff initiate	Inhibit Intrafacility Auto Handoff for track (see F5).

TABLE 5-2. IMPLIED KEYBOARD ENTRIES (Continued)

Function	Entry Format'	Description
Transfer Control After Handoff (ACD Only)	Slew, Enter • Associated track • Track just previously handed off to another display from a position at this ACD and completed Handoff countdown • Track displayed as white FDB • Track not in handoff to entering position • No blinking "RD" in FDB	Indicate control transferred for track after a handoff.
Display/Inhibit Associated Track FDB	Slew, Enter • Associated track • Not in handoff status • No RBC in FDB • No blinking "DM", "IF", "FP" or "HO" in FDB • FDB not on this display	Select/erase FDB readout (see F7, D).
Delete Frozen ARTS Data Block	Slew, Enter • ACD in RGW mode only • ARTS FDB, MCADB, or MCIDB	Delete display of a frozen ARTS FDB, MCADB, or MCIDB. Slew to any other location is invalid.
Inhibit Blinking "DM", "IF", "FP" or "HO"	Slew, Enter • Associated track • Not in handoff status • No RBC in FDB • Blinking "DM", "IF", "FP" or "HO" in FDB • Track controlled by enterer, or position paired with enterer, or by ARTCC and previously controlled by enterer	Inhibit blinking "DM", "IF", "FP" or "HO" in the FDB (no analogous explicit entry).

TABLE 5-2. IMPLIED KEYBOARD ENTRIES (Continued)

Function	Entry Format[1]	Description
Initiate Control	Identity (A)*, Slew, Enter • Unassociated track	Activate track in arrival/departure or coast/suspend list (see F1).
	acid[32], [^, beacon code or + or / or /1 or /2 or /3 or /4 or Delta], [^, Delta, first scratch pad[12, 13] or assigned altitude[14]], [^, +, second scratch pad or Pilot Reported Altitude [12, 13, 36]], [^, a/c type], Slew, Enter Unassociated track	Initiate and activate new track. First Delta = radar-only FP (see F1).
Leader	leader direction (1 digit: l/2/3/4/5/6/7/8/9), Slew, Enter • Associated track	Modify offset direction of identified track at this display, or at all displays if the entering keyboard is adapted for implied Global Leader changes (see F7,L). If a "5" was entered, any previous single track modify offset entry is cancelled and normal leader direction criteria apply.
	Controller ID (1 or 2 characters), space, leader direction, (1 digit): 0/1 /2/3/4/5/6/7/8/9) Enter	Modifies leader direction of FDBs displayed at entering display but controlled elsewhere. If a single CD character is entered, the Keyboard subset of a paired Keyboard is **assumed.** Otherwise, the Keyboard subset of the enterer is assumed. A leader of "0" turns the function off.
	global leader direction (2 identical **digits: 11/22/33/44/66/77/88/99), Slew, Enter** • **Associated track**	Modify offset direction of identified track at all displays (see F7,L).
	ldr **dir (1/2/3/4/6/7/8/9)**, U, Enter	Select offset direction of current and future LDBs and MCIDBs at this display.

TABLE 5-2. IMPLIED KEYBOARD ENTRIES (Continued)

Function	Entry Format[1]	Description
Beacon Code Modify	Slew, Enter • Associated track • Track not in handoff status • FDB has flashing beacon code (RBC or ABC) or "RDR" displayed • Track controlled by enterer, or position paired with enterer, or-by ARTCC and previously controlled by enterer.	Modify ABC to the RBC. If the track is radar-only FP and is flashing an RBC, it is amended to a beacon FP. If the track is beacon FP and is flashing "RDR', it is amended to a radar-only FP (see F7, M).
Override Inter-facility Display Presentation	Slew, Enter • Associated track • Track not in handoff status • FDB does not have blinking "DM", "IF", "FP", or "HO" • Paired position where FDB is not displayed • FDB does not have RBC displayed • Track controlling symbol is a "C" • Track does not have departure status	Modify the position symbol "C" (for inter-facility) to the entering controller's symbol and disable the force condition of the FDB (no analogous explicit entry).
Aircraft Type	a/c type (4 chars), Slew, Enter • Associated track	Add to or modify aircraft type (see F7, H).
First Scratch Pad	Scratch pad data 3 chars)[12] or assigned altitude (3 digits), Slew, Enter • Associated track	Add to or modify first scratch ARTCC-CONTROL-ID data. Scratch pad cannot = "Cnn" if nn = ARTCC control position (2 digits) eligible to receive a handoff (entry in ARTCC-CONTROL-ID (SV) table)(see F7, Y).
Second Scratch Pad	+, scratch pad data (3 chars)[12, 36], or Pilot Reported Altitude (3 digits), Slew, Enter • Associated track	Add to or modify second scratch pad or Pilot Reported Altitude (see F7, Y).

TABLE 5-2. IMPLIED KEYBOARD ENTRIES (Continued)

Function	Entry Format[1]	Description
Scratch Pad and Aircraft Type	First scratch pad data (3 chars)[12] or assigned altitude (3 digits), or [+, second scratch pad data (3 chars) or Pilot Reported Altitude (3 digits) [12, 36]^, a/c type (2-4 chars), Slew, Enter * Associated track	Set or modify a scratch pad or assigned altitude or Pilot Reported Altitude and a/c type (see F7,Y).
Scratch Pad and Leader	(One or two characters), Slew, Enter • Associated track	Display scratch pad data in FDB per entered character(s) (which match site adapted data), current system configuration and track status (no analogous explicit entry). Also changes FDB leader direction. If the track is in handoff status and the entry is made from the position that the track is in handoff to, then a track handoff accept (requires successful completion of ARTCC/ARTS communication) is also performed.
Emergency Airport Readout	*, Slew, Enter, Slew, Enter	Display related airport data and point-to-point bearing/range. If an adapted airport is located within 1 NM of the second slew, position a blinking square and 4 site-adapted alphanumeric characters over the airport and pack readout with data including bearing/range from first slew to airport. If no airport is found, display point-to-point bearing/range from first slew to second slew.

TABLE 5-2. IMPLIED KEYBOARD ENTRIES (Continued)

Function	Entry Format[1]	Description
	*, (1/2/3) [L], Slew, Enter	Display (lighted) airport data. Search for nearest adapted airport within (SV) NM of the SED coordinates capable of handling the aircraft category designated by the entered digit. If L is entered, search for nearest (within SV NM) lighted airport capable of handling designated aircraft category. Position a blinking square and 4 site-adapted alphanumeric characters over the airport and pack readout with data.
Selected Unassociated Beacon Code Readout	*, [beacon code], Enter • Discrete unassociated beacon code entered	Force display for all identified unassociated tracks at the entering control position. LDB(s) will be displayed/blink (SV) for (SV) scans.
Immediate Pointout (Force FDB)	*, *, controller, ^, controller[18], Slew, Enter • Associated track	Force display of the specified FDB to the displays designated by the controller(s) entered.
Pointout	Controller[18], *, Slew, Enter • Associated track • Track not in handoff status	Force display of a flashing FDB with originating control symbol and "PO" designated by SED coordinates to the display identified by controller.
Pointout Accept/ Recall	Slew, Enter • Associated track • Track in pointout status • Entry made by designated receiver (pointout accept) • Entry made by control position (pointout recall)	Accept/recall pointout: delete flashing of FDB, "PO" and control position characters.
Handoff Accept of Pointout	*, *, Slew, Enter • Associated track • Track in pointout status • Entry made by designated receiver	Force pointout into a handoff accept. Delete flashing of FDB, "PO", and initial control position. Replace control position symbol with receiver controller symbol and reflect change on initiating controller's display.

TABLE 5-2. IMPLIED KEYBOARD ENTRIES (Continued)

Function	Entry Format[1]	Description
Flight Breakup	Z, numeric (0-9), Slew, Enter • Associated track	Create new FP based on FP data from the identified track.
TCA Quick ACID	Y, Slew, Enter • Unassociated track	Create new associated track with an implied (SV) acid, (e.g., YYYT-Cii acid, TTTCAii, etc., where ii = 00 — 99).
inhibit Departure Auto Drop	Delta, Delta, Slew, Enter • Associated track • Track controlled at this display • Track has airport departure status	Inhibit an airport departure track from automatic termination due to altitude condition (no analogous explicit entry).
Time-to-Fly Data	*, T, Slew, Enter, Slew, Enter	Display bearing, range, time-to-fly, and ETA from specified aircraft to specified point
Abbreviated Flight Data Entry	acid[32], [^, beacon code or + or / or /1 or /2 or /3 or /4 or DELTA], [^, controller[18]], [^, status (A/P), single symbol airport ID (A-Z, O-9) or E*], [^, Delta, first scratch pad[12, 13, 34]], [^, +, second scratch pad[12, 13, 34]], [^, a/c type[25]], [^, requested alt (3 digits)], Enter	Reserve track file for the entered FP data. First + = assign beacon code from IFR block, / = assign code from first VFR block, /1 = assign code from second VFR block, etc. First Delta = radar-only FP. E* denotes overflight for unknown airport. Optional fields may be entered in any order (see F6).
VFR Flt Plan	acid[32], ^, entry/exit fix [*], ^, [a/c cat,/], a/c typ, [^, assigned alt], [^, controller[18]], Enter[27] • Entering display not in training nor entering keyboard in maintenance mode. acid, ^, entry/exit fix data, ^, [a/c cat, (1 alpha), /], a/c typ, [^, assigned alt], [^, controller[18]], Enter[27] • Entering display not in training nor entering keyboard in maintenance mode.	Initiate ARTS/NAS VFR FP message (see F9).
Hospital Readout	*, hospital id (1 char), Enter • Selected hospital id in current hospital list	Display a flashing square at the location of the identified hospital. Erase the hospital tab list.

TABLE 5-2. IMPLIED KEYBOARD ENTRIES (Continued)

Function	Entry Format'	Description
Keyboard Quicklook	Controller[18], Enter • Valid controller is the only data entered. • Status of controller and enterer are identical (both live or both training).	Select/deselect quicklook of controller. If controller = enterer, readout positions being quicklooked at enterer's display.
Heavy Jet Indicator	H, (alpha) Slew, Enter	Display/Amend/Delete the display of the heavy jet indicator.
No Flight Plan Alert	Slew, Enter • NO FP Alert displayed F4, Slew, Enter	Clear NO FP Alert LDB on entering control positions display. Clear NO FP Alert LDB on all displays on the same sensor as the entering control position.
Display Latitude and Longitude	*L, Slew, Enter	Display the latitude and longitude of the trackball when the SED is depressed. Allowed from mosaic display only.
Display System Coordinates	*S, Slew, Enter	Display the system coordinates of the trackball when the SED is depressed. Allowed from mosaic display only.

TABLE 5-3. SUPERVISORY KEYBOARD ENTRIES

Function	Entry Format'	Description
Handoff	F5, E/I, [^, artcc#], Enter[21]	Enable/inhibit Interfacility Auto Handoff Processing (AHOP) function.
	F5, A, E/I, Enter[21]	Enabled/inhibit Intrafacility Auto Handoff Processing (INTRA AHOP) function.
ATIS	F7, A, altimeter region ID, Enter	Enable/inhibit display of specified altimeter region (3 alphanumerics).

TABLE 5-3. SUPERVISORY KEYBOARD ENTRIES (Continued)

Function	Entry Format[1]	Description
	F7, A, altimeter region ID, ^, altimeter data, Enter	Modify specified altimeter (3 alphanumeric character ID) to the specified altimeter data. Altimeter data = M (Missing), A (enable Automatic mode), or a 4-digit altimeter followed by SPACE,E (optional).
Configuration	F7, C, numeric (1-9), [A-Z and *] or [*], Enter[22, 28]	Resectorize to a different entry/exit fix configuration (i.e., reassign all store tracks, flight plans, and future flight plans in accordance with the requested configuration). Optional sector identifier will cause a specific sector or all sectors to be resectorized.
	F, C, ^, 0, ^, d, Enter[26]	Select/inhibit the Interfacility (IF) program. d = interfacility facility (I-3). (SMS only)
	F, C, ^, 01, ^, d, Enter[26]	Terminate all IF track files in flight plan/store status and select IF. d = interfacility facility (I-3). (SMS only)
	F, C, ^, 04, ^, d, Enter[26]	Change IF capability to radar data processing (II-C to Ill-D interface). d = inter-facility facility (I-3). (SMS only).
	F, C, ^, 05, ^, d, Enter[26]	Change IF capability to flight data processing (Ill-D to II-C interface). d = interfacility facility (I-3). (SMS only).
	F7, C, entry/exit fix data[8], ^, [a/c type or requested alt. (R and 3 digits), ^,] scratch pad[12,13], Enter	Modify default scratch pad for fix pair, fix pair/aircraft type, or fix pair/requested alt. combination to entered scratch pad.
	F7, C, Configuration Sector ID, ^, scratch pad[12,13], Enter	Modify default scratch pad for all fix pairs associated with the entered Configuration Sector ID.
CRDA	F7, N, runway pair configuration (numeric, 1 -CRCFGQ), (T/S/A), Enter[22]	Enable specified CRDA runway pair configuration. T = configuration TIE mode S = STAGGER mode A = APG mode.

TABLE 5-3. SUPERVISORY KEYBOARD ENTRIES (Continued)

Function	Entry Format[1]	Description
	F7, N, runway pair configuration (numeric, 1 -CRCFGQ), D, Enter	Disable specified CRDA runway pair configuration.
Parrot (RSM)	F7, R, rr, S, ss, Enter	Select/inhibit Parrot RSM rr (1 to RSM_NUMBER(SV)) for optional sensor ss (0 to NSENSQ(SV)-1).
System	F7, S, time (hhmmss, 6 digits), Enter**	Update system time.
	F7, S, +, Enter**	Use WWVB time.
	F7, S, Enter	Delete ATIS and GI.
	F7, S, alpha char, Enter**	Initiate/modify specified ATIS.
	F7, S, alpha char, *, Enter**	Initiate/modify specified ATIS, delete GI.
	F7, S, *, Enter**	Delete ATIS character.
	F7, S, *, GI data(l -12 a/n), Enter**	Delete ATIS and initiate/modify GI.
	F7, S, alpha char, GI data (l-l 2 a/n), Enter**	Initiate/modify specified ATIS and GI.
	F7, S, altimeter setting (4 digits), Enter[24]	Update system altimeter setting (only in single altimeter region/ DASI environment) (2700-3200 or 09151084 if SV millibar-alt = TRUE inclusive).
	F7, S, numeric (1-9), ^, GI data (l-l 2 a/n), Enter[24]	Update unique GI data.
	F7, S, numeric (1-9), Enter[24]	Delete unique GI data.
	F7, S, /, Enter[21,22]	Use WWVB date.
	F7, S, /, mmddyy, Enter[21,22]	Enter system date.
Tabular	F7, T, G1, Slew	Relocate geo Region ID tab list.
	F7, T, G2, Slew	Relocate geo Region Name tab list.
	F7, T, time (hhmm, 4 digits), A, Enter[21,22]	Terminate all store tracks with ETA/ PTD less than time specified.
Leader	F7, L, special offset identifier (2 identical alpha characters), Enter	Enable/Disable Global Offset processing by area.
	F7, L, special offset identifier (1 alpha character), leader direction (1 digit: l/2/3/4/6/7/8/9), Enter	Modify Special Offset leader by area.

TABLE 5-3. SUPERVISORY KEYBOARD ENTRIES (Continued)

Function	Entry Format[1]	Description
MSAW	F7, V, (GI/GE/MI/ME), Enter[21, 22]	Enable/disable: Approach monitor: GI=inhibit, GE=enable MSAW: MI=inhibit, ME=enable.
	F7, V, T, (E/I), region (l-10 (SV)), Enter[21, 22]	Enable/inhibit GTM inhibit region.
	F, V, ^, T, D, Enter[26]	Display list of enabled MSAW GTM Inhibit Regions on the SMC-PC.
Switch Sensor	F7, X, sensor#1 identifier, ^, sensor#2 identifier, Enter	Align all displays currently associated with sensor #1 to sensor #2. Sensor identifier = 1 alpha char.
	F7, X, sensor identifier, ^,*, Enter	Align all displays currently associated with the specified sensor to their original site adapted sensor.
CDR Initiate Extractor	F7, 1, I, D, i, [SCR[O][17]], Enter[21,22]	Initiate extraction on disk i (O-l). SCR = scratch status for CDR disk area. SCRO (0 = optical disk) required if data to be scratched is less than 15 days old.
Terminate Extractor	F7, 1, T, Enter[21,22]	Terminate extraction.
Available/Unavailable Disk	F7, 1, (A/U), D, i, S, n, [SCR[O][17]] Enter[21.22]	Specify disk i (O-l) on SMC n (O-2) as available (A) or unavailable (U). SCR = scratch status (only with A) for CDR disk area. SCRO (0 = optical disk) required if data to be scratched is less than 15 days old. If making disk unavailable and extraction is active on the disk, extraction continues on an available disk.
Enable Classes	F7, 1, E. [^, xx, ^, xx, ... ^, xx], Enter[21.22]	Enable extraction of data classes specified by xx. If no classes specified, enable standard classes[11].
Disable Classes	F7, 1, D, [^, xx, ^, xx, ... ^, xx], Enter[21.22]	Disable extraction of data classes specified by xx. If no classes specified, disable all classes[11].
Manual Reconfiguration	F7, 2, ALL, Enter[26]	Initialize all displays (SMS only).

TABLE 5-3. SUPERVISORY KEYBOARD ENTRIES (Continued)

Function	Entry Format[1]	Description
	F7, 2, B, nnn, E, Enter[21,22]	Enable automatic switching to either RDM interface for the RDBM connected to display nnn (2-3 digits).
	F7, 2, B, nnn, E, rr, Enter[21,22]	Disable automatic switching for the RDBM connected to display nnn (2-3 digits), locking the RDBM onto RDM NID rr (hex).
	F7, 2, B, R, E, rr, dd, Enter[21,22]	Enable automatic switching for all RDBMs with interfaces to RDM NID rr (hex) and RDM NID dd (hex).
	F7, 2, B, R, E, rr, Enter[21,22]	Disable automatic switching for all RDBMs with an interface to RDM NID rr, locking the RDBMs onto RDM NID rr (hex) (includes switching any RDBMs currently active on the other RDM paired to RDM rr).
	F7, 2, C, x (E/I), Enter[21,22]	Enable/inhibit the Instrument Approach Count message for airport associated with 'x'.
	F7, 2, D, nnn, (E/I), Enter[21,22]	Enable/inhibit display number nnn (2-3 digits).
	F7, 2, I, (E/I), Enter[21,22]	Enable/inhibit ILS monitor function (must be ILS monitor position).
	F7, 2, I, region #, (E/I), Enter[21,22]	Enable/inhibit the specified ILS Monitor/Special Offset region # 1, 2, ...
	F7, 2, K, nnn, (E/I), Enter[21,22]	Enable/inhibit keyboard. nnn = three-digit decimal keyboard number.
	F7, 2, L, ss[33], Enter[21,22]	Enable/inhibit overload sensing and protection on sensor ss (0-NSENSQ (SV)-1).
	F7, 2, S, ss[33], R, r, Enter[21,22]	Enable radar interface r (0 to number of paths -1) on sensor ss (0 — NSENSQ(SV)-1). Disable auto switching of radar interfaces.
	F7, 2, S, ss[33], R, A, Enter[21,22]	Enable automatic switching on sensor ss (0-NSENSQ(SV)-1).

TABLE 5-3. SUPERVISORY KEYBOARD ENTRIES (Continued)

Function	Entry Format[1]	Description
	F7, 2, S, F, (E/D), Enter[21,22]	Enable/disable masking on all sensors.
	F7, 2, S, F, ss[33], (E/D), Enter[21,22]	Enable/disable sensor ss (0-NSENSQ(SV)-1) all segments.
	F7, 2, S, F, ss[33], ^, n, (E/D), Enter[21,22]	Enable/disable sensor ss (0-NSENSQ(SV)-1) and segment n (l-3).
	F7, 2, S, T, ss[33], (E/D), Enter[21,22]	Enable/disable sensor tracking for sensor ss (0-NSENSQ (SV)-1).
	F7, 2, TST, [sensor identifier], (E/l), Enter[21,22]	Enable/inhibit test targets for this display. Sensor identifier is only allowed for mosaic displays.
	F7, 2, (D/O/Q/S), (E/l), Enter[21,22]	Enable/inhibit specified SMC printouts: D = Debug errors 0 = Operational class Q = RTQC s = Sensor.
	F7, 2, (M/R/T/V), (E/I), Enter[21,22]	Enable/inhibit specified function: M = MSAW control R = Memory readout T = Test mode v = Supervisory control.
	F7, 2, A, (E/l), Enter	Enable/Inhibit TMS.
	F7, 2, A, B, baud rate, Enter	Update TMS interface baud rate. Baud rate = 2400, 4800, 9600, 19200, or 38400.
	F7, 2, A, T (3-30), Enter	Update TMS TZ interval rate.
Performance Monitor	F7, 3, D, nnn, ^, mmmss, Enter[21,22]	Enable DP Performance Monitor for display number nnn (2-3 digits) with output interval mmm (01-233) minutes and collection interval ss (00-90) seconds.
	F7, 3, D, Enter[21,22]	Disable DP Performance Monitor.

TABLE 5-3. SUPERVISORY KEYBOARD ENTRIES (Continued)

Function	Entry Format[1]	Description
	F7, 3, B, [hhmm], [M/MP/Md], Enter[21,22]	Radar/beacon target report monitor enable. hhmm = output interval. M = inhibit maximum function, MP = allow maximum processing with no data output, Md = print TP Track and Radar Beacon Target reports d times prior to maximum.
	F7, 3, B, Enter[21,22]	Toggle radar/beacon target repot-t monitor function (enable/inhibit).
	F7, 3, CT, [hhmm], [M/MP/Md], Enter[21,22]	TP CPU monitor enable. hhmm = output interval. M = inhibit maximum function, MP = allow maximum processing with no data output, Md = print TP Status Report d times prior to maximum.
	F7, 3, CT, Enter[21,22]	Toggle TP CPU monitor function (enable/inhibit).
	F7, 3, A, [hhmm], [M/MP/Md], Enter[21,22]	CTS monitor enable. hhmm = output interval. M = inhibit maximum function, MP = allow maximum processing with no data output, Md = print CTS Status Report d times prior to maximum.
	F7, 3, A. Enter[21,22]	Toggle CTS monitor function (enable/inhibit).
	F7, 3, CC. [hhmm], [M/MP/Md], Enter[21,22]	CP CPU monitor enable. hhmm = output interval. M = inhibit maximum function MP = allow maximum processing with no data output, Md = print CP CPU Status Report d times prior to maximum.
	F7, 3, CC, Enter[21,22]	Toggle CP CPU monitor function (enable/inhibit).

TABLE 5-3. SUPERVISORY KEYBOARD ENTRIES (Continued)

Function	Entry Format[1]	Description
	F7, 3, DC, [hhmm], [M/MP/Md], Enter[21,22]	CP Coordinated Report enable. hhmm = output interval M = inhibit maximum function MP = allow maximum processing with no data output Md = print CP Coordinated Report d times prior to maximum.
	F7, 3, DC, Enter[21,22]	Toggle CP Coordinated Report function (enable/inhibit).
	F7, 3, DT, [hhmm], [M/MP/Md], Enter[21,22]	TP Coordinated Report enable. hhmm = output interval. M = inhibit maximum function MP = allow maximum processing with no data output Md = print TP Coordinated Report d times prior to maximum.
	F7, 3, DT, Enter[21,22]	Toggle TP Coordinated Report function (enable/inhibit).
	F7, 3, Q, m, Enter[21,22]	Select time interval of m minutes for collection and print of CQARS data.
	F7, 3, SC, [A/C/F/U/L], [hhmm], Enter[21,22]	CP Summary Report enable/disable. Data collection synchronization parameters: A = Peak associated tracks C = Peak Active Data File (ADF) usage F = Peak Flight Data File (FDF) usage U = Peak unassociated tracks L = Peak CPU utilization hhmm = output interval.
	F7, 3, SC, Enter[21,22]	Toggle CP Summary Report function (enable/inhibit).
	F7, 3, SC, P, Enter[21,22]	Request CP Summary Report printout.
	F7, 3, ST, Enter[21,22]	Toggle TP Summary Report function (enable/inhibit).

TABLE 5-3. SUPERVISORY KEYBOARD ENTRIES (Continued)

Function	Entry Format[1]	Description
	F7, 3, ST, (C/L), [hhmm], Enter[21,22]	TP Summary Report enable/disable. Data collection synchronization parameters: C = Peak Active Track File (ATF) usage L = Peak utilization hhmm = output interval.
	F7, 3, ST, P, Enter[21,22]	Request TP Summary Report printout.
	F7, 3, Q, m, Enter[21,22]	Select time interval of m mimutes for collection and print of CQARS data.
NOTE: F7, 4 filters apply to the CP CTS extraction class CP).		
Altitude Filter	F7, 4, FA, [aaa],[Sss], Enter[21,22]	Enable altitude filter above aaa (100's of feet) for specified sensor (default sensor = 0). ss = sensor (0-NSENSQ(SV)-1). If no altitude entered, disable filter for specified sensor, or all sensors if none specified.
Beacon Code Filter	F7, 4, FB, [^, bbbb,E/I],[Sss], Enter[21,22]	Enable/inhibit extraction of data pertaining to beacon code bbbb (up to 4 beacon codes may be entered). ss = sensor (0-NSENSQ(SV)-1); defaults to sensor 0. Disable filter if no beacon data specified.
ETG Filter	F7, 4, FE, (E/I), Enter[21,22]	Enable/inhibit extraction of data for ETG tracks (CTS extraction).

TABLE 5-3. SUPERVISORY KEYBOARD ENTRIES (Continued)

Function	Entry Format[1]	Description
Range-Azimuth Filter	F7, 4, FR,[rl] or [rl r2,/,az1 az2]or [rl r2 r3,/,az1 az2 az3], and [Sss],Enter[21,22]	Specify range-azimuth filter. Range = ri (2 digits NM) Azimuth = azi (3 digits azimuth). If one range entered: extract tracks inside specified range. If two ranges and two azimuths entered: extract tracks between specified ranges and azimuths. If three ranges and azimuths entered: extract tracks between first and second range and azimuth, and between second and third range and azimuth. Disable filter if no range/ azimuth entered. Sensor ss (0 to NSENSQ(SV)-1); defaults to sensor 0.
Subsystem Filter	F7, 4, FS, ss, (E/l), Enter[21,22]	Enable/inhibit extraction for sensor ss (0 to NSENSQ(SV)-1).
Sign On/Off	F7, 5, P, Enter	Request printing of summary report of the open/closed status of all adapted positions.
	F7, 6, C, [P], (E/l), Enter[21,22]	Enable/inhibit Center Radar ARTS Presentation (CENRAP). PE = Enable CENRAP for ASR triggers. E = Enable CENRAP for trigger generator.
	F7, 6, T, P, (E/l), Enter[21,22]	Enable/inhibit processing of Transfer Primary Radar Target (TP) messages.
Display Geographic Regions	F10, Enter	Enable region ID tab list.
	F10, G1, S, Enter	Scroll next group of region IDs in the region ID tab list.
	F10, region ID[35], Enter	Enable region name tab list.
	F10, G2, S, Enter	Scroll region name tab list to display the next group of region names and descriptive text.
	F10, G, (1/2), Enter	Erase region ID (G1) or region name (G2) tab list from the display.

TABLE 5-3. SUPERVISORY KEYBOARD ENTRIES (Continued)

Function	Entry Format[1]	Description
	F10, region ID[35], ^, region name, [^ ...], ^, (E/I), Enter	Enable/inhibit display of one or more specified geographical regions. Region name(s) (1-16 a/n).
	F10, region ID[35], ^, [region name, ^], nnn, (E/I), Enter	Enable/inhibit display of the specified geographical region of the specified display. region ID = I-2 alphas region name = 1-I 6 a/n nnn = 2-3 digit decimal display number. Not all region IDs have region names (e.g., FDB Initial Range/Altitude Filters for Arrivals/Departures/Overflights).
	F10, (region ID[35] or *), ^, I, Enter	Inhibit display of geographical regions. If a region ID (I-2 alphas) is entered, erase only the geographical regions for the specified region ID. * = erase all geo regions.
	F10, region ID[35], ^, S, Enter	Scroll next group of geographic regions of the specified region ID (I-2 alpha).
Conflict Alert	F11 , A, (E/I), Enter[21]	Enable/inhibit CA processing.
	F11, L, ss[33], (E/I), Enter[21]	Enable/inhibit intersensor CAs associated with sensor ss (0 to NSENSQ(SV)-1).
	F11, M, (E/I), Enter[21]	Enable/inhibit MCI CA processing.
	F11, Q, M, D, Enter[26]	Display list of all keyboards that have an MCI Inhibit Region enabled on the SMC-PC.
	F11, Q, n (Type 1),[^, n(Type 2)], (S/C), Enter[21]	Suppress (S) or Clear (C) CA processing in specified type 1 and type 2 areas. If suppressed, “CA ZONE INHIB” displayed in SDA.
	F11 , Q, Z, Enter[21]	Master clear all type 1 and type 2 area suppressions. Clear “CA ZONE INHIB” in SDA.
	F11, R, Enter[21]	Real-Time Quality Control (RTQC) status printout request.

TABLE 5-3. SUPERVISORY KEYBOARD ENTRIES (Continued)

Function	Entry Format[1]	Description
	F11, R, xxx, [^,xxx],[^,xxx], ... Enter	Automatically apply RTQC registration correction factors to specified sensors. xxx = sensor name (with "ALL" meaning all sensors).
	F11 , R, xxx, R, (+/N) range, A, (+/N) azimuth, Enter	Apply entered RTQC registration correction factors to specified sensor and set that sensor to manual mode (i.e., don't automatically use correction factors that are computed by the RTQC registration analysis algorithm). xxx = sensor name, range = range correction factor in NM, (N2-+2) azimuth = azimuth correction factor in Azimuth Change Pulses (ACPs) (n23-+23). Both range and azimuth may be a series of decimal digits including an optional decimal point, e.g., R+1.005A+10.05.
	F11 , R, xxx/yyy/zzz, Enter	Specify RTQC registration analysis sample size for specified sensor pair. xxx = first sensor name, yyy = second sensor name, zzz = sample size (10-999).
Geographic Restriction	F12, [G],i, ([rr],[a..a],[^,n..n] or Ajj), [delta], Slew or Enter	Display Global Geographic Restriction area. G (for Global) is optional if so adapted. i = global area number (i = O-9). For circle and text areas: rr = circle radius (O-63) (N/A for site adapted areas) optional a..a = l-l 0 alphabetic characters of freeform text (N/A for site adapted areas), for line 1 of text area, optional

TABLE 5-3. SUPERVISORY KEYBOARD ENTRIES (Continued)

Function	Entry Format'	Description
		n..n = l-l 0 alphanumerics for line 2 of text area, optional. For message alert text areas: Ajj = jj'th message alert text (jj = O-99; site adapted at l-25 characters each.) delta = toggle the current state of the blink for the circle (if any) and message alert text. Slew for new area, Enter for adapted area.
	F12, [G], i, [rr], [a..a], [^, n..n], [delta], Enter	Modify existing Global Geographic Restriction display. G (for Global) is optional if so adapted i = global area number (i = O-9) rr = circle radius (O-63) (N/A for site adapted areas or message alert text areas) a..a = l-l 0 alphabetic characters for line 1 of text area (N/A for site adapted areas or message alert text areas) n..n = O-l 0 alphanumerics for line 2 of text area (N/A for message alert text areas) delta = toggle the current state of the blink for the circle (if any) and message alert text.

TABLE 5-3. SUPERVISORY KEYBOARD ENTRIES (Continued)

Function	Entry Format[1]	Description
	F12, [G], i, *, Slew	Relocate Global Geographic Restriction area (N/A to site adapted circle and text areas). Applies to all adapted displays. i = global area number (i = O-9). G (for Global) is optional if so adapted.
	F12, [G], i, +, Slew	Relocate text block within a Global Geographic Restriction display. Applies only to the entering display. i = global area number (i = O-9). G (for Global) is optional if so adapted.
	F12, [OK,^][7], [G], i, Enter	Inhibit display of a Global Geographic Restriction area. Applies to all adapted displays. i = global area number (i = O-9). G (for Global) is optional if so adapted.
F16 Multifunction	F16, C, E, Enter	Enable FAST in operational or training mode depending on mode of entering keyboard.
	F16, C, I, Enter	Disable FAST in operational or training mode depending on mode of entering keyboard.
	F16, C, T, il, Enter	Change airport configuration for training mode. i = site specific configuration (i = 0 - NO-CFGQ).

TABLE 5-4. MAINTENANCE KEYBOARD ENTRIES

Function	Entry Format[1]	Description
Beacon/Radar On-Line Performance Monitor (BROPM)	F7, T, B, Slew[21,22]	Relocate position at which BROPM tab list is displayed.
	F7, 3, E, mm, [P], Enter[21,22]	Enable BROPM function with update interval mm (01-99) minutes. P = SMC printout option.
	F7, 3, E, 00, Enter[21,22]	Disable BROPM function.
	F7, 3, E, P, Enter[21,22]	Request current BROPM printout. BROPM must be active.
	F7, 3, E, Enter[21,22]	Enable/disable display of BROPM data.
	F7, 3, E, Ss, Enter[21,22]	Select sensor for BROPM data. Allowed from mosaic display only. s = sensor identifier (site-adapted character)

5.1 KEYBOARD ENTRY NOTES

1. Entry Format:

- F1 -F16 indicates function selection
- a/n = alphanumeric
- Uppercase parameters within parentheses ( ) separated by virgules (/) indicate one must be selected: e.g.. (A/B/C/D).
- brackets [ ] indicate an optional parameter
- commas (not entered) Indicate the separation of fields
- ^ = space (entered only as a field separator, i.e., not needed after last entered field)

2. Identity (ADST):

A = aircraft identity (ACID)

D = discrete assigned beacon code (DBC), four octal digits

s = slew (i.e., trackball) SED and ENTER

T = tabular line identifier (may include controller symbol and subset identifier with an asterisk '*' separating tab line and controller data).

3. “Enter” may be used only if DBC or / or + is included in the entry.

4. Slew may be used only if the track file is to be given active status; otherwise, “Enter” must be used.

5. “Enter” may not be used if Slew (S) identity is used.

6. On receipt of Slew (S) identity, the SED is not homed if either Multiple Function Mode (M) or F2 (Reposition) is selected.

7. “OK” not legal at maintenance position.

8. Data is defined as:

   ACID — two to seven alphanumerics, of which the first is alphabetic; not “ALL”; not exactly two alphabetic

   ABC — four octal digits or +, /, /1, /2, /3, or /4

   Controller — One or two characters. Subset number (must be entered if controller is in a different subset from the enterer) followed by alphanumeric controller symbol, e.g., 1A.

   Entry/exit fix — three characters * three characters, [status] or three characters*, [status] or * three characters, [status]. Status: A = arrival, P = departure, and E = overflight. For a Flight Data entry (F6), the entry and/or exit fix can be abbreviated to a single alphanumeric character which maps to site adapted data to produce a 3-character fix.

   Examples:

FIX*FIX	APT*P
FIX*FIXE	*APT
APT*	*APTA

   ETA/PTD — four numerics followed by E (e.g., 2059E)

   Delta (radar only) or Delta and scratch pad data[12, 13] or Delta and assigned altitude data (for active tracks only)[14], or requested altitude (three numerics).

9. If entered position is partially combined and optional virgule (/) is entered, then this position is made the handoff receiver.

10. “ILL FNCT” error if previous entry has not completed processing.

11. CDR extraction data class codes (* = non-standard):

    TA = Associated tracking data
    TU = Unassociated tracking data
    MA = MSAW alarms
    CA = Conflict alert
    KF = Keyboard functions
    AF = Auto functions
    IF = Inter-facility messages
    RB = Radar reinforced beacon target reports
    BT = Beacon target reports

RT = Radar-only target reports
co = ASCII status message
NC = No-conflict data
AT* = ATMIS data
TP* = TP Active Track Data (ATF)
GD* = Ghost Data File
CP* = Data (ADF and FDF)
FS* = FAST Advisory Data.
BR* = Beacon Replies (ARTS IIE only, not available in test mode, or for Mode S/ASR-9 interface processing, or when CENRAP is enabled)
WX = Weather Data (ARTS IIIE only)

12. Existing track condition indicators (NAT, CST, AMB, RDR, and XXX) are not allowed as entered scratch pad data.

13. Scratch pad data consist of up to three alphanumerics or special characters.

14. Any three numeric characters entered are interpreted as assigned altitude, and this track file is eligible for display as a PDB if the altitude entered is within altitude filter limits on any other display. (For active tracks only.)

15. If "OK space" is entered from a controlling position or a position paired with a controlling position, the entry is interpreted as a forced handoff accept/recall action.

16. IF message types:

DA = Data Acknowledge
DX = Data Retransmit
DR = Data Reject
DT = Test Response
TR = Test
TU = Track Update
TA = Track Accept
TI = Initiate Control
FP = Flight Plan
AM = Flight Plan Modify
cx = Flight Plan Cancellation
TL = Transfer Recall (ARSA)
TM = Transfer Initiate (ARSA)
TN = Accept Transfer (ARSA)
TP = Transfer primary radar target message
TS = Transfer secondary radar target message
RF = Request Flight Plan

17. SCR implies status for the CDR disk file area. Scratch status is defined as meaning the entire CDR disk file area is available for recording, i.e., extraction data are written starting at the beginning of the CDR disk file area. "SCRO" is required to scratch data less than 15 days old. A disk with non-scratch CDR file status has extraction data recorded at the next available location.

18. If controller is in a different subset or facility from enterer, subset number must be entered preceding controller symbol, e.g., 2B. If entry is made from a paired position, the subset of the paired to controller is assumed.

19. Must include subset number preceding controller symbol, e.g., 1 B.

20. The "OK" ^s not optional when a forced handoff is required and must be entered by the controlling position. If any other position attempts a forced handoff, the "OK" indicates the enterer need not be the controller of the track identified in the message.

21. Illegal (ILL FNCT or ILL POS) at position with training status.

22. Illegal (ILL FNCT) from a remote position.

23. Illegal (ILL FNCT) from a remote position unless site parameter SUPLEGAL is set to zero.

24. Remote positions are allowed to delete or update only the unique altimeter or GSI data for which they are adapted.

25. Aircraft type may be 2-4 characters, the first of which must be alpha. Aircraft type can also be abbreviated to two alphanumeric characters which map to site-adapted data to produce a 2-4 character aircraft type, e.g., 37 = B737. These two alphanumeric characters cannot conflict with a valid two-character controller identification.

26. Illegal (ILL POS) unless entered from SMC.

27. VFR Flight Plan (F9) data are defined:

    acid — 2-7 alphanumeric characters: first is alphabetic; not "ALL"; not exactly 2 alphabetic characters.

    Entry exit fix — 3 characters or 3 characters, * or 3 characters * 3 characters or 3 characters * 3 characters, *. The asterisk (*) indicates the exit fix is an intermediate fix instead of a destination fix. If one fix is entered, it identifies the exit fix and default departure fix (C_VFP_DEP_FIX (SV)) is used as the entry fix.

    a/c cat — aircraft category (1 alphabetic character and a virgule (/)).

    a/c typ — aircraft type, 2-4 alphanumeric characters of which the first is alphabetic.

    alt — assigned altitude, three numeric characters, third character must be a 5.

    Controller — One or two characters. Subset number (must be entered if controller is in a different subset from the enterer) followed by alphanumeric controller symbol, e.g., 1A.

28. ILL POS if entered at, or specifies a training (non-operational) position.

29. VFR flight plan (F9) exit fix data — 3 characters or 3 character, *.
    [The asterisk (*) indicates the entered fix is an intermediate fix instead of a destination fix.]

30. Unused.

31. Entering position must be downed by manual reconfiguration.

32. If the ACID begins with a numeric (2-6 characters) for new FPs (except those entered via F1), a site-adapted character is inserted at the beginning of the ACID.

33. Only one digit is required for sensor numbers smaller than 10. Sensor number not entered for single sensor system.

34. A series of three numerics is not allowed for this entered scratch pad data.

35. The legal region IDs are:

A = ACRAFT TYPE DISP FORCE RANGE
B = ACRAFT TYPE DISP INHIB RANGES
c = ALTIMETER REGIONS
D = ASSOC TRACK FILTER REGIONS
E = AUTO ASSOC ARR INHIB REGIONS
F = AUTO ASSOC ARRIVAL REGIONS
G = AUTO ASSOC DEPARTURE REGIONS
H = AUTO ASSOC OVERFLIGHT REGIONS
I = AUTO DISASSOC ARR REGIONS
J = AUTO DISASSOC DEP REGIONS
K = AUTO DISASSOC OVERS REGIONS
L = AUTO DROP UNK ARR REGIONS
M = INTER AUTO HANDOFF REGIONS
N = AIRSPACE VIOLATOR REGION
0 = CA/MSAW IFR ALARM INH REGIONS
P = CA/MSAW REM ALARM REGIONS
Q = CA/MSAW TYPE I/II AREAS
R = CDR RANGE/AZIMUTH FILT AREAS
s = CLUTTER AREAS
T = CRDA RUNWAY APPROACH AREAS
u = FDB FILTERS ARR/DEP/OVR AREAS
v = FREEZE REGIONS
w = ILS MONITOR/SPEC OFFSET BOXES
x = MAXIMUM TG TARGET RANGE
Y = MCI INHIBIT REGIONS
z = MSAW APM INHIBIT REGIONS
AA = MSAW CLIMB ALERT REGIONS
BB = MSAW GTM INHIBIT REGIONS
cc = MSAW TERRAIN MAP
DD = RADAR ONLY INHIBIT REGIONS
EE = REMOTE SYSTEM MONITOR AREAS
FF = REQ FP INNER/OUTER REGIONS
GG = REQ FP INVALID MODE C REGIONS
HH = SATELLITE ARR TAB LIST REGION
II = SENS SEGMENT MASKING REGIONS
JJ = TRACK CUTOFF RANGES
KK = UNASSOC TRACK FILTER REGIONS
LL = DEPARTURE NO BLINK HO REGION
MM = OVERFLIGHT NO BLINK HO REGION
NN = BRITE LIST AREA
0 0 = INTRA AUTO HANDOFF REGIONS
PP = NO FLIGHT PLAN ALERT REGIONS
QQ = RADAR SORT BOX
RR = OVERRIDE SENSOR REGION
ss = TYPE III AREAS

36. A series of three numerics in the second scratch pad data is interpreted as Pilot Reported Altitude (PRA). If '000' is entered, the PRA is canceled.

6.0 ON-LINE PROGRAMS AND ASSOCIATED PRINTOUTS

On-line (resident) programs include: confidence tests, subsystem status reports, Enhanced Target Generator (ETG), and performance monitoring.

6.1 CONFIDENCE TESTS

Confidence tests are executed on-line within the framework of the operational program at a predetermined rate. These confidence tests provide a method of evaluating subsystem performance in real-time. If failures exceed a threshold, a message is sent to the SMS monitor and PC printer.

On-line confidence tests are:

- Disk
- Inter-facility (IF)
- SRAP.

6.1.1 Disk Confidence Test

The Disk Confidence test consists of writing test data on the disk and comparing the computed checksums This test is activated and is executed at a frequency determined by system parameters. The parameters are:

Frequency:	0 to 60 tests per minute; nominal frequency used is 10 tests per minute.
Interval:	0 seconds to 60 minutes; nominal interval used is 30 seconds.
Errors:	0 to 100 errors; nominal error threshold is 5 errors.

If the accumulated errors exceed the threshold during the specified time interval, a failure is declared and the following message is output to the SMS monitor and PC printer:

mm/dd/yy hh:mm:ss NID# DISK CONFIDENCE TEST FAIL

6.1.2 Interfacility (IF) Confidence Test

The IF Confidence test consists of the transmission of an IF Test Data message (TR) to the ARTCC. This message is transmitted within approximately 30 seconds after the last Acceptance message (DA) was received from the ARTCC.

The IF Confidence test expects a Data Test message (DT) from the ARTCC within approximately 30 seconds after the TR message was sent. If the DT message is not received within approximately 30 seconds, the following error message is output to the SMS monitor and PC printer:

mm/dd/yy hh:mm:ss NID# IF TEST FAIL ZCa

where: a = (Refer to local site adaptation for corresponding ARTCC symbol identifier).

6.1.3 SRAP Confidence Test

The SRAP Confidence test monitors the receipt of the Radar Data Acquisition (RDAS) and Beacon Code Acquisition System (BDAS) test targets, and determines if the range and azimuth are within tolerance (range 55 NM±3 NM, azimuth 0 ACPs±64 ACPs).

Both RDAS and BDAS test targets are checked when radar tracking is enabled. In a backup mode, only the BDAS test target is checked.

Each scan, the test target's reported range and azimuth are correlated with the predetermined nominal values. If either test target is out of tolerance, the following failure message is output to the SMS monitor and PC printer:

mm/dd/yy hh:mm:ss NID# SRAP TEST TGT FAIL cc s

where: c = Octal channel number
s = Logical sensor number

Test target failure does not initiate any SRAP switching.

6.2 SUBSYSTEM STATUS REPORTS

The subsystem status performance monitoring function moves current performance statistics, which are maintained by other CSUs, to previous statistics at the end of a predetermined amount of time. It then clears the current statistics. Previous statistics are compared to the maximum statistics and if they are greater than maximum, they replace maximum statistics. Previous statistics are also compared to threshold statistics and if they are greater than threshold, an error message is output to the SMS monitor and PC printer.

Processor utilization is also part of the status report as a percentage of time the processor is busy. If utilization percentage exceeds a threshold, an error message is output to the SMS monitor and PC printer.

A subsystem status report can be requested by using menu entries (paragraph 4.7.7) or by an SMC-PC keyboard entry (Appendix A).

An echo of the manual entry (Appendix G) is output to the SMS monitor and PC printer. The status report is output on the HSP, if it is on-line; otherwise, the report is output on the PC printer.

6.2.1 Serial Interface Adapter Subsystem Status Report

A Serial Interface Adapter Subsystem Status Report (Figure 6-l) is available for the FDP chassis. It reports the status of the DVME-704 board and its processor utilization.

The SMS menu and SMC-PC keyboard entries to request this report include any FDP NID number. The status report is printed on the PC printer.

```
mm/dd/yy  hh:mm:ss  NID#  DP/SIA STATUS  REPORT:
                    I FRAME              READY  RECEIVE            REJECT
COUNTS          PREVIOUS   MAXIMUM     PREVIOUS    MAXIMUM     PREVIOUS    MAXIMUM
INPUT:             xxxxx      xxxxx        xxxxx      xxxxx        xxxxx      xxxxx
OUTPUT:            xxxxx      xxxxx        xxxxx      xxxxx        xxxxx      xxxxx
                SEQUENCE   ERRORS            LOST  FRAMES
COUNTS          PREVIOUS   MAXIMUM     PREVIOUS    MAXIMUM
INPUT:             xxxxx      xxxxx         N/A        N/A
OUTPUT:             N/A        N/A        xxxxx      xxxxx
                    TIMEOUTS            RETRANSMISSIONS         RECEIVE  NOT  READY
COUNTS          PREVIOUS    MAXIMUM     PREVIOUS    MAXIMUM     PREVIOUS    MAXIMUM
INPUT:              N/A        N/A         N/A        N/A          xxxxx      xxxxx
OUTPUT:            xxxxx      xxxxx        xxxxx      xxxxx        N/A         N/A

PROCESSOR  UTILIZATION  PERCENTAGES:  P=XXX  M=XXX
```

FIGURE 6-l. SERIAL INTERFACE ADAPTER STATUS REPORT

6.2.2 Network Subsystem Status Report

A Network Subsystem Status Report (Figure 6-2) is available for any chassis on the network. It reports the status of frames received, transmitted, retransmitted, and lost. It also reports maximum frames for each status.

The SMS menu and SMC-PC keyboard entries to request this report include any network chassis NID number. The status report is printed on the PC printer.

```
mm/dd/yy  hh:mm:ss  NID#  NETWORK  STATUS  REPORT:
NETWORK:
FRAMES  RECEIVED      FRAMES  TRANSMITTED          FRAMES  RE-TRANSMITTED
  P=XXXXX  M=XXXXX      P=XXXXX  M=XXXXX             P=XXXXX  M=XXXXX
FRAMES  LOST
  P=XXXXX  M=XXXXX
```

FIGURE 6-2. NETWORK SUBSYSTEM STATUS REPORT

6.2.3 Monitor/Control Subsystem Status Report

A Monitor/Control Subsystem Status Report (Figure 6-3) is available from any SMC chassis. It reports the status of messages received, number of CDR writes, clock data, and processor utilization.

The SMS menu and SMC-PC keyboard entries to request this report include any SMC NID number. The status report is printed on the PC printer.

```
mm/dd/yy  hh:mm:ss  NID#  SMON  STATUS  REPORT:
KEYBOARD  MSGS  RECEIVED            SMON  MSGS  RECEIVED
P=XXXXX   M=XXXXX                   P=XXXXX   M=XXXXX
HBEAT  MSGS  RECEIVED               FORMAT  MSGS  RECEIVED
P=XXXXX   M=XXXXX                   P=XXXXX   M=XXXXX
DOWNLOAD  MSGS  RECEIVED
P=XXXXX   M=XXXXX
REPLAY  MSGS  RECEIVED              RETRACK  MSGS  RECEIVED
P=XXXXX   M=XXXXX                   P=XXXXX   M=XXXXX
CDR  MSGS  RECEIVED                 CDR  MSGS  RECORDED
P=XXXXX   M=XXXXX                   P=XXXXX   M=XXXXX
CDR  NUMBER  OF  WRITES             CDR  TIME  IN  CDR
P=XXXXX   M=XXXXX                   P=XXXXX   M=XXXXX
INV  MSGS  RECEIVED                 CDR  MSGS  LOST
P=XXXXX   M=XXXXX                   P=XXXXX   M=XXXXX
INV  CLOCK  DATA                    HISSING  CLOCK  DATA
P=XXXXX   M=XXXXX                   P=XXXXX   M=XXXXX
CPU  UTILIZATION  PERCENTAGE
C=xxx     M=XXX
```

FIGURE 6-3. MONITOR/CONTROL SUBSYSTEM STATUS REPORT

6.2.4 Radar Subsystem Status Report

Subsystem Status Radar reports are available for the serial and parallel radar interfaces. A Serial Radar Subsystem Status Repot-t (Figure **6-4)** is available from any RGW or TP chassis. It reports the status of the active interfaces, messages received, parity errors, number of re-syncs, and processor utilization. The SMS menu and SMC-PC keyboard entries to request this report include any RGW or TP. The status report is printed on the PC printer.

```
mm/dd/yy  hh:mm:ss  NID#  SERIAL  RADAR  STATUS  REPORT:

NUMBER  OF  INTERFACES  =  XX
S   OPR   SEL    MSGS-RECEIVED                PARITY  ERRORS        NUM-OF-RE-SYNCS
x    x     X    P=XXXXXX   M=XXXXXX           P=XXXXXX   M=XXXXXX    P=XXXXXX   M=XXXXXX
x    x     X    P=XXXXXX   M=XXXXXX           P=XXXXXX   M=XXXXXX    P=XXXXXX   M=XXXXXX
x    x     X    P=XXXXXX   M=XXXXXX           P=XXXXXX   M=XXXXXX    P=XXXXXX   M=XXXXXX
x    x     X    P=XXXXXX   M=XXXXXX           P=XXXXXX   M=XXXXXX    P=XXXXXX   M=XXXXXX
x    x     X    P=XXXXXX   M=XXXXXX           P=XXXXXX   M=XXXXXX    P=XXXXXX   M=XXXXXX
x    x     X    P=XXXXXX   M=XXXXXX           P=XXXXXX   M=XXXXXX    P=XXXXXX   M=XXXXXX
x    x     X    P=XXXXXX   M=XXXXXX           P=XXXXXX   M=XXXXXX    P=XXXXXX   M=XXXXXX
x    x     X    P=XXXXXX   M=XXXXXX           P=XXXXXX   M=XXXXXX    P=XXXXXX   M=XXXXXX
x    x     X    P=XXXXXX   M=XXXXXX           P=XXXXXX   M=XXXXXX    P=XXXXXX   M=XXXXXX
x    x     X    P=XXXXXX   M=XXXXXX           P=XXXXXX   M=XXXXXX    P=XXXXXX   M=XXXXXX
x    x     X    P=XXXXXX   M=XXXXXX           P=XXXXXX   M=XXXXXX    P=XXXXXX   M=XXXXXX
x    x     X    P=XXXXXX   M=XXXXXX           P=XXXXXX   M=XXXXXX    P=XXXXXX   M=XXXXXX
x    x     X    P=XXXXXX   M=XXXXXX           P=XXXXXX   M=XXXXXX    P=XXXXXX   M=XXXXXX
x    x     X    P=XXXXXX   M=XXXXXX           P=XXXXXX   M=XXXXXX    P=XXXXXX   M=XXXXXX
x    x     X    P=XXXXXX   M=XXXXXX           P=XXXXXX   M=XXXXXX    P=XXXXXX   M=XXXXXX

NOTE:   OPR - 0 :  CHANNEL  OPERATIVE,  N  :  CHANNEL  NOT  OPERATIVE
        SEL - S  :  CHANNEL  SELECTED,   N  :  CHANNEL  NOT  SELECTED

PROCESSOR   UTILIZATION   PERCENTAGE
        P=  XXX  M=  XXX
```

FIGURE 6-4. SERIAL RADAR SUBSYSTEM STATUS REPORT

A Parallel Radar Subsystem Status Report (Figure 6-5) is available from any SG chassis. It reports the status of the active interfaces, messages received, buffer overflows, parity errors, number of re-syncs, and processor utilization.

The SMS menu and SMC-PC keyboard entries to request this report include any SG. The status report is printed on the PC printer.

```
mm/dd/yy  hh:mm:ss  NID#  PARALLEL  RADAR  STATUS  REPORT:

S   OPR   SEL   MSGS-RECEIVED        OVERFLOWS             PARITY  ERRORS        NUM-OF-RE-SYNCS
x    x    x    P=XXXXX    M=XXXXX    P=XXXXX  M=XXXXX      P=XXXXX    M=XXXXX    P=XXXXX    M=XXXXX
x    x    x    P=XXXXX    M=XXXXX    P=XXXXX  M=XXXXX      P=XXXXX    M=XXXXX    P=XXXXX    M=XXXXX

NOTE:   OPR - 0  :  CHANNEL  OPERATIVE,  N  :  CHANNEL  NOT  OPERATIVE
        SEL - S  :  CHANNEL  SELECTED,   N  :  CHANNEL  NOT  SELECTED

PROCESSOR   UTILIZATION   PERCENTAGE
        P=  XXX  M=XXX
```

FIGURE 6-5. PARALLEL RADAR SUBSYSTEM STATUS REPORT

6.2.5 Interfacility Subsystem Status Report

An Interfacility Subsystem Status Report (Figure 6-6) is available from any CP chassis. It reports the status of I/O messages/errors, Longitudinal Redundancy Check (LRC) errors, and parity errors.

The SMS menu and SMC-PC keyboard entries to request this report include any CP. The status report is printed on the PC printer.

```
mm/dd/yy  hh:mm:ss   NID#  IFC  STATUS  REPORT:
 INPUT  MESSAGES      OUTPUT  MESSAGES      IN-MSG  ERRORS        OUT-MSG  ERRORS
 P=XXXXX  M=XXXXX     P=XXXXX  M=XXXXX      P=XXXXX  M=XXXXX      P=XXXXX  M=XXXXX
 P=XXXXX  M=XXXXX     P=XXXXX  M=XXXXX      P=XXXXX  M=XXXXX      P=XXXXX  M=XXXXX
 P=XXXXX  M=XXXXX     P=XXXXX  M=XXXXX      P=XXXXX  M=XXXXX      P=XXXXX  M=XXXXX
 LRC  ERRORS          PARITY  ERRORS
 P=XXXXX  M=XXXXX     P=XXXXX  M=XXXXX
 P=XXXXX  M=XXXXX     P=XXXXX  M=XXXXX
 P=XXXXX  M=XXXXX     P=XXXXX  M=XXXXX
```

FIGURE 6-6. INTERFACILITY SUBSYSTEM STATUS REPORT

6.2.6 TMS Subsystem Status Report

A TMS Subsystem Status Report (Figure 6-7) is available from any CP chassis. It reports the status of the number I/O messages and errors of the input and output messages.

The SMS menu and SMC-PC keyboard entries which request this report include any CP. The status report is printed on the PC printer.

```
mm/dd/yy  hh:mm:ss  NID#  TMS  STATUS  REPORT:
 INPUT  MESSAGES      OUTPUT  MESSAGES      IN-MSG  ERRORS        OUT-MSG  ERRORS
 P=XXXXX  M=XXXXX     P=XXXXX  M=XXXXX      P=XXXXX  M=XXXXX      P=XXXXX  M=XXXXX
```

FIGURE 6-7. TMS SUBSYSTEM STATUS REPORT

6.2.7 DASI Subsystem Status Report

A DASI Subsystem Status Report (Figure 6-8) is available from any CP chassis. It reports the status of the individual on-line Digital Altimeter Setting Indicators (DASIs), messages received, and errors received.

The SMS menu and SMC-PC keyboard entries which request this report include any CP. The status report is printed on the PC printer.

```
mm/dd/yy  hh:mm:ss  NID#  DASI  STATUS  REPORT:
ID      STATUS        NUM  MSGS  RECEIVED    CPU  %  UTIL          DRIVER  I/O  ERRORS
0       XXX-LINE      P=XXXXX  M=XXXXX      P=XXX  M=XXX          C=XXXXX  M=XXXXX
1       XXX-LINE      P=XXXXX  M=XXXXX      P=XXX  M=XXX          C=XXXXX  M=XXXXX
2       XXX-LINE      P=XXXXX  M=XXXXX      P=XXX  M=XXX          C=XXXXX  M=XXXXX
3       XXX-LINE      P=XXXXX  M=XXXXX      P=XXX  M=XXX          C=XXXXX  M=XXXXX
4       XXX-LINE      P=XXXXX  M=XXXXX      P=XXX  M=XXX          C=XXXXX  M=XXXXX
5       XXX-LINE      P=XXXXX  M=XXXXX      P=XXX  M=XXX          C=XXXXX  M=XXXXX
6       XXX-LINE      P=XXXXX  M=XXXXX      P=XXX  M=XXX          C=XXXXX  M=XXXXX
7       XXX-LINE      P=XXXXX  M=XXXXX      P=XXX  M=XXX          C=XXXXX  M=XXXXX
8       XXX-LINE      P=XXXXX  M=XXXXX      P=XXX  M=XXX          C=XXXXX  M=XXXXX
ID      DASI  DETECTED  ERRORS            MSG  LENGTH  ERRORS     GARBLED  ERRORS
xx      C=XXXXX  M=XXXXX                  C=XXXXX  M=XXXXX        C=XXXXX  M=XXXXX
```

FIGURE 6-8. DASI SUBSYSTEM STATUS REPORT

6.3 ENHANCED TARGET GENERATOR (ETG)

The ETG provides the capability to generate and control simulated targets. The ETG is designed to operate in either of two modes: test mode or training mode.

In test mode, the ETG generates simulated target reports to be used for the checkout and testing of an ARTS IIIE operational program. SRAP inputs are ignored.

In training mode, the ETG generates simulated target reports in a live environment to provide a controller training capability. SRAP inputs and ETG inputs are processed by the TP.

The mode of operation is selected from a supervisory display keyboard.

The ETG has the following functional capabilities:

- Run simultaneously with live targets, but not interfere with control of live targets
- Designate selected displays as training without disturbing operational system
- Target generator activation/deactivation from a training display without affecting live traffic
- Initiation and control of targets from keyboards or scenario from disk
- Capacity for 128 uniquely identifiable targets
- Designate targets as radar only, beacon only, or radar-beacon
- Wind effects to simulate target drift
- Noise in target position (range and azimuth)
- Freezing of simulated targets
- Placing of targets in hold patterns
- Automatic final approach control that causes a target to proceed to, and land at, a designated runway
- No-gyro simulated approaches with headings of left or right and with standard rate of turn (3 degrees/second) or one-half standard rate of turn (1.5 degrees/second)
- Separate and controllable system time and altimeter setting on training displays
- Initialization of training displays at program start-up
- Automatic hold pattern descent function
- Simulate creation and movement of weather data.

Once the system has been initialized according to paragraph 6.3.1, the following target and simulated weather characteristics can be controlled via the ETG control functions (see Table 6-l):

- Target initiation
- Target termination

- Target course
- Target rate of turn
- Target speed
- Target acceleration
- Target altitude and validity
- Target rate of change of altitude
- Target beacon code, validity, IDENT (SPI), weak or strong target
- Target identifier inhibit/enable
- Target holding pattern
- Target automatic holding fix descent
- Target radar and/or beacon reporting
- Target automatic approach control
- Inhibit automatic approach control target termination
- Report quality
- Simulated weather initiation
- Simulated weather termination
- Simulated weather course.

TABLE 6-I. ETG FUNCTION CONTROL COMMANDS

Command (F15)	Description
X, M, Enter	Designate a display as training.
Z, M, Enter	Return a training display to live status.
X, T, Enter	Enable ETG (Training Mode).
X, T, S, Enter	Enable ETG (Test Mode).
Z, T, Enter	Disable Target Generator.
X, I, [(C/F), filename], Enter	Read and execute a scenario identified by the file-name. C = CP disk F = floppy disk
Z, I, Enter	Disable Training Scenario Input.
X, F, Enter	Enable Freeze Mode.

TABLE 6-1. ETG FUNCTION CONTROL COMMANDS (Continued)

Command (F15)	Description
Z, F, Enter	Disable Freeze Mode.
Z, S, Enter	Inhibit target identifiers.
X, S, Enter	Enable target identifiers.
X, N, rr, zz, [Ess], Enter	Enable noise to be added to reported range and azimuth: rr = range noise in hundredths of nm zz = azimuth noise in hundredths of a degree ss = one or two digits (0 to NSENSQ(SV)-1) and is optional at a single-sensor display.
Z, N, [Ess], Enter	Inhibit noise. ss = one or two digits (0 to NSENSQ(SV)-1) and is optional at a single-sensor display.
X, B, bb, rr, [Ess], Enter	Enable blip/scan ratio: bb = beacon blip/scan ratio rr = radar blip/scan ratio ss = one or two digits (0 to NSENSQ(SV)-1) and is optional at a single-sensor display.
Z, B, [Ess], Enter	Disable blip/scan function. ss = one or two digits (0 to NSENSQ(SV)-1) and is optional at a single-sensor display.
Z, C, ss, ^, ss, ... Enter	Disable sensor(s) ss. (0 - NSENSQ(SV)-1). One or two digits.
X, C, ss, ^, ss, ... Enter	Enable sensor s. (0 - NSENSQ(SV)-1). One or two digits.
M, fd, ^, td, Enter	Map scenario from display number fd to display number td.
W, A, loup, Vwv, Hhh, Enter	Specify wind characteristics: loup = wind altitude (4 digits). lo = lower altitude. up = upper altitude (00-40)(thousands of feet). vvv = wind velocity in knots (000 - 100). hh = wind direction in degrees (x10).
N, xxx, rwy, Enter	Activates the preprogrammed auto-final for airport xxx, and runway rwy.
Y, f, Enter	Automatic descent for all targets at holding fix. f = single alpha character fix identifier.
Z, W, Enter	Disable effects of wind.

TABLE 6-I. ETG FUNCTION CONTROL COMMANDS (Continued)

Command (F15)	Description
P, aa, bbb, cc, ddd, hhh, Enter	Modify initial target coordinates and heading: aa = current range in nautical miles. bbb = current azimuth in degrees. cc = new range in nautical miles. ddd = new azimuth in degrees. hhh = new heading in degrees.
X, POSN [L, R, X, Y, Z], LVL [1-5], Enter	Turn on specified positions (POSN) for desired traffic levels (LVL). Multiple position and level fields can be specified.
X, *, Enter	Turns all displays off, runs “old” scenarios without screening.
X,A, Enter	Display current display(s) settings in the readout area.
E, a, b, Enter	Changes symbol “a” to symbol “b” on training positions within the same subset as the entering position (multiple pairs of symbols can be entered, separated by a SPACE).
E, *, *, Enter	Restores all training position symbols to original symbols.
X, R, [+/N], rng, ^, [+/N], azi,^, ss, Enter	Enable range and azimuth registration correction factors for sensor ss. (0 to NSENSQ(SV)-1). mg = range registration error in NM. A series of decimal digits, including an optional plus (+) or negative (N) sign and optional decimal point (-2 - +2 value range). azi = azimuth registration errors in ACPs. A series of decimal digits, including an optional plus (+) or negative (N) sign and optional decimal point (-23 - +23 value range).
Z, R, ss, Enter	Erase previous range/azimuth registration factors for the specified sensor (ss).
TN, Slew	Initiate target TN at SED coordinates.
TN, Enter	Terminate target TN.

TABLE 6-l. ETG FUNCTION CONTROL COMMANDS (Continued)

Command (F15)	Description
TN, Rrrr.r, Zzzz.z, [Ess], Enter	Initiate target at specified range (0 - 256 (SV) nm, decimal value optional; default = 0) and specified azimuth (0 - 360 deg; decimal value optional; default = 0). ss = one or two digits (0 to NSENSQ(SV)-1) and is optional at a single sensor display.
TN, V, [vvv or vvv/vvv], [r], Enter	Establish or change speed of target: vvv = speed in knots (000 - 500) vvv/vvv = beginning/ending velocity r = change rate (0 - 5, or F, or *rr.rr; default: 45 kt/min.) (see Table 6-2).
TN, A, [aaa or aaa/aaa], [r] [Delta, v], Enter	Establish or change altitude of target: aaa = altitude in hundreds of feet aaa/aaa = beginning/ending altitude r = change rate (0 - 5, or F, or *rr.rr) (see Table 6-3) v = Mode C validity (O-3, default=3) (see Table 6-5).
TN, (H/HL/HR), (hhh or hhh/hhh), [r], Enter	Establish or change heading of target. H = establish or modify heading HL = left turn HR = right turn hhh = heading (000 - 360 degrees) hhh/hhh = beginning/ending heading r = turn rate (O-7, or F, or *r.rr) (see Table 6-4).
TN, (HH/HLH/HRH), f, [r], Enter	Place target in a hold pattern: f = single alpha character fix identifier r = turn rate (I-7, or F, or *r.rr) (see Table 6-4).
TN, Bbbbb, [Delta, v], [W], [I], Enter	Establish target with beacon code bbbb. v = Mode 3/A validity (O-3, default = 3) (see Table 6-6) W = establish weak target I = squawk ID.
TN, (R/G/L/F/T), Enter	Initiate no-gyro right (R) or left (L) turn at 3 degrees per second or right (G) or left (F) at 1.5 deg/sec. or terminate (T) turn.
TN, P, Enter	Establish a beacon-only target.
TN, Q, Enter	Establish as radar-only target.

TABLE 6-I. ETG FUNCTION CONTROL COMMANDS (Continued)

Command (F15)	Description
TN, Jq, Enter	Establish ARTS IIIA quality for target TN: (q = O-7). The ARTS IIIA quality is also used to determine target confidence, quality, track eligibility, beacon run length, radar run length, beacon hit count, and bit 25.
TN, S, Enter	Enable or inhibit the display of the target ID number.
TN, Cn, [Ess] Enter	Create a ring of 2^n (O-5) targets symmetrically spaced in azimuth over 360 degrees at the range of target. ss = one or two digits (0 to NSENSQ(SV)-1) and is optional at a single sensor display.
TN, N, xxx, rwy, Aa.a, E(N)eee, Enter	Enable automatic approach control for target: xxx = airport ID, rwy = runway number, Aa.a = glideslope angle, E(N)eee is altitude adjustment at inner marker, (feet) N indicates a negative adjustment.
TN, N, Enter	Enable abbreviated automatic approach control for target.
TN, *, Enter	Do not terminate target when runway is reached. Target will proceed to specified (SP) altitude and heading.
TN, D,[n], Enter	Report n (O-7) duplicates of target, all at same azimuth and with a range difference of 3 nautical miles. Default = 0 (inhibit duplicate targets).
TN, I, Enter	Ident command.
TN, K, [n], [P/Q], [Ess], Enter	Inhibit target reports for n (l-1 5) scans. If n is absent, inhibit reports until next TN, K command. P = inhibit beacon reports Q = inhibit radar reports ss = sensor number specifies the sensor number ss for which the inhibit applies. If Ess is not specified, the inhibit applies to the sensor associated with the entering keyboard.
TN, DT, Enter	Delay activation of an initial target or display/activate a previously delayed target.

TABLE 6-I. ETG FUNCTION CONTROL COMMANDS (Continued)

Command (F15)	Description
X,L,<IN or OUT or OFF>	Simulate the movement of weather IN = Moves simulated weather in by 1 NM (SP) each weather update cycle. OUT = Moves simulated weather out by 1 NM (SP) each weather update cycle. OFF = Turn off movement of weather.
X,L,t,br,er,bz,[ez],[Ess]	Initiate weather data t = type of weather (a digit l-6) br = 3-digit beginning range er = 3-digit ending range bz = 3-digit beginning azimuth ez = optional 3-digit ending azimuth ss = one or two digits (0 to NSENSQ(SV)-1) and is optional at a single sensor display.
Z,L,t,[Ess]	Terminate weather data t= type of weather (a digit l-6) ss = one or two digits (0 to NSENSQ(SV)-1). If Ess not entered, entry applies to all sensors.

NOTES

- TN = target number; it identifies any target (0 — MNTARQ-1) (127). It does not need to be entered if Slew is used and the coordinates entered are within 1/3 of an inch of the desired target. Enter means Enter, or slew Enter.

- Brackets [ ] indicate an optional parameter.

- ^ = space.

- Uppercase parameters in parentheses separated by virgules (/) indicate one must be selected, e.g., (R/G/L/F/T).

- Commas are used to separate parameters and are not entered.

TABLE 6-2. ETG AIRSPEED CHANGE RATE

Change Rate Character	Speed Change Rate
0	45 knots/Min
1	60 knots/Min
2	75 knots/Min
3	90 knots/Min
4	120 knots/Min
5	225 knots/Min
F	Instantaneous
*	User specified

NOTE

If the asterisk (*) is used to specify the change rate, the desired speed change rate must follow the asterisk. The change rate may be specified to hundredths of a knot/minute, e.g., *75.45.

TABLE 6-3. ETG ALTITUDE CHANGE RATE

Entry to Select Desired Altitude Change Rate	Desired Altitude Change Rate (SV)
	i = Beacon Subsystem ft./sec.
0	ALCRi1 Q = 300
1	ALCRi2Q = 600 (Default value)
2	ALCRi3Q = 1200
3	ALCRi4Q = 1800
4	ALCRi5Q = 2400
5	ALCRi6Q = 3000
6	ALCRi7Q = 3600
7	ALCRi8Q = 4500
F	Instantaneous
*	User specified

NOTE

If the asterisk (*) is used to specify the change rate, the desired speed change rate must follow the asterisk. The turn rate may be specified to hundredths of a degree per second, e.g., **375.45.**

TABLE 6-4. ETG DEGREE OF TURN

Change Rate Character	Turn Change Rate
0	1 deg/sec
1	1.5 deg/sec
2	2 deg/sec
3	3 deg/sec
4	4 deg/sec
5	5 deg/sec
6	6 deg/sec
7	7 deg/sec
F	instantaneous
*	User specified

NOTE

If the asterisk (*) is used to specify the turn rate, the desired turn rate must follow the asterisk. The turn rate may be specified to hundredths of a degree per second, e.g., *3.25.

TABLE 6-5. ETG MODE C VALIDITY

Mode C Validity Character	Description
0	No replies or all replies garbled.
1	One reply is not garbled.
2	One garbled reply and one ungarbled reply have identical altitudes.
3	Two ungarbled replies have identical altitudes.

TABLE 6-6. ETG MODE 3A VALIDITY

Mode 3/A Validity Character	Desired Mode 3/A Validity
0	0
1	1
2	2
3	3

6.3.1 ETG Activation

Remote displays are inhibited from making ETG entries.

The following general guidelines apply to ETG:

- Function control commands have the following format: F15, Command, Enter (depression of the F15 key is optional if the ETG is in the training mode).
- When initiating a training target, specification of a target identifier is optional. The program assumes the lowest number for the target ID.
- When entering a target command, the target identifier need not be entered, if the target is identified by slew entry.
- When operating in the test mode, headings can be entered in hundredths of a degree (Hhhh.hh).

Enable test mode by making the following supervisory display keyboard entry:

F7, 2, T, E, Enter

System Response:

mm/dd/yy hh:mm:ss NID# RCFG (sk) TEST MODE SEL

where: sk = Subset and position symbol of entering keyboard.

Initiate test mode by making the following supervisory display keyboard entry:

F15, X, T, S, Enter

The test mode is now active for the entire system, and all alphanumeric data from live traffic will disappear from all active system displays (the live analog data will still be presented).

To operate in the training mode, make the following display keyboard entries:

1. Select the display(s) to be used in the training mode.
2. Fully consolidate all positions on the desired training display(s) to a position on a display that is not already in training by the following entry:

F7, C, to, fr, +, Enter

where: fr = Subset number and keyboard symbol for desired training position from which consolidation is requested.

to = Subset number and keyboard symbol for position to which consolidation is being made. That position will accept the live data for the above training position (cannot be on the same display with the training position).

System Response:

mm/dd/yy hh:mm:ss NID # FCON (sk) to, fr

where: sk = Subset number and position symbol of keyboard at which entry was made.

3. To make a display a training position, make the following keyboard entry at each desired training position (at least one display must remain in live status):

F15, X, M, Enter

System Response:

mm/dd/yy hh:mm:ss NID # STAT (sk) (dd) = TNG

where: dd = Display at which status has changed

TNG = Training mode status

sk = Subset number and keyboard symbol of keyboard at which entry as made.

4. To activate the ETG, make the following entry from any training display:

F15, X, T, Enter

6.3.2 ETG Deactivation

Return a display to the live mode by making the following entry:

F15, Z, M, Enter

The above entry can be made to return each position to the live mode, as long as at least one display remains in the training mode.

System Response:

mm/dd/yy hh:mm:ss NID # (dd) (sk) = ACT

where: dd = Display at which status has changed

sk = Subset number and keyboard symbol of keyboard at which entry was made

ACT = Active status

If all training displays are to be returned to the live mode, make the following sequence of keyboard entries:

1. F15, Z, T, Enter (At one training display only. This entry deactivates the ETG).

2. F15, Z, M, Enter (At each training display. This entry returns each training display to the live mode).

Table 6-7 lists the ETG printouts.

TABLE 6-7. ETG OUTPUTS

output	Description
(date)(time) STAT sk dd = ACT	Display changed to active status.
(date)(time) STAT sk dd = TNG	Display changed to training status.
(date)(time)TRAINING CAPACITY SENS (s)	Training track deleted to make room for live track.
(date)(time) NID # GDB TRNG LOSS (nn)	Ghost Data Blocks lost at Training Display.

NOTE

sk = Subset and keyboard identifier.
dd = Display number (1, 2, 3, etc.)
NID = Network identifier.
s = Sensor number (1-NSENSQ(SP))
nn = Number of GDBs not displayed

6.3.3 Scenarios

Scenarios are a series of valid DP keyboard entries presented to a display(s) sequentially from the active Common Processor (CP). The scenarios are built by the user using any type of word or text processor that can create and output an ASCII text file. The scenarios may be loaded on the active CPs hard disk by using the procedures in paragraph 4.5.11, Disk Utilities. They may also be on a floppy and placed in the active CPs floppy disk drive. They may be read from either source and sent to the requesting display(s).

Some specific features of scenario generation and use include:

- Scenario format must be explicit. See Table 6-8.
- The scenario must be in ASCII text format.
- The floppy format must be “high density” only.
- Scenarios may be run in either the ETG test or training mode.
- Scenarios are executed from either the hard or floppy disks of the active CP.

6.3.3.1 Scenario Activation. The following steps initiate a scenario:

1. Initialize to the desired ETG mode by following the procedures in paragraph 6.3.1.

2. Enter: <F15> X, I, pathname\filename, Enter

where:

pathname\filename = Scenario name (limited to 30 characters)

The DP keyboard entries will be executed from the active scenario until complete. See Table 6-9 for an example of an executable scenario.

During the scenario setup, initialization, or execution, Table 6-10 identifies system outputs that may occur at the display.

6.3.3.2 Scenario Deactivation. The following step terminates the scenario function.

Enter: <F15> Z, I, Enter

TABLE 6-8. FORMAT FOR ARTS IIIE SCENARIO FILES

FIELD 1 Cols 1-2	S	FIELD 2 Cols 4-10	S	FIELD 3 Cols 12-13	S	FIELD 4 Cols 15-64	FIELD 5 Cols 65-67	FIELD 6 Cols 68-121	FIELD 7 Cols 122-132
Kybd Pos		Time		Function		Message + slew coord	Slots	Remarks	Command ID

S = Space

FIELD 1 — KEYBOARD POSITION IDENTIFIER

Col 1 = Keyboard Subset (l-7)
Col 2 = Controller Position
00 = SMC — SMS Position

FIELD 2 — Time

If Col 4 = A, Time is absolute in hrs, mins, secs (6 digits) — optional leading zeros or spaces.

If Col 4 = Blank, Time is relative to previous command in hrs, mins, secs (6 digits) optional leading zeros or spaces.

If Time field is blank, execute immediately.

Time is always right-justified in FIELD 2.

FIELD 3 — Function

Cols 12 — 13 = 2 character function code (see attached code list).

FIELD 4 — Keyboard entry message and slew coordinates.

Cols 15 — 64 = Keyboard message data and slew coordinates
If terminated by "$", slew coordinates follow
Two slews are possible separated by a $, i.e. RP$COORD$COORD

Coordinates can be in either Polar or Cartesian or System or by Target ID.

When a slew position is specified in a scenario command, system coordinates can be used for a mosaic display. If system coordinates are specified for a single-sensor display, the scenario card is rejected.

The target initiate position, specified by either polar or Cartesian coordinates, may include a sensor designation [Ess] only when entered from a mosaic display. The sensor designation is illegal from a single-sensor display. If the sensor designation is not included for a mosaic display, the display's functional sensor is used. Including it from a single-sensor display results in the Illegal Scenario Card error indication. If specified, ss is a one or two digit numeric in the range 0 to NSENSQ (SV)-1.

Prr.r zzz.z = Polar, where rr.r = Range, zzz.z = Azimuth to nearest tenth of a mile or degree or to the granularity provided by the CP ETG processing.

Csxx.x syy.y = Cartesian, where s = sign, xx.x and yy.y are coordinates to nearest tenth or to the granularity provided by the CP ETG processing.

Sxxx.x yyy.y = System Coordinates, where xxx.x and yyy.y are coordinates to the nearest tenth or to the granularity provided by the CP ETG processing.

Slew coordinates are provided with an LSB of 1 /16 NM on single-sensor displays and 1/64 NM on mosaic displays.

A space is always required between Range and Azimuth or x and y. The fractional component **(.r, .z, .x, or .y**) is optional. Leading 0s are not required. Sign (s) is optional (positive if absent).

Etn for Target ID where tn = TARGET NUMBER

FIELD 5 — Slots — Select level of Training sets.

Col 65 = Level = **1-5** or • for inputs unconditionally processed.
Col 66 = Position = **L** or R.
Col 67 = If "t", process for this level only.

FIELD 6 — Remarks

Users Comments — Not input to system.

FIELD 7 — Command/Scenario Identifier (FAA defined format) — Not input to system.

Cols 122 — 124 = Facility identifier.
Cols 125 — 126 = **T.**
Cols 127 — 128 = File number.
Cols 129 — 132 = Command sequence number (001 — 999).

Preview Message

If an "@" appears in columns 12 — 67 (input limited to first 45 characters), columns 4- n (n <67 including the @), contain a message to be displayed in preview area of indicated position. This is equivalent to the **.M** capability in the current format.

In Keyboard entry data, the character ^ is used for Delta (A).

The following are the two character function codes for Field 3:

bb = Implied Entry (bb = 2 SPACES)
IC = Initiate Control
RP = Reposition
su = Suspend
TC = Terminate Control
HD = Handoff
DA = Flight Data
AP = Digital Maps
VP = VFR Flight Plan
IP = Interfacility Print
CA = Conflict Alert

AR = Altitude Restriction
RD = Run Down Tab List
IF = Interfacility Test
TG = Target Generator
xc = CTAS/FAST.

MULTIFUNCTIONS:

FA = Display ATIS/GSI
FB = Beacon
FC = Configuration
FD = Display
FE = Enable/Disable EM
FF = Filter
FH = Heavy Jet
FI = Trackball
FJ = Destination Airport
FK = Enable Display (R,T)
FL = Leader
FM = Modify
FN = CRDA
FO = Auto Offset
FP = Preview
FQ = MSAW, Q Function
FR = Memory Readout
FS = System Data
FT = Tabular Lists
FU = Enable/Inhibit No Flight Plan Alert Region
FV = MSAW, V Function
FX = Beacon Subsystem
FY = Scratch Pad
FZ = Track Amplify
F1 = Continuous Data Recording
F2 = I/O Configuration
F3 = CP Performance Monitor
F4 = Event Extraction (TP only)

TABLE 6-9. EXAMPLE OF AN EXECUTABLE SCENARIO

```
7S  000005  @  SCENARIO  CDR01-011
7S  000005  @ CDR  TEST  CASE  01 — CDR  DATA  GENERATION
1D  000001  IC  SCENARIO CDR01 011
7S  000005  @  DO  ENTRIES  FROM  SUPERVISORY  KEYBOARD
1D  000005  @  DELAY
               Set  the  system  time.
 7S  000005  FS  005945
               Initialize  CDR  Extractor  on  disk  1.
7S  A005950  F1  ID1
               Set  available  disk  0  on  SMC  EO.
7S  000010  F1  ADOS0
               Set  available  disk  0  on  SMC  El.
7S  000010  F1  ADOS1
               Set  available  disk  1  on  SMC  El.
7S  000010  F1  AD1S1
               Toggle  CRDA  data  in  SDA.
4H  000010  FN                                                        GHOST
               Enable  CRDA  tie  mode  for  EWR  rwys  04R/11       27      GHOST
7S  000010  FN  2T                                                    GHOST
               Enable  the  IF  Test  Program  for  facility  0.  Disable  time  check
               logic  and  test  message  generation  for  facility  0.
7S  000010  IF  00
7s        2  IF  03
               Toggle  the  IF  Test  Program  for  facilities  1  and  2  and  their
               time  check  logic.
7s       12  IF  10
7s        1  IF  20
7s        1  IF  14
7s        1  IF  24
7s        1  IF  14
7s        1  IF  24
7s        1  IF  10
7s        1  IF  20
7S  000005  @  START  TARGETS  ON  4H
               Create  targets  O-10.
4H        1  TG  00B1551V200H090R30Z360P                              BCN  ONLY
4H        1  TG  01V200H090R35Z360Q                                   RDR  ONLY
4H        1  TG  02B1102V200H120R040Z030A050
4H        1  TG  03B1103V200H150R020Z060
4H        1  TG  04B1103V200H180R020Z090
4H        1  TG  05B1105V200H210R020Z120A080
4H        1  TG  55B1155V200H210R020Z120A085
4H        1  TG  06B1106V200H210R020Z120A080I
4H        1  TG  07B1107V200H120R040Z030A050
4H        1  TG  08B1110V200H360R030Z320A002
4H        1  TG  09B1111V200H240R020Z150A080
4H        1  TG  10B1112V200H270R020Z180A080
               start  ghost  track  target  on  EWR  sensor              GHOST
4H        1  TG  11B3411V080H040R020Z220A030/0013                      GHOST
               start  emergency  targets
4H        1  TG  76B7601V200H300A060R25Z150
4H        1  TG  77B7701V200H300A070R30Z150
               create  dup-beacon  target
4H  000001  TG  20B1106V060H160R030Z290A070
               Create  a  beacon  target  with  an  invalid  Mode  3/A
4H  000001  TG  51B1151^1V060H160R035Z290A070
               Enable   auto-offset.
4H  000010  FO
               Initiate  control  of  targets  2,  5,  7,  and  8.       STEP  34
4H  A010155  DA  CA01  1102
4H        2  DA  CA02  1107
```

TABLE 6-9. EXAMPLE OF AN EXECUTABLE SCENARIO (Continued)

```
4H        2 IC MSAW01 1110$E08
4H        2 DA MCI01  1105
               associate  ghost  track                                GHOST
4H        2 DA GHOST11  3411 ^C                                      GHOST
               initiate  control  on  radar-only  track
4H  000001  IC  RDR01$E01
4H  000001  IC  MODE51$E51
1D  000010  @  DELAY  FOR  ACQUIRE
               Offset  MCI01  to  the  Northwest.                  STEP  35
4H  000005  FL  1$E05
               Enter  one  I/F  departure  flight  plan.
4H  000015  IF  01ZCN0101001*/FP*12AIFDEP01*JRA*
4H        1 IF  011111*RBV*P0103*020**/+
               Display  the  altitude  filter  limits.             STEP  37
4H  000015  FF
               Disable  extraction  of  all  data  classes.
7S 000015 F1 D
               Move  the  LA/CA  tabular  list.
4H  000015  FT  M$P040 270
               Enter  one  departure  I/F  flight  plan.           STEP  40
4H  000015  IF  01ZCN0102002*/FP*12BIFDEP02*JRA*
4H  000001  IF  011112*RBV*P0104*020**/+
               Display  the  altitude  filter  limits.
4H  000015  FF
               Enable  the  standard  data  classes.
7S 000015 F1 E
               Enable  the  data  classes  not  in  the  standard  data  class  set
7S  000015  F1  E  NC  TP  CP
31        3 IC  N3I$E20
               Disable  the  same  non-standard  data  classes
7S  000015 F1  D  NC  TP  CP
               Terminate  control  of  all  tracks,  and  drop  all  targets.
4H  A010500  TC  ALL
4H        1 TC OK IFDEP01
4H        1 TC OK IFDEP02
4H        1 TG 00
4H        1 TG 01
4H        1 TG 02
4H        1 TG 03
4H        1 TG 04
4H        1 TG 05
4H        1 TG 55
4H        1 TG 06
4H        1 TG 07
4H        1 TG 08
4H        1 TG 09
4H        1 TG 10
4H        1 TG 11                                                    GHOST
4H        1 TG 20
4H        1 TG 76
4H        1 TG 77
4H        1 TG 51
               Make  SMC  El's  disk  (1)  unavailable  for  CDR.
7S  000001  Fl  UD1S1
               Enable  the  time  check  logic  and  test  message  generation
               for  facility  0.  Disable  the  IF  Test  Program  for  facility  0.
7s        1 IF  03
7s        2 IF  00
               Disable  CRDA  tie  mode  for  EWR  rwys  04R/11       27     GHOST
7s        2 FN  2D                                                    GHOST
               Toggle  CRDA  data  in  SDA.
```

TABLE 6-9. EXAMPLE OF AN EXECUTABLE SCENARIO (Continued)

```
4H  000002  FN                                                    GHOST
              Terminate  CDR  extraction.
7S  000005  Fl  T
7S  000005  @  END  CDRO1.O1l
7S  000005  @  END  CDRO1.O1l
```

TABLE 6-l 0. SCENARIO OUTPUTS

System Output	Description
FLOPPY DISK MOUNT UNSUCCESSFUL	pSOS+ error when mounting floppy disk
ssssssss FILE UNKNOWN	File ssssssss not found on input drive
SCENARIO ACTIVE	Scenario has been initialized
ILL SCEN CARD	Time non-sequential
	Illegal time entry
	Scenario record does not conform to specified format
	Illegal Function
	More than 1 slew entry and not RP or implied function
	Scenario record specifies: Xl, XM, XT, ZI, ZM, or ZT
SCENARIO OFF	Scenario has been terminated
SCENARIO OFF BY ILL TRNG SET	Entering display not in Training mode
CANNOT UNMOUNT FLOPPY DISK	pSOS+ error when unmounting floppy disk
SCENARIO ABORTED BY MCP SWITCH*	Active MCP has been switched
* Message presented at display and active SMC	

6.4 PERFORMANCE MONITORING

Performance monitoring consists of Beacon Radar On-Line Performance Monitoring (BROPM), CP Performance Monitoring, TP Performance Monitoring, DP Performance Monitoring and Common ARTS Quick Analysis of Radar Sites (CQARS). The performance monitoring functions are controlled by menu or keyboard entries. This section identifies the menu paragraphs, keyboard entries, and performance monitor printouts.

6.4.1 Beacon Radar On-line Performance Monitor (BROPM)

BROPM is part of Performance Monitoring Processing in the Track Processing Subsystem (TPS). BROPM is a combination extractor/data reduction program. It extracts tracking effectiveness data and target report input data and reduces these data for display on a maintenance display or for output to the SMS PC printer (Appendix A, Recording Printouts). The output destination is specified by keyboard entry. See Figure 6-9 for BROPM Performance Monitor printout.

The entries for BROPM are input at the SMS or a maintenance display. The SMS entries are described in paragraph 4.4.5 (Performance Monitor Control Entries). The maintenance keyboard entries (F7, 3, E) are described in Table 5-4 (Maintenance Keyboard Entries).

```
mm/dd/yy hh:mm:ss  NID#  BROPM  END  TIME  mm  MIN
```

	SENSOR 0		SENSOR 1		SENSOR 2		SENSOR 3		SENSOR 4	
	B	R	B	R	B	R	B	R	B	R
TOT SCAN		xx		xx		xx		xx		xx
TOT TGT	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
TOT M-3A		xx.xx		xx.xx		xx.xx		xx.xx		**XX.XX**
TOT M-C		xx.xx		xx.xx		xx.xx		xx.xx		xx.xx
PCT M-3A		xx.xx		xx.xx		**XX.XX**		xx.xx		xx.xx
PCT M-C		xx.xx		xx.xx		xx.xx		xx.xx		xx.xx
AVE H/T		xx.xx		xx.xx		xx.xx		xx.xx		xx.xx
PCT RNG		xx.xx		xx.xx		xx.xx		xx.xx		xx.xx
PCT VA3_0		xx.xx		xx.xx		xx.xx		xx.xx		xx.xx
PCT VA3_1		xx.xx		**XX.XX**		xx.xx		xx.xx		xx.xx
PCT VA3_2		**XX.XX**		xx.xx		xx.xx		xx.xx		xx.xx
PCT VA3_3		xx.xx		xx.xx		xx.xx		xx.xx		xx.xx
PCT VC3_0		xx.xx		xx.xx		xx.xx		xx.xx		xx.xx
PCT VC3_1		xx.xx		xx.xx		**XX.XX**		xx.xx		xx.xx
PCT VC3_2		**XX.XX**		xx.xx		xx.xx		xx.xx		xx.xx
PCT VC3_3		xx.xx		xx.xx		xx.xx		xx.xx		xx.xx
TOT AL		xx		xx		xx		xx		xx
PCT Q7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
PCT Q6	xx.xx	**XX.XX**	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
PCT Q5	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
PCT Q4	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
PCT Q3	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	**XX.XX**
PCT Q2	xx.xx	xx.xx	xx.xx	xx.xx	**XX.XX**	xx.xx	xx.xx	xx.xx	xx.xx	**XX.XX**
PCT Q1	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
PCT QO	xx.xx	**XX.XX**	xx.xx	xx.xx	xx.xx	xx.xx	**XX.XX**	xx.xx	**XX.XX**	xx.xx
TOT BSTR		xx		xx		xx		xx		xx
TATS		xx		xx		xx		xx		xx
TOT NTRXS		xx		xx		xx		xx		xx
PCT CST		**XX.XX**		**XX.XX**		xx.xx		**xx.xx**		**XX.XX**
DSC TRKS		xx		xx		xx		xx		xx
DSC TRK-C		xx		xx		xx		xx		xx
NOD TRKS		xx		xx		xx		xx		xx
NOD TRK-C		xx		xx		xx		xx		xx
RAD TRKS		xx		xx		xx		xx		xx

FIGURE 6-9. BEACON RADAR ON-LINE PERFORMANCE MONITOR (BROPM) (SHEET 1 OF 3)

	SENSOR 5		SENSOR 6		SENSOR 7		SENSOR 8		SENSOR 9	
	B	R	B	R	B	R	B	R	B	R
TOT SCAN		xx		xx		xx		xx		xx
TOT TGT	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
TOT M-3A		xx.xx		xx.xx		xx.xx		xx.xx		xx.xx
TOT M-C		xx.xx		xx.xx		xx.xx		xx.xx		xx.xx
PCT M-3A		xx.xx		xx.xx		xx.xx		xx.xx		xx.xx
PCT M-C		xx.xx		xx.xx		xx.xx		xx.xx		xx.xx
AVE H/T		xx.xx		xx.xx		xx.xx		xx.xx		xx.xx
PCT RNG		xx.xx		xx.xx		xx.xx		xx.xx		xx.xx
PCT VA3_0		xx.xx		xx.xx		xx.xx		xx.xx		xx.xx
PCT VA3_1		xx.xx		xx.xx		xx.xx		xx.xx		xx.xx
PCT VA3_2		xx.xx		xx.xx		xx.xx		xx.xx		xx.xx
PCT VA3_3		XX.XX		xx.xx		xx.xx		xx.xx		xx.xx
PCT VC3 0		XX.XX		xx.xx		xx.xx		XX.XX		xx.xx
PCT VC3_1		xx.xx		xx.xx		xx.xx		xx.xx		xx.xx
PCT VC3_2		xx.xx		xx.xx		xx.xx		xx.xx		xx.xx
PCT VC3_3		xx.xx		xx.xx		xx.xx		xx.xx		xx.xx
TOT AL		xx		xx		xx		xx		xx
PCT Q7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
PCT Q6	xx.xx	xx.xx	XX.XX	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
PCT Q5	xx.xx	xx.xx	XX.XX	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
PCT Q4	xx.xx	xx.xx	xx.xx	XX.XX	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
PCT Q3	XX.XX	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
PCT Q2	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
PCT Q1	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
PCT QO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
TOT BSTR		xx		xx		xx		xx		xx
TATS		xx		xx		xx		xx		xx
TOT NTRKS		xx		xx		xx		xx		xx
PCT CST		xx.xx		xx.xx		xx.xx		xx.xx		xx.xx
DSC TRKS		xx		xx		xx		xx		xx
DSC TRK_C		xx		xx		xx		xx		xx
NOD TRKS		xx		xx		xx		xx		xx
NOD TRK_C		xx		xx		xx		xx		xx
RAD TRKS		xx		xx		xx		xx		xx

FIGURE 6-9. BEACON RADAR ON-LINE PERFORMANCE MONITOR (BROPM) (SHEET 2 OF 3)

where:

B	= Beacon
R	= Radar
mm	= Interval in Minutes
TOT SCAN	= Total number of scans of data
TOT TGT	= Total number of declared beacon targets and declared radar targets
TOT M-3A	= Total number of Mode 3/A targets
TOT M-C	= Total number of Mode C targets
PCT M-3A	= Percent of targets reporting Mode 3/A
PCT M-C	= Percent of targets reporting Mode C
AVE H/T	= Average number of hits per target
PCT RNG	= Percent Ring-arounds
PCT VA3_0	= Percent of targets with Mode 3/A validity of 3, mode 0
PCT VA3_1	= Percent of targets with Mode 3/A validity of 3, mode 1
PCT VA3_2	= Percent of targets with Mode 3/A validity of 3, mode 2
PCT VA3_3	= Percent of targets with Mode 3/A validity of 3, mode 3
PCT VC3_0	= Percent of targets with Mode C validity of 3, mode 0
PCT VC3_1	= Percent of targets with Mode C validity of 3, mode 1
PCT VC3_2	= Percent of targets with Mode C validity of 3, mode 2
PCT VC3_3	= Percent of targets with Mode C validity of 3, mode 3
TOT AL	= Number of occurrences of consecutive Mode C reports with altitude change greater than 700 feet
PCT Q7	= Percent of reports with quality 7
PCT Q6	= Percent of reports with quality 6
PCT Q5	= Percent of reports with quality 5
PCT Q4	= Percent of reports with quality 4
PCT Q3	= Percent of reports with quality 3
PCT Q2	= Percent of reports with quality 2
PCT Q1	= Percent of reports with quality 1
PCT QO	= Percent of reports with quality 0
TOT BSTR	= Total Strong Beacon targets
TATS	= Total Active Track Scans
TOT NTRKS	= Total number of New Tracks initiated this interval
PCT CST	= Percent of active track scans in Coast
DSC TRKS	= Discrete Tracks
DSC TRK-C	= Mode C Discrete Tracks
NOD TRKS	= Non-Discrete Tracks
NOD TRK-C	= Mode C Non-Discrete Tracks
RAD TRKS	= Radar Only Tracks

FIGURE 6-9. BEACON RADAR ON-LINE PERFORMANCE MONITOR (BROPM) (SHEET 3 OF 3)

6.4.2 CP Performance Monitor

The Common Processor Performance Monitor (CPPM) provides information relative to the CP track and flight plan loads. The track load data are the current and maximum counts of stored flight plans in the Flight Data File (FDF).

CPPM is enabled and disabled by keyboard entries at either the SMS or a supervisory display. The SMS entries are described in paragraph 4.4.5 (Performance Monitor Configuration). The supervisory keyboard entries (F7, 3, A and F7, 3, CC) are described in Table 5-3 (Supervisory Keyboard Entries).

The status reports available are the Initial or Current CTS Report (Figure 6-10), Overall-Maximum CTS Report (Figure 6-11), Initial or Current CP Coordinated Report (Figure 6-12), Overall-Maximum CP Coordinated Report (Figure 6-13), CP Sum (Summary) Report (Figure 6-14), Initial or Current CPU Status Report (Figure 6-15), and the Overall-Maximum CPU Status Report (Figure 6-16). The reports are output to the display or the HSP printer

```
mm/dd/yy  hh:mm:ss  NID#  CTS  STATUS  REPORT:  aaaaaaa      C=hh:mm:ss
S   ASSOCIATED     UNASSOCIATED     FP/STORE     CST/SUSPEND     TRAINING     AVAILABLE
0      xxxx            xxxx          xxxx           xxx           xxx           xxxx
1      xxxx            xxxx          xxxx           xxx           xxx           xxxx
2      xxxx            xxxx          xxxx           xxx           xxx           xxxx
3      xxxx            xxxx          xxxx           xxx           xxx           xxxx
4      xxxx            xxxx          xxxx           xxx           xxx           xxxx
5      xxxx            xxxx          xxxx           xxx           xxx           xxxx
6      xxxx            xxxx          xxxx           xxx           xxx           xxxx
7      xxxx            xxxx          xxxx           xxx           xxx           xxxx
8      xxxx            xxxx          xxxx           xxx           xxx           xxxx
9      xxxx            xxxx          xxxx           xxx           xxx           xxxx
TOTAL  xxxx            xxxx          xxxx           xxx           xxx           xxxx
AVAILABLE  FDF  C=xxxx             PERCENT  FDF  USED  C=xx.x
```

FIGURE 6-l 0. INITIAL OR CURRENT CTS REPORT

```
mm/dd/yy  hh:mm:ss  NID#  CTS  STATUS  REPORT:  MAXIMUM      C=hh:mm:ss   M=hh:mm:ss
S   ASSOCIATED     UNASSOCIATED     FP/STORE     CST/SUSPEND     TRAINING     AVAILABLE
0      C=xxxx M=xxxx C=xxxx M=xxxx C=xxxx M=xxxx C=xxx M=xxx C=xxx M=xxx C=xxxxM=xxxx
1      C=xxxx M=xxxx C=xxxx M=xxxx C=xxxx M=xxxx C=xxx M=xxx C=xxx M=xxx C=xxxxM=xxxx
2      C=xxxx M=xxxx C=xxxx M=xxxx C=xxxx M=xxxx C=xxx M=xxx C=xxx M=xxx C=xxxxM=xxxx
3      C=xxxx M=xxxx C=xxxx M=xxxx C=xxxx M=xxxx C=xxx M=xxx C=xxx M=xxx C=xxxxM=xxxx
4      C=xxxx M=xxxx C=xxxx M=xxxx C=xxxx M=xxxx C=xxx M=xxx C=xxx M=xxx C=xxxxM=xxxx
5      C=xxxx M=xxxx C=xxxx M=xxxx C=xxxx M=xxxx C=xxx M=xxx C=xxx M=xxx C=xxxxM=xxxx
6      C=xxxx M=xxxx C=xxxx M=xxxx C=xxxx M=xxxx C=xxx M=xxx C=xxx M=xxx C=xxxxM=xxxx
7      C=xxxx M=xxxx C=xxxx M=xxxx C=xxxx M=xxxx C=xxx M=xxx C=xxx M=xxx C=xxxxM=xxxx
8      C=xxxx M=xxxx C=xxxx M=xxxx C=xxxx M=xxxx C=xxx M=xxx C=xxx M=xxx C=xxxxM=xxxx
9      C=xxxx M=xxxx C=xxxx M=xxxx C=xxxx M=xxxx C=xxx M=xxx C=xxx M=xxx C=xxxxM=xxxx
TOTAL  C=xxxx M=xxxx C=xxxx M=xxxx C=xxxx M=xxxx C=xxx M=xxx C=xxx M=xxx C=xxxxM=xxxx
AVAILABLE  FDF  C=xxxx M=xxxx      PERCENT  FDF  USED  C=xx.x M=xx.x
```

FIGURE 6-l 1. OVERALL-MAXIMUM CTS REPORT

```
mm/dd/yy  hh:mm:ss  NID#  CTS  STATUS  REPORT:  COR  aaa       C=hh:mm:ss
S   ASSOCIATED     UNASSOCIATED     FP/STORE     CST/SUSPEND     TRAINING      AVAILABLE
0      xxxx            xxxx          xxxx           xxx            xxx           xxxx
1      xxxx            xxxx          xxxx           xxx            xxx           xxxx
2      xxxx            xxxx          xxxx           xxx            xxx           xxxx
3      xxxx            xxxx          xxxx           xxx            xxx           xxxx
4      xxxx            xxxx          xxxx           xxx            xxx           xxxx
5      xxxx            xxxx          xxxx           xxx            xxx           xxxx
6      xxxx            xxxx          xxxx           xxx            xxx           xxxx
7      xxxx            xxxx          xxxx           xxx            xxx           xxxx
8      xxxx            xxxx          xxxx           xxx            xxx           xxxx
9      xxxx            xxxx          xxxx           xxx            xxx           xxxx
TOTAL  xxxx            xxxx          xxxx           xxx            xxx           xxxx
AVAILABLE  FDF  C=xxxx             PERCENT  FDF  USED  C=xx.x
mm/dd/yy  hh:mm:ss  NID#  CPU  STATUS  REPORT:  COR  aaa
SYSTEM  UTILIZATION:
      1  MINUTE         xx  MINUTES         HIGHEST   UTILIZATION
        xxx%                xxx%               xxx%   hh:mm:ss
```

FIGURE 6-l 2. INITIAL OR CURRENT CP COR REPORT

```
mm/dd/yy  hh:mm:ss  NID#  CTS  STATUS  REPORT:  COR  MAX       C=hh:mm:ss   M=hh:mm:ss
S   ASSOCIATED     UNASSOCIATED     FP/STORE     CST/SUSPEND     TRAINING      AVAILABLE
0 C=xxxx M=xxxx C=xxxx M=xxxx C=xxxx M=xxxx C=xxx M=xxx C=xxx M=xxx C=xxxxM=xxxx
1 C=xxxx M=xxxx C=xxxx M=xxxx C=xxxx M=xxxx C=xxx M=xxx C=xxx M=xxx C=xxxxM=xxxx
2 C=xxxx M=xxxx C=xxxx M=xxxx C=xxxx M=xxxx C=xxx M=xxx C=xxx M=xxx C=xxxxM=xxxx
3 C=xxxx M=xxxx C=xxxx M=xxxx C=xxxx M=xxxx C=xxx M=xxx C=xxx M=xxx C=xxxxM=xxxx
4 C=xxxx M=xxxx C=xxxx M=xxxx C=xxxx M=xxxx C=xxx M=xxx C=xxx M=xxx C=xxxxM=xxxx
5 C=xxxx M=xxxx C=xxxx M=xxxx C=xxxx M=xxxx C=xxx M=xxx C=xxx M=xxx C=xxxxM=xxxx
6 C=xxxx M=xxxx C=xxxx M=xxxx C=xxxx M=xxxx C=xxx M=xxx C=xxx M=xxx C=xxxxM=xxxx
7 C=xxxx M=xxxx C=xxxx M=xxxx C=xxxx M=xxxx C=xxx M=xxx C=xxx M=xxx C=xxxxM=xxxx
8 C=xxxx M=xxxx C=xxxx M=xxxx C=xxxx M=xxxx C=xxx M=xxx C=xxx M=xxx C=xxxxM=xxxx
9 C=xxxx M=xxxx C=xxxx M=xxxx C=xxxx M=xxxx C=xxx M=xxx C=xxx M=xxx C=xxxxM=xxxx
T C=xxxx M=xxxx C=xxxx M=xxxx C=xxxx M=xxxx C=xxx M=xxx C=xxx M=xxx C=xxxxM=xxxx
AVAILABLE  FDF  C=xxxx  M=xxxx      PERCENT  FDF  USED  C=xx.x  M=xx.x
mm/dd/yy  hh:mm:ss  NID#  CPU  STATUS  REPORT:  COR  MAX
SYSTEM  UTILIZATION:
      1  MINUTE         xx  MINUTES         HIGHEST   UTILIZATION
        xxx%                xxx%               xxx%   hh:mm:ss
MAXIMUM  VALUES:              AVERAGE  UTILIZATION
      1  MINUTE         xx  MINUTES         HIGHEST   UTILIZATION
        xxx%  hh:mm:ss      xxx%  hh:mm:ss     xxx%   hh:mm:ss
```

FIGURE 6-13. OVERALL-MAXIMUM CP COR REPORT

```
mm/dd/yy  hh:mm:ss   NID#  syn  CP  STATUS  REPORT:  SUM  aaa   C=hh:mm:ss
                CTS  DATA                FDF    FDF  SYS    HIGH     HIGH  CPU
S  ASC    UAS   FP/S  C/S   ETG  AVAIL   AVAIL   USE  UTIL  CPU        TIME
0  xxxx   xxxx  xxxx  xxx   xxx  xxxx
1  xxxx   xxxx  xxxx  xxx   xxx  xxxx
2  xxxx   xxxx  xxxx  xxx   xxx  xxxx
3  xxxx   xxxx  xxxx  xxx   xxx  xxxx
4  xxxx   xxxx  xxxx  xxx   xxx  xxxx
5  xxxx   xxxx  xxxx  xxx   xxx  xxxx
6  xxxx   xxxx  xxxx  xxx   xxx  xxxx
7  xxxx   xxxx  xxxx  xxx   xxx  xxxx
8  xxxx   xxxx  xxxx  xxx   xxx  xxxx
9  xxxx   xxxx  xxxx  xxx   xxx  xxxx
T  xxxx   xxxx  xxxx  xxx   xxx  xxxx    xxxx    xxx%   xxx%    xxxx%     hh:mm:ss
```

FIGURE 6-l 4. CP SUM REPORT

```
mm/dd/yy  hh:mm:ss  NID#  CPU  STATUS  REPORT:  aaaaaaa
SYSTEM  UTILIZATION:
      1 MINUTE          xx  MINUTES      HIGHEST   UTILIZATION
        xxx%                xxx%           xxx%   hh:mm:ss
```

FIGURE 6-15. INITIAL OR CURRENT CPU REPORT

```
mm/dd/yy  hh:mm:ss  NID#  CPU  STATUS  REPORT:  MAXIMUM
SYSTEM  UTILIZATION:
      1 MINUTE          xx  MINUTES      HIGHEST   UTILIZATION
        xxx%                xxx%           xxx%   hh:mm:ss
MAXIMUM  VALUES:          AVERAGE   UTILIZATION
      1 MINUTE          xx  MINUTES      HIGHEST   UTILIZATION
    xxx% hh:mm:ss      xxx% hh:mm:ss      xxx%   hh:mm:ss
```

FIGURE 6-l 6. OVERALL-MAXIMUM CPU REPORT

6.4.3 TP Performance Monitor

The Track Processor Performance Monitor (TPPM) provides statistics on the TPS report and track loads for each sensor. The report count data are the current and maximum counts of radar and beacon reports. The track load data are the current and maximum counts of used entries in the Track File.

TPPM is enabled and disabled by keyboard entries at either the SMS or a supervisory display. The SMS entries are described in paragraph 4.4.5 (Performance Monitor Configuration). The supervisory keyboard entries (F7, 3, B and F7, 3, CT) are described in Table 5-3 (Supervisory Keyboard Entries).

The status reports available are the Initial or Current RTR Report (Figure 6-17), Overall-Maximum RTR Repot-t (Figure 6-18), Initial or Current CPU Performance Report (Figure 6-19), Overall-Maximum CPU Performance Report (Figure 6-20), Initial or Current TP COR (Coordinated) Report (Figure 6-21), Overall-Maximum TP COR Report (Figure 6-22), and the TP SUM (Summary) Report (Figure 6-23). The reports are output to the HSP printer.

```
mm/dd/yy  hh:mm:ss  NID#  TP  TRACK  STATUS  REPORT:    aaaaaaa       C=hh:mm:ss
S       TRACKS            TRAINING          AVAILABLE
0        xxxx               xxxx              xxxx
1        xxxx               xxxx              xxxx
2        xxxx               xxxx              xxxx
3        xxxx               xxxx              xxxx
4        xxxx               xxxx              xxxx
5        xxxx               xxxx              xxxx
6        xxxx               xxxx              xxxx
7        xxxx               xxxx              xxxx
8        xxxx               xxxx              xxxx
9        xxxx               xxxx              xxxx
TOTAL    xxxx               xxxx              xxxx
SENSOR  0  TRACKING  xx  SECTORS  BEHIND  AT  hh:mm:ss
SENSOR  1  TRACKING  xx  SECTORS  BEHIND  AT  hh:mm:ss
SENSOR  2  TRACKING  xx  SECTORS  BEHIND  AT  hh:mm:ss
SENSOR  3  TRACKING  xx  SECTORS  BEHIND  AT  hh:mm:ss
SENSOR  4  TRACKING  xx  SECTORS  BEHIND  AT  hh:mm:ss
SENSOR  5  TRACKING  xx  SECTORS  BEHIND  AT  hh:mm:ss
SENSOR  6  TRACKING  xx  SECTORS  BEHIND  AT  hh:mm:ss
SENSOR  7  TRACKING  xx  SECTORS  BEHIND  AT  hh:mm:ss
SENSOR  8  TRACKING  xx  SECTORS  BEHIND  AT  hh:mm:ss
SENSOR  9  TRACKING  xx  SECTORS  BEHIND  AT  hh:mm:ss

                        RTR  STATUS  REPORT:    aaaa aaa
S  CURRENT/SCAN      CURRENT/180     CURRENT/SECTOR     AVERAGE/SCAN       LOST  REPORTS
0 B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx
1 B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx
2 B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx
3 B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx
4 B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx
5 B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx
6 B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx
7 B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx
8 B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx
9 B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx
```

FIGURE 6-I 7. INITIAL OR CURRENT RTR REPORT

```
mm/dd/yy  hh:mm:ss   NID#  TP  TRACK  STATUS  REPORT:    MAXIMUM     C=hh:mm:ss   M=hh:mm:ss
      TRACKS            TRAINING          AVAILABLE
0  C=xxxx  M=xxxx    C=xxxx M=xxxx   c=xxxx   M=xxxx
1  C=xxxx  M=xxxx    C=xxxx M=xxxx   c=xxxx   M=xxxx
2  C=xxxx  M=xxxx    C=xxxx M=xxxx   c=xxxx   M=xxxx
3  C=xxxx  M=xxxx    C=xxxx M=xxxx   c=xxxx   M=xxxx
4  C=xxxx  M=xxxx    c=xxxx M=xxxx   c=xxxx   M=xxxx
5  C=xxxx  M=xxxx    c=xxxx M=xxxx   c=xxxx   M=xxxx
6  C=xxxx  M=xxxx    C=xxxx M=xxxx   c=xxxx   M=xxxx
7  C=xxxx  M=xxxx    C=xxxx M=xxxx   c=xxxx   M=xxxx
8  c=xxxx  M=xxxx    C=xxxx M=xxxx   c=xxxx   M=xxxx
9  C=xxxx  M=xxxx    C=xxxx M=xxxx   c=xxxx   M=xxxx
T  C=xxxx  M=xxxx    C=xxxx M=xxxx   C=xxxx   M=xxxx
SENSOR  0  TRACKING  xx  SECTORS  BEHIND  AT  hh:mm:ss
SENSOR  1  TRACKING  xx  SECTORS  BEHIND  AT  hh:mm:ss
SENSOR  2  TRACKING  xx  SECTORS  BEHIND  AT  hh:mm:ss
SENSOR  3  TRACKING  xx  SECTORS  BEHIND  AT  hh:mm:ss
SENSOR  4  TRACKING  xx  SECTORS  BEHIND  AT  hh:mm:ss
SENSOR  5  TRACKING  xx  SECTORS  BEHIND  AT  hh:mm:ss
SENSOR  6  TRACKING  xx  SECTORS  BEHIND  AT  hh:mm:ss
SENSOR  7  TRACKING  xx  SECTORS  BEHIND  AT  hh:mm:ss
SENSOR  8  TRACKING  xx  SECTORS  BEHIND  AT  hh:mm:ss
SENSOR  9  TRACKING  xx  SECTORS  BEHIND  AT  hh:mm:ss

                          RTR  STATUS  REPORT:    MAXIMUM
S  CURRENT/SCAN      CURRENT/180     CURRENT/SECTOR     AVERAGE/SCAN      LOST  REPORTS
0  B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx
1  B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx
2  B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx
3  B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx
4  B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx
5  B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx
6  B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx
7  B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx
8  B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx
9  B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx
S  MAXIMUM/SCAN      MAXIMUM/l80     MAXIMUM/SECTOR     AVERAGE/SCAN      LOST  REPORTS
0  B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx
1  B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx
2  B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx
3  B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx
4  B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx
5  B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx
6  B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx
7  B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx
8  B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx
9  B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx    B=xxxx R=xxxx
```

FIGURE 6-18. OVERALL-MAXIMUM RTR REPORT

```
mm/dd/yy  hh:mm:ss  NID#  TP  CPU  STATUS  REPORT:  aaaaaaa
SYSTEM  UTILIZATION:
        1  MINUTE         xx  MINUTES         HIGHEST   UTILIZATION
          xxx%                xxx%                 xxx%   hh:mm:ss
```

FIGURE 6-l 9. INITIAL OR CURRENT CPU PERFORMANCE REPORT

```
mm/dd/yy  hh:mm:ss  NID#  TP  CPU  STATUS  REPORT:  MAXIMUM
SYSTEM  UTILIZATION:
        1  MINUTE         xx  MINUTES         HIGHEST   UTILIZATION
         xxx%                xxx%                 xxx%   hh:mm:ss
MAXIMUM  VALUES:             AVERAGE   UTILIZATION
        1  MINUTE         xx  MINUTES         HIGHEST   UTILIZATION
      xxx% hh:mm:ss    xxx%  hh:mm:ss           xxx%   hh:mm:ss
```

FIGURE 6-20. OVERALL-MAXIMUM CPU PERFORMANCE REPORT

Format	Description
SENSOR (ss) SERIAL PATH d: ILLEGAL MESSAGE	An unrecognized message was received from the sensor.
SENSOR (ss) SERIAL PATH d: SENSOR INPUT	input has started on indicated sensor path.
SENSOR (ss) SERIAL PATH d: DECLARED INOPERATIVE	Serial path d for sensor ss is inoperative.
SENSOR (ss) SERIAL PATH d: SYSTEM OVERHEAT ALARM	The number of CD2 messages indicating system overheat has met the threshold.
SENSOR s PORT p: CLOSE FAILED: ERRNO e	An attempt to close port p of sensor s failed with error number e.
SENSOR s PORT p: I-CLOSE IOCTL FAILED: ERRNO e	An attempt to close port p of sensor s failed with error number e.
INVALID MESSAGE RECEIVED FROM ARSR r :CONTROL PANEL	A System Control Panel Communications Message was received from ARSR s. r = sensor abbreviation
INVALID MESSAGE RECEIVED FROM ASR r : SURVEILLANCE MESSAGE ON WEATHER PORT (slot: s port: p)	A surveillance message was received on a port from which weather messages are expected. r = sensor abbreviation
INVALID MESSAGE RECEIVED FROM ASR r : WEATHER MESSAGE ON SURVEILLANCE PORT (slot: s port: p)	A weather message was received on a port from which surveillance messages are expected. r = sensor abbreviation
INVALID MESSAGE RECEIVED FROM ASR r : WEATHER MESSAGE	A Weather Message was received from an ARSR, or a Strobe or variable Map Message was received from an ASR-9 or Mode S sensor. r = sensor abbreviation
SENSOR (ss) SRAP (i): BDAS 00--BMC TABLE OVERFLOW	A BMC table overflow has occurred, causing an SRAP BDAS failure.
SENSOR (ss) SRAP (i): BDAS Ol--BMC RESTART PERFORMED	A BMC restart was performed, causing an SRAP BDAS failure.
SENSOR (ss) SRAP (i): BDAS 02--BEX/FIFO DATA TIMEOUT	A BEX/FIFO data timeout occurred, causing an SRAP BDAS failure.
SENSOR (ss) SRAP (i): BDAS 03--ILLOGICAL CONDITION	An illogical condition that should never occur.
SENSOR (ss) SRAP (i): BDAS 04--RANGE/CODE WORDS OUT OF ORDER	A range or code word is out of order, causing an SRAP BDAS failure.
SENSOR (ss) SRAP (i): BDAS 05--AZIMUTH OUT OF TOLERANCE	The azimuth is out of tolerance, causing an SRAP BDAS failure.

```
mm/dd/yy  hh:mm:ss  NID#  TP  TRACK  STATUS  REPORT:    COR  MAX        C=hh:mm:ss
S       TRACKS            TRAINING          AVAILABLE
0  C=xxxx  M=xxxx     c=xxxx  M=xxxx    c=xxxx   M=xxxx
1  c=xxxx  M=xxxx     c=xxxx  M=xxxx    c=xxxx   M=xxxx
2  C=xxxx  M=xxxx     C=xxxx M=xxxx    c=xxxx   M=xxxx
3  C=xxxx  M=xxxx     c=xxxx  M=xxxx    c=xxxx   M=xxxx
4  C=xxxx  M=xxxx     C=xxxx M=xxxx    c=xxxx   M=xxxx
5  c=xxxx  M=xxxx     c=xxxx  M=xxxx    c=xxxx   M=xxxx
6  C=xxxx  M=xxxx     c=xxxx  M=xxxx    c=xxxx   M=xxxx
7  C=xxxx  M=xxxx     C=xxxx M=xxxx    c=xxxx   M=xxxx
8  C=xxxx  M=xxxx     c=xxxx  M=xxxx    c=xxxx   M=xxxx
9  c=xxxx  M=xxxx     c=xxxx  M=xxxx    c=xxxx   M=xxxx
T  c=xxxx  M=xxxx     c=xxxx  M=xxxx    c=xxxx   M=xxxx
SENSOR  0  TRACKING  xx  SECTORS  BEHIND  AT  hh:mm:ss
SENSOR  1  TRACKING  xx  SECTORS  BEHIND  AT  hh:mm:ss
SENSOR  2  TRACKING  xx  SECTORS  BEHIND  AT  hh:mm:ss
SENSOR  3  TRACKING  xx  SECTORS  BEHIND  AT  hh:mm:ss
SENSOR  4  TRACKING  xx  SECTORS  BEHIND  AT  hh:mm:ss
SENSOR  5  TRACKING  xx  SECTORS  BEHIND  AT  hh:mm:ss
SENSOR  6  TRACKING  xx  SECTORS  BEHIND  AT  hh:mm:ss
SENSOR  7  TRACKING  xx  SECTORS  BEHIND  AT  hh:mm:ss
SENSOR  8  TRACKING  xx  SECTORS  BEHIND  AT  hh:mm:ss
SENSOR  9  TRACKING  xx  SECTORS  BEHIND  AT  hh:mm:ss

                          RTR  STATUS  REPORT:    COR  MAX
S  CURRENT/SCAN      CURRENT/180     CURRENT/SECTOR     AVERAGE/SCAN      LOST  REPORTS
0 B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx
1 B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx
2 B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx
3 B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx
4 B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx
5 B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx
6 B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx
7 B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx
8 B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx
9 B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx
S  MAXIMUM/SCAN      MAXIMUM/180     MAXIMUM/SECTOR     AVERAGE/SCAN=     LOST  REPORTS
0 B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx
1 B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx
2 B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx
3 B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx
4 B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx
5 B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx
6 B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx
7 B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx
8 B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx
9 B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx   B=xxxx R=xxxx

mm/dd/yy  hh:mm:ss  NID#  TP  CPU  STATUS  REPORT:  COR  MAX
SYSTEM  UTILIZATION:
      1 MINUTE         xx  MINUTES         HIGHEST   UTILIZATION
        xxx%               xxx%               xxx%  hh:mm:Ss
MAXIMUM  VALUES:     AVERAGE   UTILIZATION
      1 MINUTE         xx  MINUTES         HIGHEST   UTILIZATION
      xxx% hh:mm:ss      xxx% hh:mm:ss     xxx%   hh:mm:ss
```

FIGURE 6-22. OVERALL-MAXIMUM TP COR REPORT

```
mm/dd/yy   hh:mm:ss   NID#  syn  TP  STATUS  REPORT:  SUM  aaa   C=hh:mm:ss
     ATF  DATA        SECT     SCAN      180DEG      SYS      HIGH    HIGH  CPU
S  TRACKS  ETG  AVAIL  BACK   BCN   RDR   BCN   RDR    UTIL     CPU      TIME
0  xxxx    xxx  xxxx    xx   xxxx  xxxx  xxxx  xxxx
1  xxxx    xxx  xxxx    xx   xxxx  xxxx  xxxx  xxxx
2  xxxx    xxx  xxxx    xx   xxxx  xxxx  xxxx  xxxx
3  xxxx    xxx  xxxx    xx   xxxx  xxxx  xxxx  xxxx
4  xxxx    xxx  xxxx    xx   xxxx  xxxx  xxxx  xxxx
5  xxxx    xxx  xxxx    xx   xxxx  xxxx  xxxx  xxxx
6  xxxx    xxx  xxxx    xx   xxxx  xxxx  xxxx  xxxx
7  xxxx    xxx  xxxx    xx   xxxx  xxxx  xxxx  xxxx
8  xxxx    xxx  xxxx    xx   xxxx  xxxx  xxxx  xxxx
9  xxxx    xxx  xxxx    xx   xxxx  xxxx  xxxx  xxxx
T  xxxx    xxx  xxxx                                  xxx%      xxxx    hh:mm:ss
SENSOR  0  EXCEEDED  dd  SECTORS  BEHIND  ddd  TIMES
SENSOR  1  EXCEEDED  dd  SECTORS  BEHIND  ddd  TIMES
SENSOR  2  EXCEEDED  dd  SECTORS  BEHIND  ddd  TIMES
SENSOR  3  EXCEEDED  dd  SECTORS  BEHIND  ddd  TIMES
SENSOR  4  EXCEEDED  dd  SECTORS  BEHIND  ddd  TIMES
SENSOR  5  EXCEEDED  dd  SECTORS  BEHIND  ddd  TIMES
SENSOR  6  EXCEEDED  dd  SECTORS  BEHIND  ddd  TIMES
SENSOR  7  EXCEEDED  dd  SECTORS  BEHIND  ddd  TIMES
SENSOR  8  EXCEEDED  dd  SECTORS  BEHIND  ddd  TIMES
SENSOR  9  EXCEEDED  dd  SECTORS  BEHIND  ddd  TIMES
```

FIGURE 6-23. TP SUM REPORT

6.4.4 DP Performance Monitor

DP performance monitor data include: number of associated tracks, flight plan/store aircraft, coast/suspend aircraft, available records in Active Data File (ADF), available records in FDF, and unassociated tracks. The data are derived from the FDF, ADF, and Track Record Table. Some of the counts are only for aircraft associated with the keyboards of the display.

DP performance monitor is enabled and disabled by keyboard entries at either the SMS or a supervisory display. The SMS entries are described in paragraph 4.4.5 (Performance Monitor Configuration). The supervisory keyboard entries (F7, 3, D) are described in Table 5-3 (Supervisory Keyboard Entries).

The status reports available are the FDP Status Report (Figure 6-24), LBP Status Report (Figure 6-25), RDM Status Report (Figure 6-26), and ACD Status Report (Figure 6-27). The reports are output to the HSP.

```
mm/dd/yy  hh:mm:ss  NID  #  FDP  STATUS  REPORT   DISPLAY  =  dd    SENSOR  =  d    01  =  dd    CI = ss

        SS                1  LINE  DB          2  LINE  DB             3  LINE  DB
   c=  xx  M=  xx       c=  xx  M=  xx         c=  xx  M=  xx         c=  xx   M=  xx

KYBD       ASSOCIATED      FP/STORE        CST/SUSPEND
1      C  =  ddd  M  =  ddd   C=  ddd  M  =  ddd   C  =  ddd  M  =  ddd
2      C  =  ddd  M  =  ddd   C  =  ddd  M  =  ddd   C  =  ddd  M  =  ddd
3      C  =  ddd  M  =  ddd   C  =  ddd  M  =  ddd   C  =  ddd  M  =  ddd

ADF  AVAILABLE                  FDF  AVAILABLE                 UNASSOCIATED
c  =  xxxx  MIN  =  xxxx        c  =  xxxx  MIN  =  xxxx       C  =  xxxx  M  =  xxxx

REFRESH  RATE                 SIO  TRANSFER  RATE
C  =  xx  Hz  MIN  =  xx  Hz   c  =  xxxx  M  =  xxxx

PROCESSOR  UTILIZATION  PERCENTAGES

     DP                   SIO                  SDC
c  =  xx  M  =  xx    c  =  xx  M  =  xx       c=  xx  M  =  xx

where:  C  =  current  value  for  current  interval  (nominally  one  minute)
        CI  =  collection  interval  in  seconds
        M  =  maximum  value  since  power  up
        01  =  update  frequency  in  minutes  (time  interval  for  printing)
```

FIGURE 6-24. FDP STATUS REPORT

```
mm/dd/yy  hh:mm:ss  NID  #  LBP  STATUS  REPORT   DISPLAY=dd     SENSOR=d     OI=dd     CI=ss

          SS                1 LINE DB            2 LINE DB         3 LINE DB
     C=   xx  M=   xx       c=  xxx   M = xxx       c=    xx    M=    xx    c=   xx    M=   xx

KYBD        ASSOCIATED            FP/STORE            CST/SUSPEND
1         C=ddd    M=ddd        C=ddd  M=  ddd        C=ddd  M=ddd
2         C=ddd    M=ddd        C=ddd  M=  ddd        C=ddd  M=ddd
3         C=ddd    M=ddd        C=ddd  M=  ddd        C=ddd  M=ddd

ADF  AVAILABLE              FDF  AVAILABLE                  UNASSOCIATED
c=xxxx   MIN=xxxx           c=xxxx   MIN=xxxx                   C=xxxx M=xxxx

REFRESH  RATE               DP  PROCESSOR  UTILIZATION  PERCENTAGE
C=xx Hz   MIN=xx Hz          C=xx  M=xx
```

FIGURE 6-25. LBP STATUS REPORT

```
mm/dd/yy  hh:mm:ss  NID  #  RDM  STATUS  REPORT   DISPLAY=dd     SENSOR=d     OI=dd     CI=ss

          SS                 1 LINE DB       2 LINE DB           3 LINE DB
     c=xx    M=xx             c=xx     M=xx       c=   xx   M=   xx        c=   xx    M=   xx

KYBD       ASSOCIATED       FP/STORE       CST/SUSPEND
 1        C=ddd   M=ddd   C=ddd   M=ddd     C=ddd  M=ddd
 2        C=ddd   M=ddd   C=ddd   M=ddd     C=ddd  M=ddd
 3        C=ddd   M=ddd   C=ddd   M=ddd     C=ddd  M=ddd

ADF  AVAILABLE        FDF  AVAILABLE            UNASSOCIATED
c=xxxx   MIN=xxxx       c=xxxx   MIN=xxxx         c=xxxx   M=xxxx

          OUTPUT  INTERVAL  STATS
 BITS/SEC        RUN  AVE  WDS  PEND      HI  PRI  BFR  LOAD      REXMIT  REQS  BY
MEAN=  xxx        MIN=   xx   MAX=   xx   MIN=   xx   MAX=   xx     DPS=  xx  RDBM=   xx
FILT  RNG  CHANGES        REMOTE  TRACK  FILTER  RANGE            FRAMES
RED=   xx   INC=   xx     MIN=   xx   MAX=  xx    MEAN=   xx     RCVD=  xxx    SENT=  xxx

      STATS  SINCE  PM  INITIATED
 BITS/SEC        RUN  AVE  WDS  PEND      HI  PRI  BFR  LOAD      REXMIT  REQS  BY
MEAN=  xxx        MIN=   xx   MAX= xx       MIN=  xx   MAX= xx      DPS= xx    RDM= xx
FILT  RNG  CHANGES        REMOTE  TRACK  FILTER  RANGE              FRAMES
RED=   xx  INC=   xx      MIN=   xx  MAX=   xx     MEAN=  xx        RCVD=  xxx     SENT=  xxx

 DP  PROCESSOR  UTILIZATION  PERCENTAGE      SIO  TRANSFER  RATE
          c=xx   M=xx                        c=  xxx   M=  xxx
```

FIGURE 6-26. RDM STATUS REPORT

```
mm/dd/yy  hh:mm:ss  NID  #  ACD  STATUS  REPORT  DISPLAY=dd   SENSOR=sss   OI=dd   CI=ss

       SS              1 LINE DB          2 LINE DB          3 LINE DB
  c=xx   M=xx         c=xx    M=xx          c=xx    M=xx         c=xx   M=xx

 KYBD      ASSOCIATED         FP/STORE        CST/SUSPEND

  1       C=ddd   M=ddd     C=ddd   M=ddd     C=ddd  M=ddd  1
  2       C=ddd   M=ddd     C=ddd  M=ddd     C=ddd  M=ddd  1
  3       C=ddd   M=ddd     C=ddd  M=ddd     C=ddd  M=ddd  0
 ADF  AVAILABLE           FDF  AVAILABLE          UNASSOCIATED
 c=xxxx  MIN=xxxx          c=xxxx  MIN=xxxx       c=xxxx  MAx=xxxx
 PROCESSOR  UTILIZATION  PERCENTAGES
                DP
            c=xx   M=xx

                UPDATE  PERFORMANCE  STATISTICS
 UPDATE     TOTAL        AVERAGE  TIME  (MILLS)     MAXIMUM  TIME  (MILLS)
-------------------------------------------------------------------------------
 DISPLAY      xxx                xx                        xx

 TRACK  MAP    wx    ASR9      NUMBER     AVG  (MILLS)     MAX  (MILLS)
-------------------------------------------------------------------------------
   X                              141           27              29
          X                         0            0               0
   X      X                         0            0               0
                 X                  0            0               0
   X             X                  0            0               0
          X      X                  0            0               0
   X      X      X                  0            0               0
                        X         205            1               3
   X                    X          51           29              32
          X             X           0            0               0
   X      X             X           0            0               0
                 X      X           0            0               0
   X             X      X           0            0               0
          X      X      X           0            0               0
   X      X      X      X           0            0               0
```

FIGURE 6-27. ACD STATUS REPORT (SINGLE SENSOR MODE)

```
mm/dd/yy hh:mm:ss NID# ACD STATUS REPORT  DISPLAY=ddd  SENSOR=M/sss  OI=dd  CI=ss
       ss              1 LINE DB          2 LINE DB          3 LINE DB
 C=xxxx   M=xxxx    C=xxxx   M=xxxx    C=xxxx   M=xxxx    C=xxxx   M=xxxx
 KYBD      ASSOCIATED         FP/STORE         CST/SUSPEND
  1       C=ddd   M=ddd      C=ddd   M=ddd    C=ddd   M=ddd
  2       C=ddd   M=ddd      C=ddd   M=ddd    C=ddd   M=ddd
  3       C=ddd   M=ddd      C=ddd   M=ddd    C=ddd   M=ddd
 STF  AVAILABLE         STF  ASSOCIATED          STF  UNASSOCIATED
 C=xxxx MIN=xxxx      c=xxxx  MAx=xxxx         c=xxxx  MAX=xxxx
 ADF  AVAILABLE             FDF  AVAILABLE         UNASSOCIATED
 sss  C=dddd  MIN=dddd      C=dddd  MIN=dddd       sss  C=dddd  MAX=dddd
 sss  C=dddd  MIN=dddd                             sss  C=dddd  MAX=dddd
 sss  C=dddd  MIN=dddd                             sss  C=dddd  MAX=dddd
 sss  C=dddd  MIN=dddd                             sss  C=dddd  MAX=dddd
 sss  C=dddd  MIN=dddd                             sss  C=dddd  MAX=dddd
 sss  C=dddd  MIN=dddd                             sss  C=dddd  MAX=dddd
 sss  C=dddd  MIN=dddd                             sss  C=dddd  MAX=dddd
 sss  C=dddd  MIN=dddd                             sss  C=dddd  MAX=dddd
 sss  C=dddd  MIN=dddd                             sss  C=dddd  MAX=dddd
 sss  C=dddd  MIN=dddd                             sss  C=dddd  MAX=dddd
 PROCESSOR  UTILIZATION  PERCENTAGES
                DP
            c=xx  M=xx
                UPDATE  PERFORMANCE  STATISTICS
 UPDATE     TOTAL        AVERAGE  TIME  (MILLS)     MAXIMUM  TIME  (MILLS)
-----------------------------------------------------------------------------
 DISPLAY      159                12                        110
 TRACK  MAP    wx    ASR9      NUMBER     AVG  (MILLS)     MAX  (MILLS)
-----------------------------------------------------------------------------
   X                                24            59                61
          X                          0             0                 0
   X      X                          0             0                 0
                 X                   0             0                 0
   X             X                   0             0                 0
          X      X                   0             0                 0
   X      X      X                   0             0                 0
                        X         126             0                 2
   X                    X           8            50                62
          X             X           0             0                 0
   X      X             X           0             0                 0
                 X      X           0             0                 0
   X             X      X           0             0                 0
          X      X      X           0             0                 0
   X      X      X      X           1           110               110
```

FIGURE 6-27A. ACD STATUS REPORT (MOSAIC MODE)

6.4.5 **CQARS Status Report**

The Common Arts Quick Analysis of Radar Sites (CQARS) status reporting function provides for the monitoring and confirmation of the radar subsystem interfaces. It provides inter-sensor linking errors for evaluating operational suitability of a Mosaic system.

A CQARS status report (Figure 6-28) is automatically printed every collection time interval which can be user specified. The status report is output on the HSP, if it is on-line; otherwise, the report is output on the PC printer. The report is also recorded as performance data in the same format as printer data.

```
CQARS  Status  Report
 START  TIME    END  TIME      SENSOR    SCANS
    xx:xx        xx:xx        xxx       xxx
                  THRESHOLD     CURRENT
                       %            %
3CN  BLIP/SCAN        >xx          xx
RDR  BLIP/SCAN        >xx          xx
BCN RTQC              >xx          xx
RDR  RTQC             >xx          xx
YODE  3/A             >xx          xx
YODE  C               >xx          xx
RR  BCN               >xx          xx
BCN  SPLITS           <xx          xx
RDR  SPLITS           <xx          xx
3/A  ZERO  CODES      <xx          xx
RSM   x               >xx          xx
                       .            .
                       .            .
                       .            .
RSM   x               >xx          xx
BIT  25               <xx          xx
INTER-SENSOR  LINKING  ERROR
    THRESHOLD      DIST  NM.  SAMPLES
xxx     o.xx          o.xx      xxxx
                       .          .
                       .          .
                       .
xxx     o.xx          o.xx      xxxx
TOTAL  TARGETS        xxxxx
 RR  BCN              xxxxx
 BCN  ONLY            xxxxx
 RDR  ONLY            xxxxx
  CORRELATED          xxxxx
  UNCORRELATED        xxxxx
                 NEW     DELETED
TRACKS           xxx       xxx
 RR  BCN         xxx       xxx
 BCN  ONLY       xxx       xxx
 RDR  ONLY       xxx       xxx
ASR-9  BCN  HIT  COUNT     xxx
ARSR  BCN  RUN  LENGTH     xxx
ARSR  RDR  RUN  LENGTH     xxx
ALT  CHANGE  >  700        xxx
                       ASR-9  TARGET  ATTRIBUTES
ARTS  IIIA  QUALITY      CONFIDENCE              QUALITY          TRACK  ELIGIBILITY
              %                    %                    %                    %
 QUAL   0   xx          CONF  0    xx          QUAL  0    xx          ELIG  0    xx
 QUAL   1   xx          CONF  1    xx          QUAL  1    xx          ELIG  1    xx
 QUAL   2   xx          CONF  2    xx          QUAL  2    xx          ELIG  2    xx
 QUAL   3   xx          CONF  3    xx          QUAL  3    xx          ELIG  3    xx
 QUAL   4   xx          CONF  4    xx
 QUAL   5   xx          CONF  5    xx
 QUAL   6   xx
 QUAL   7   xx
```

FIGURE 6-28. CQARS STATUS REPORT

7.0 TEST SUPPORT PROGRAMS

This section describes the keyboard entries for the Test Support Programs.

7.1 INTERFACILITY TEST PROGRAM (F14)

The Inter-facility Test Program provides the ARTS IIIE system with the capability of simulating inter-facility communications. This program is designed to be used as a debugging and/or test aid.

The keyboard entries (F14) that control the Interfacility Test Program are listed in Table 5-1.

7.2 INTERFACILITY PRINTOUT PROGRAM (F10)

The Inter-facility Printout (INPRINT) program provides the ARTS IIIE system with the capability to print messages received from the ARTCC. This program is always resident within the operational program and is enabled or disabled for the various message types by a display keyboard entry (F10, see Table 5-l) or at the SMS (see Function Configuration Group, Interfacility Config, paragraph 4.4.2).

The INPRINT program generates two types of printouts on the SMC PC printer:

1. All enabled IF messages in the format received from the ARTCC.
2. INPRINT DL (data loss) if an input message which is enabled for INPRINT was not printed because no print buffers were available.

All messages received from the ARTCC that cause an IF FORMAT printout are automatically printed by INPRINT whether or not the message type is enabled.

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8.0 OFF-LINE PROGRAMS

Off-line programs are designed for support, functional verification, or diagnostic purposes, and are executed in an environment independent of the operational program. In the ARTS IIIE Upgrade system, these tests may be categorized by executing processor type. In general, these tests can be grouped into tests that are written in C code and executed on 680XX microprocessor-based VME processor chassis and those tests that are retained from previous ARTS systems. Descriptions and Test Procedures for these tests are contained in the Computer System Diagnostic Manual (CSDM), ATC 61098.

8.1 LOADING AND STARTING VME OFF-LINE PROGRAMS

Starting the programs is a function of what the executing software is to accomplish. In some cases, the software is a start-up diagnostic routine and occurs when the chassis is initialized. Some software routines are invoked by SMC menu selection. This involves the operator selecting a maintenance program from the SMC Standby or Off -line PC menu. Off -line tests include the execution of tests/diagnostics through the use of the Maintenance PC. The Maintenance PC is a PC that is portable and may be positioned in close proximity and connected to a VME chassis. An I/O cable connection from the Maintenance PC to the DVME-134 processor card (old style chassis) or front panel of new style chassis completes the interface. Certain chassis switch settings (paragraph 9.1 .1 or 9.1.2) are necessary prior to loading and executing the program(s). The Maintenance tests are run at a card level or system level.

TABLE 8-I. VME-BASED OFF-LINE PROGRAMS AND RESOURCE REQUIREMENTS

Program Name	Hardware Required	Software/Firmware Required
AGW Processor Diagnostic	AGW	
CP Processor Diagnostic	CP	
RDM Processor Diagnostic	RDM	
SMC Processor Diagnostic	SMC	
TP Processor Diagnostic	TP	
FDAD Display Processor Diagnostic	FDP	CLD/SLD
ACD Display Processor Diagnostic	ACD	
Local BANS Processor Diagnostic	LBP	CLD/SLD
Sensor Gateway Diagnostic	SG	CLD/SLD
Full Digital ARTS Display Test	FDAD	
SMC-PC Diagnostic	SMC-PC	
Local Area Network Test	SMC-PC, SMC, and any combination of NIDs	

TABLE 8-I. VME-BASED OFF-LINE PROGRAMS AND RESOURCE REQUIREMENTS (Continued)

Program Name	Hardware Required	Software/Firmware Required
Printer Test	SMC-PC, SMC, EP, HSP	
Disk Test	SMC-PC, SMC or CP or RDM or TP or AGW	
Remote Tower Display Test	SMC-PC, SMC, Remote DBRITE	
Sensor Test	SRAP, SG, SMC-PC, SMC, HSP, TP, FDAD	
Serial Channel Loopback Test	SMC-PC, SMC, CP, or RDM or TP	
Limited Display Diagnostic Test	FDAD, ACD, or Local DBRITE	Op Program (not required for ACD)

9.0 DEBUG AIDS

9.1 MICROPROCESSOR-BASED SOFTWARE AIDS

Two software aids resident in the microprocessor software may be used for software performance analysis, error detection, and a limited correction capability. The two aids are pROBE+ and the software-generated Suicide Note. A Maintenance PC must be connected to the microprocessor to generate pROBE+ commands and provide display of the requested information.

pROBE+ is a resident software performance and debugging tool used in conjunction with the pSOS+ operating system. pROBE+ allows display and modification of memory and registers, assembly/disassembly of instructions, execute, trace, and breakpoint. pROBE+ also provides monitor and query functions and break capability.

A Suicide Note is written whenever a fatal system error or an exception error interrupt occurs. It contains a code indicating what type of error occurred, from which NID, line number, etc. Suicide Notes may be viewed, printed, or cleared through referencing the SCS ARTS Tools Group, Suicide Note Utility. Refer to paragraph 4.5.6.

9.1.1 Using pROBE+ (used only in the old style chassis).

At the microprocessor chassis:

1. Connect the cable from the Maintenance PC to the DVME-134 card.
2. On the DVME-134 card, place the FSO switch down and the FS1 switch up.
3. Press the large red RST button. This restarts the chassis with pROBE+ initialized and under the control of the terminal or PC.

At the Maintenance PC keyboard:

1. When the PC is being used, it must be in the PROCOMM PLUS program. Type PCPLUS and press successive <Return> keys until the pROBE+ prompt is displayed.

The microprocessor software execution is under pROBE+ control (refer to *pROBE+ 68K* User's Manual, Release 2.0) for a description of pROBE+ commands.

9.1.2 Using the Suicide Note

In all cases except for the SDC, the writing of the Suicide Note occurs in an area of memory unaffected by chassis resets or the position of the WRPROT toggle switch.

In the case of the SDC chassis, the writing of the note is controlled by a switch in the upper right corner of the FDAD maintenance panel. The toggle switch is WRITE PROTECT SDC. In order to write the Suicide Note, the switch must be in the OFF position.

9.1.2.1 All Chassis Except SDC Chassis. The Suicide Note may be read by using pROBE+ to read the memory locations, (old style chassis only), or the display memory readout may be used.

The display memory readout may be initiated from either the display associated with the chassis or another display requesting readout of this chassis. ACD Suicide Notes are conveniently referenced via snote, a Suicide Note utility program. Whichever method is used, the Suicide Note locations are as follows:

Address	Board
FF810	DVME-134
FF830	DVME-750 LAN A
FF850	DVME-750 LAN B
FF870	DVME-704
Offset 12DF from base of non-volatile memory	MVME-2700
FFFC0400	MVME-177
FFFC0440	SVME-739
FFFC0420	SVME-744
FFFC0460	744 TRUNK A
FFFC0480	744 TRUNK B

The structure of the note is as follows:

Offset	Bytes	Contents
0	4	Status Code (software-generated)
4	4	Program Counter
8	2	System Status Register
A	2	Exception Vector
C	2	Processor Board ID

The Program Counter, System Status Register, and Exception Vector fields are described in the MC68020 Microprocessor User's Manual.

The Processor Board ID field indicates the failed board. Byte D (the lower half only) contains the failed board indicator.

Byte D Value (Hex)	Failed Component
0	DVME - 134 board
1	DVME -704 board
2	DVME-750 board
3	MVME- 177 board
4	SVME-739 board
5	SVME-744 board

The Status Code field indicates the type of failure.

Status Code (Hex)	Description
0	Hardware-related problem.
1-7	pSOS+ service error (refer to the *pSOSystem* Programmer's Reference *Manual 68K Processors* Release 2.0 for a detailed description of error codes).
8	The allocated buffer for frames received from the SDC/RDBM has overflowed.

Status Code (Hex)	Description
9	Received unrecognizable frame type from the SDC.
A	The location monitor on the NIA DVME-134 board was written into an illegal address.
B	A collection buffer contains a message that extends beyond the end of the buffer.
C	The location monitor on an SIA DVME-704 board was written into at an illegal address.
D	The location monitor on a LANC DVME-750 board was written into at an illegal address.
E	The specified message byte count exceeds the size of the output buffer.
F	The location monitor on the DP DVME-104 board was written into an illegal address.
10	The length of the DP initialization is bad.
11	A chassis reset has been requested.
12	An invalid chassis ID was detected on a DP chassis (not FDP or LBP).
13	The LANCE chip detected a fatal error during initialization.
14	An unexpected status was detected in the GSR on a DMA channel 3 interrupt.
16	An invalid chassis ID was detected on an NIA chassis.
17	LANCE BABBLE error has occurred.
18	LANCE MEMORY error has occurred.
19	LANCE TRANSMIT error has occurred.
1A	The location monitor on the SMC DVME-704 board was written to at an illegal address.
1B	Illegal target number was determined from DVME-134 location monitor interrupt.
1C	Small Computer System Interface (SCSI) Host Adapter command timed out.
1D	Both LANC boards are down (chassis reset).
1E	Illegal PLD channel 0 status.
1F	Hardware Control Confidence Test (PLD).

Status Code (Hex)	Description
20	An invalid word count was passed to XC7_COPY.
21	SCSI Command Completion Timeout - no response.
22	Both LANC boards are down - do not start downloaded Maintenance Program.

9.1.2.2 SDC Chassis. There are two methods for accessing the Suicide Note. If the system is operational, a memory readout of the SDC memory can be used to get the Suicide Note. (See Read Memory function, Keyboard entry F7, R).

The other method of accessing the Suicide Note is as follows:

1. On the DVME-104 card, place FSO and FS1 in the up position.
2. On the DVME-104 card, connect a terminal to the port.
3. At the maintenance panel of the FDAD, press the BFDAD RESET switch.
4. At the terminal, enter the command “d 700800” and press enter.
5. Observe contents of EEPROM addresses 700800 through 70080D.

The structure of the note is as follows:

Offset	Bytes	Contents
0	4	System Status
4	2	Status Register
6	4	Program Counter
A	2	Exception Vector
C	2	Processor Board ID

System Status	Always set to zero
Status Register	Contains the contents of both the system and user bytes of the microprocessor Status Register (SR).
Program Counter	Contains the contents of the microprocessor Program Counter (PC). This is the address of the program instruction that follows the subroutine call to the fatal processing unit. A memory load map is needed to determine the cause of the error.
Exception Vector	Always set to zero.

The Processor Board Status field indicates the failed board. Byte D contains the failed board indicator. The failed board indicator is the DVME number for the board (e.g., 104 for the DVME-104).

10.0 SENSOR ALIGNMENT VERIFICATION AND REGISTRATION PROCEDURES

This section contains procedures for site personnel to analyze sensor alignment and registration. These procedures are used to ensure that sensor alignment is within expected tolerances.

Accurate alignment of an individual sensor is important so that the (dynamic) situation display of target data coincides with the (static) geographic map. In addition, if the sensor is not physically aligned in a manner consistent with software site adaptation, then the safety functions of Minimum Safe Altitude Warning (MSAW) and Conflict Alert (CA) will not function optimally.

The sensor registration function (also called Real Time Quality Control - RTQC) calculates range, azimuth biases that may exist for pairs of sensors specified in site adaptation. A registration bias is defined as the difference in range and azimuth between an assumed "true" target position and the "reported" target position in the system plane. The "true" target position does not need to be known to compute the registration bias. The bias is computed for a given sensor by comparing the beacon targets from this sensor with simultaneous targets from other sensors that have coverage of the same aircraft. Accurate registration of data from multiple sensors is necessary to support intersensor linking, MSAW, and CA.

10.1 SENSOR ALIGNMENT VERIFICATION

Sensor alignment verification is the process of ensuring that target reports received from a sensor for known fixed targets are accurate with respect to their surveyed locations. A fixed target can be a permanently mounted beacon target (ATCRBS parrot or Mode S CPME, generally referred to as a parrot in this procedure), or a primary radar permanent echo. The procedure compares the calculated location of a fixed target with the actual reported location. When tolerances are exceeded, the appropriate sensor (e.g., ASR-7/8/9, ARSR, Mode S, ATCBI, etc.) and/or digitizer (e.g., CD-2, ASR-8 Digitizer, etc.) maintenance documentation should be consulted to correct the sensor calibration.

If the expected range and azimuth differ from the reported range and azimuth by no more than the alignment tolerances for the sensor, no adjustment of the incoming data is needed. For a sensor which shows a consistent range and azimuth error for all fixed targets that is within tolerance, it may be useful to apply a bias correction for the sensor. This correction is applied during transformation of range, azimuth coordinates to the system plane X,Y coordinates. The main effects of the application of range, azimuth corrections are in the following functions:

- Inter-Sensor Linking
- MSAW
- CA
- Displayed X,Y position of target and track symbology on displays which have selected an ARSR as backup for an ASR.

There is no effect on the display of track symbology on ASR displays for those aircraft for which Common ARTS is receiving target data. However, the position of pseudo tracks will be affected by the alignment corrections, since pseudo track X,Y coordinates are derived from system coordinates.

The data required for the sensor alignment verification procedure are:

From the sensor site survey:

- Sensor location specified in latitude and longitude according to WGS-84. The values should be to the best available precision; 0.1” resolution is standard. If the latitude and longitude are given in degrees with decimal fractions, the values should be accurate to five fractional places. If the best available accuracy is less, use the values as supplied. (It may be necessary in this case to increase the error tolerances, as noted in paragraph 10.1.3.)
- Magnetic variation in use at the sensor (generally applies only to terminal sensors where zero-azimuth is aimed at magnetic north). This is also known as magnetic declination. The value should be accurate to the tenth of a degree (0.1”).
- Fixed target location specified in latitude and longitude, with the same precision as the sensor location.
- Fixed target range delay in microseconds.

From the Common ARTS operational site:

- Recorded target data.
- Site Parameters for System plane definition:
  - Conformal Radius
  - Tangency Geodetic Latitude
  - Tangency X-Offset
  - Tangency Y-Offset

The Sensor Alignment Data Sheet provides a convenient location to record the survey information and alignment verification results for a sensor and a single fixed target. Copies of the data sheet with the sensor information will be needed for each additional fixed target. Results for all fixed targets should be determined before making any adjustment to the sensor alignment.

10.1.1 Calculate Expected Target Position

The procedure to calculate the expected value of a fixed target location requires a program to transform lat/lon into range and azimuth relative to the sensor origin, and also to the System Plane X/Y coordinates. Common ARTS provides the ‘Lat/Long X/Y Calculator’ on the SMC-PC in the ARTS Tools program group for this purpose.

A beacon parrot generates a reply to an interrogation a precisely defined time after the interrogation is received. The parrot will appear to be further away from the sensor than its surveyed position if the delay is more than the standard transponder delay. A parrot is set up with such a **range delay** to place its apparent position where it will not interfere with normal traffic. The apparent range is the range calculated from the surveyed position plus the distance the radar signals would have traveled (twice, once each way) during the extra delay; the azimuth is unchanged.

10.1.1.1 Calculate Expected Fixed Target Range and Azimuth

Steps:

1. Start the ‘Lat/Long X/Y Calculator’ at the SMC-PC (see paragraph 4.5.9). (In this application, the calculator “projects” the lat/lon of a point on the earth’s surface to a rectangular coordinate plane tangent to the earth at the sensor origin,)

2. In the box labeled Tangency Point, enter the degrees, minutes, seconds of the sensor latitude in the row of boxes labeled Geodetic Latitude. Enter the degrees, minutes, seconds of the sensor longitude in the row of boxes labeled Longitude. Select the lat/lon direction, as necessary (default values of North latitude and West longitude are applicable for nearly all sites).

3. Do not enter a value in the box labeled Radius of Projection. Ensure the check box labeled Auto is checked. (The calculator will compute the radius based on the Geodetic Latitude.)

4. Do not enter values in the boxes labeled Stereo Origin Offset, XT/YT. (i.e., the sensor origin is 0,0 in the X,Y coordinate plane)

5. In the boxes labeled Magnetic Variation, enter the magnitude of the variation (in degrees) and its direction (East or West).

6. In the box labeled Point to be Converted, enter the degrees, minutes, seconds of the fixed target latitude in the row of boxes labeled Lat. Enter the degrees, minutes, seconds of the fixed target longitude in the row of boxes labeled Lon. Select the lat/lon direction, as necessary.

7. In the box labeled Coordinate Type, select the Polar radio button.

8. In the box labeled Point to be Converted, click the < symbol box.

9. Observe the boxes labeled Range and Azimuth. These values represent the distance and bearing of the physical location of the fixed target relative to the sensor.

   Convert the azimuth in degrees to ACPs by multiplying the value in the Azimuth box by 2048/180 and round to the nearest 0.01 ACP.

   Record the converted value as the Expected Fixed Target Position Azimuth.

   If the fixed target has a non-zero range delay, note the value in the box labeled Range and execute steps 11 - 12. If the fixed target has no range delay, execute step 10.

10. Record the value in the box labeled Range as the Expected Fixed Target Position Range. Copy each component (degrees, minutes, seconds, and N or S) of the Surveyed Latitude of the target as its Apparent Latitude. Copy each component (degrees, minutes, seconds, and E or W) of the Surveyed Longitude of the target as its Apparent Longitude. Skip the remaining steps in this section.

11. Compute the range delay adjustment in Nautical Miles (NM) by dividing the range delay (in microseconds) by 12.36. Add this quantity to the range from step 9 and record this sum as the Expected Fixed Target Position Range.

    Enter the same value in the box labeled Range in the calculator.

12. Click the > symbol box to recalculate the latitude and longitude. Record the latitude and longitude displayed in the calculator's Lat and Lon windows as the Apparent Latitude and Apparent Longitude.

10.1.1.2 Calculate the Position in the System Plane of the Fixed Target. In this application, the Lat/Lon Calculator projects the fixed target lat/lon onto the rectangular system coordinate plane.

Steps:

1. Start the lat/long calculator if it is not already running.

2. In the box labeled Tangency Point, enter the degrees, minutes, seconds of the Tangency Geodetic Latitude from the site parameters in the row of boxes labeled Geodetic Latitude. Enter the degrees, minutes, seconds of the Tangency Point Longitude from the site parameters in the row of boxes labeled Longitude. Select the lat/lon direction, as necessary.

3. In the Radius of Projection box, enter the "Conf Radius" value in the site parameters. Clear the Auto checkbox if it is checked.

4. In the box labeled Stereo Origin Offset, enter the X-Offset from the site parameters in the box labeled XT and enter the Y-Offset from the site parameters in the box labeled YT,

5. In the boxes labeled Magnetic Variation, enter 0 for the magnitude. The choice of E or W for Direction has no effect.

6. In the box labeled Point to Be Converted, enter the degrees, minutes, seconds of the fixed target Apparent Latitude in the row of boxes labeled Lat. Enter the degrees, minutes, seconds of the fixed target Apparent Longitude in the row of boxes labeled Lon. Select the lat/lon directions, as necessary.

7. In the box labeled Coordinate Type, select the Rect radio button.

8. In the box labeled Point to be Converted, click the < symbol box.

9. Observe the boxes labeled X,Y. These values are the X,Y coordinates of the Apparent Position of the fixed target relative to the system plane.

   Record the value from the box labeled X in the X column of the Expected row of the Fixed Target Position in System plane table.

   Record the value from the box labeled Y in the Y column of the Expected row of the Fixed Target Position in System plane table.

10.1.2 Determine Reported Location from Recorded Data

Continuous Data Recording (CDR) captures the target reports received from the sensor, including:

- The range and azimuth of the target reported by the sensor.
- The X and Y coordinates of the target in the system plane after coordinate conversion.

The CDR Editor allows determination of the location of the target that is reported by the sensor by viewing the appropriate data class: BT (Beacon Target Reports) for a parrot, RT (Radar Target Reports) for a permanent primary echo.

Steps:

1. CDR should normally be running and recording representative data. Select a disk file that will provide at least thirty target reports for the fixed target. For a sensor scan time of 4.6 seconds, this will require at least 2 minutes and 15 seconds. A longer interval will provide a greater probability of obtaining a good data sample.

2. Start the CDR Editor at the SCM-PC (see paragraph 4.51).

3. Select an existing session parameter file, or define a new one, that is created as follows:

a. Select the “Input” tab and specify the disk selected for output above (in this case disk 0) by selecting the Add... button, navigating the disk file hierarchy, and selecting the OK button.

b. Select the “Classes” tab and select a data class to include the required target report class (BT for a secondary parrot, RT for a primary fixed echo).

c. Select the “Filters” tab and set appropriate filters to include the desired target reports and exclude extraneous ones by selecting the filter in the Available Filters box, clicking the > button, and entering the appropriate control information for the filter in the box to the right of the Selected Filter List.

(1) A “Start/End Time” filter can be used to limit the data from an extensive CDR data file.

(2) For an ARTS site with more than one sensor supplying target reports, a “Sensors” filter can restrict data to input from the sensor being considered.

(3) For an ATCRBS parrot, a “Beacon Codes” filter can be set, with the octal code in the Beacon Codes Box.

(4) For primary radar permanent echoes, “Azimuth” and “Range” filters can be set to include the area around the expected target location computed in part 1 above; the filters should be wide enough that target reports are included even if they differ by several times the alignment limits.

d. Select the “Output” tab. In the Output File Options box, specify a convenient disk directory and file and click the View Output After Run checkbox.

e. Select the “Control” tab and verify that the session parameters displayed are as entered.

4. Click the Start button (the green circle) to run the editing process on the input data. If the editor is unable to run with the selected parameters, it will display an error message in the message area at the lower left of the window. Otherwise, the blue bar graphs in the Processing Progress window will show the percentage of each input file that has been processed. When they reach 100%, the output file will be complete and a notepad window will open to display the output file.

5. Examine the output file for target reports from the fixed target. Parrots can be identified by the beacon code, while permanent echoes can be identified only by position. The range of a target report is found in the output file under the column heading “RANGE” (subhead “NM”) and the azimuth under the column heading “ACP.” In general, if there are at least thirty reports for the target where the position of the target does not vary (min to max) by more than 1 .O NM and 50 ACPs, the run can be considered for alignment analysis. Otherwise, it may be necessary to rerun the CDR Editor with a longer time interval, move the interval within the duration of the CDR file, use wider position filters, or use a different CDR file. Additional reports, beyond the required 30, may exceed the limits above without requiring a new CDR Editor run, as long as there are at least 30 qualifying reports. If in doubt, proceed with Step 6.

6. The mean value of the range or azimuth is the average of all reports in the sample. The mean range and mean azimuth are most likely the true underlying values. Several cases may occur in practice:

a. **Single Value:** Occasionally, only one value will occur in one or both distributions, making it trivial to identify the mean. If there is only one range value in the report sample, record that value as the Reported Fixed Target Position Range. If there is only one azimuth value in the report sample, record that value as the Reported Fixed Target Position Azimuth.

b. **Limited Variability:** Usually, two or three values that differ by the minimum representable difference (0.0625 NM, 1 ACP) will occur in the sample. Compute the mean for the range or azimuth by multiplying each distinct value occurring in the sample by the number of times it occurs, summing the products, and dividing the sum by the number of times all values occur (the number of reports used). Record the mean range as the Reported Fixed Target Position Range and the mean azimuth as the Reported Fixed Target Position Azimuth.

c. **Manual Filtering:** If a parrot has two or more frequently reported positions that differ by more than a few ACPs and also differ in range, reflectors may be causing false target images. In this case, the report with the shortest range is usually the real target and should correspond to the expected location. Any report that has greater range and a different azimuth can be manually excluded as a reflection (the entire report should be excluded). If the number of samples remaining is less than thirty, a longer time interval should be used in the CDR Editor. If range and azimuth means result that qualify by the preceding rules, record them as the Reported Fixed Target Position Range and Reported Fixed Target Position Azimuth.

d. **General Case:** If the range and azimuth distributions still do not provide a simple mean value computation, it may be necessary to make a histogram of the data to determine the mean. Tabulate the number of occurrences of each range value, and determine the mean range of the sample by multiplying each distinct range value occurring in the sample by the number of times it occurs, summing the products, and dividing the sum by the number of times all values occur (the number of reports used); record the mean range as the Reported Fixed Target Position Range. Tabulate the azimuth values in the sample and compute the mean azimuth similarly, recording the mean azimuth as the Reported Fixed Target Position Azimuth.

e. If steps (a) through (d) fail to identify a range and azimuth value for the fixed target, it may be necessary to start again with different data, as described in step 5.

7. The target report columns labeled “SYSTEM” with subheadings “X NM” and “Y NM” are the X and Y coordinates. respectively, of the target in the system plane. Examine these columns in the target reports selected in Step 6 to determine the means of the distributions of the X coordinate and Y coordinate. Record these values as X and Y in the Before Adjustment row (or the After Adjustment row if performing the adjustment validation step in 10.1.3) in the Fixed Target Position in System plane table. Compute the distance of the reported target position from the calculated position by squaring the differences in X and Y, summing the squares, and taking the square root of the sum. Record the distance in the Distance column for the row.

10.1.3 Compare Expected and Actual Locations

Steps:

1. Subtract the Expected Fixed Target Range from the Reported Fixed Target Range. Record the signed difference in NM, with up to 3 fractional digits, as the Fixed Target Position Difference Range.

2. Subtract the Expected Fixed Target Azimuth from the Reported Fixed Target Azimuth. Record the signed difference in ACPs, with up to 2 fractional digits, as the Fixed Target Position Difference Azimuth.

3. Record the Alignment Tolerance Range and Alignment Tolerance Azimuth according to the type of sensor from the Operating Tolerance columns in the Accuracy Tolerances table below. If the site survey precision is less than standard (as mentioned in paragraph 10.1 .1), it may not be possible to enforce the alignment tolerance limits, since the rounding errors in the surveyed locations can contribute to apparent alignment bias.

4. Enter the Fixed Target Position Difference as the sensor bias correction with the Apply Specified RTQC Registration Corrections (F11) command at the SMC keyboard. Enter **CA R** and the 3-character sensor id, **R** and the Fixed Target Position Difference Range in NM (+ for positive or N for negative, zero or one integer digit, and optionally a decimal point and up to three fractional digits), **A** and the Fixed Target Position Difference Azimuth in ACPs (+ for positive or N for negative, zero to two integer digits, and optionally a decimal point and up to two fractional digits) and **ENTER.** For instance:

   - **CA RJFKRt.25AN2.4**
   - **CA RJFKRN0.922A+1.16**

5. Display the RTQC status on the SMC-PC with the RTQC Status Printout Request **CA R** at the SMC. The line for the sensor should have the word "Applied" and the newly entered range and azimuth correction values.

Accuracy Tolerances				
Sensor Type	Initial Tolerance		Operating Tolerance	
	Azimuth	Range	Azimuth	Range
Mode S/ASR	± 2 ACP	± 0.063 NM	± 2 ACP	± 0.063 NM
Non-Mode S/ASR	± 2 ACP	± 0.063 NM	± 5 ACP	± 0.063 NM
Mode S/ARSR	± 2 ACP	± 0.125 NM	± 2 ACP	± 0.125 NM
Non-Mode S/ARSR	± 4 ACP	± 0.250 NM	± 4 ACP	± 0.250 NM

For sensors that have more than a single fixed target, the above calculations should be performed for each fixed target prior to entering the correction. Agreement of the range and azimuth differences calculated for fixed targets that are separated in azimuth confirms that the sensor bias model is appropriate. Small differences in the calculated differences can be averaged to obtain a single correction.

If the calculated bias differs between fixed targets by more than 1 ACP in azimuth or 1/16 NM (0.063 NM) in range, especially if the sign changes, or if adjusting the bias for one target increases the error for another, it may indicate that the fixed target location calculations in paragraph 10.1 .1 are inaccurate. in this case, the surveyed lat/long location of the sensors and each fixed target should be verified.

If a registration correction is applied, the position of the fixed targets in the System Plane will be affected, and provide an opportunity for adjustment validation. Use the procedure in paragraph 10.1.2, steps 3 through 7 (without entering range and azimuth data) to find the X, Y, and Distance values for the "After Adjustment" row of the Fixed Target Position in System plane table. The After Adjustment Distance should be less than the Before Adjustment Distance. If the sensor has more than one fixed target, it is important that the alignment bias adjustment reduce the Distance for all targets.

Sensor Alignment Data Sheet

Sensor Name: _____

Sensor Location: Latitude: - ° - ′ - ″ - W)
Longitude: - ° - ′ - ″ - (E|W)

Magnetic Variation: ° - W ′)

Fixed Target Identifier: _____ Beacon Code: _____

#	Pri or Sec	Surveyed Latitude				Surveyed Longitude				Range Delay (usec)	Apparent Latitude				Apparent Longitude			
		°	′	″	N S	°	′	″	E W		°	′	″	N S	°	′	″	E W

All data to this point (except apparent latitude and longitude) should be obtained before starting the alignment verification procedure steps.

Reported Fixed Target Position:

Range _____ NM Azimuth_____ ACPs

Expected Fixed Target Position:

Range _____ NM Azimuth_____ ACPs

Fixed Target Position Difference:

Range _____ NM Azimuth_____ ACPs

Alignment Tolerance:

Range _____ NM Azimuth_____ ACPs

Fixed Target Position in System plane:

	X	Y	Distance
Expected	NM	NM	
Before Adjustment	NM	NM	NM
After Adjustment	NM	NM	NM

10.2 REGISTRATION

Registration is the process of adjusting the received observations of the same aircraft by multiple sensors so that the adjusted observations coincide when referenced to a common coordinate system. In contrast to the Sensor Alignment Verification function, which attempts to align a single sensor in an absolute manner using known fixed target locations, the registration function attempts to find an optimal relative position, accounting for possible range and azimuth biases in each sensor. The operator may choose to apply corrections for the biases, which would bring the multiple observations closer to each other in the system plane.

The registration corrections are used only in sensor-to-system coordinate conversion. The corrections are not applied to the coordinates used for sensor tracking and controller display for ASRs. see paragraph 10.1 for the functions which are affected by application of registration corrections.

Categories of registration biases include the following:

- Range
- Azimuth
- Time
- Track time-correction
- Coordinate conversion.

Range biases can be due to range offset, range clock rate error, and signal propagation. Azimuth biases can be caused by antenna alignment and tilt errors.

Time biases can occur if there is inconsistency between pairs of sensors in the dissemination of sector mark and test target messages. It may seem counterintuitive, but digitizer delay for individual target messages is not a source of bias, since Common ARTS assigns a time-tag to a track based on a separate “adjusted sector time”. Adjusted sector time is based on the time of the start of a sector (one of 32 11.25 degree azimuth intervals that divide the scan) plus an interpolated adjustment using the azimuth of the target. Sector time is determined by the receipt of sector mark messages for ASR sensors and from test target messages for ARSRs.

Track time-correction biases occur when the track velocity vector does not accurately reflect the current maneuver of an aircraft. The registration function uses the velocity vector of one of the tracks in a pair to extrapolate its reported position to the time of the other track.

Coordinate conversion biases result from an incorrect transformation of sensor to system coordinates. Some biases may be induced by incorrect adaptation for sensor locations and magnetic north. Other biases may be due to slant range correction approximation and the stereographic projection approximation.

This section deals with the following aspects of sensor registration:

- Registration function description
- Automatic/manual application modes
- Sample size

- Adaptation of sensor pairs
- Analyzing registration reports

The syntax for the RTQC related commands can be found in paragraph 4.4.8 and Table 5-3 under the Conflict Alert function.

10.2.1 Registration Function Description

The registration function calculates biases based on data received from pairs of sensors. The operator may choose to correct for the biases (see automatic vs. manual application modes, below). For each sensor pair A and B, it calculates four values, as per the following table:

Symbol	Name	Description
$\Delta\theta_a$	Delta-theta-A .	Azimuth bias for sensor A
$\Delta\theta_b$	Delta-theta-B	Azimuth bias for sensor B
Δr_a	Delta-range-A	Range bias for sensor A
Δr_b	Delta-range-B	Range bias for sensor B

See Figure 1 O-l : Sensor Registration Geometry. If correction terms are applied, they are subtracted from the incoming range, azimuth for each target received from a sensor. In Figure 1 O-l, $\Delta\theta_a$ is negative; Δr_a, $\Delta\theta_b$, and Δr_b are positive. The calculated biases reflect the inherent bias in a sensor; i.e., the calculated terms do not depend on whether any manual corrections have been applied.

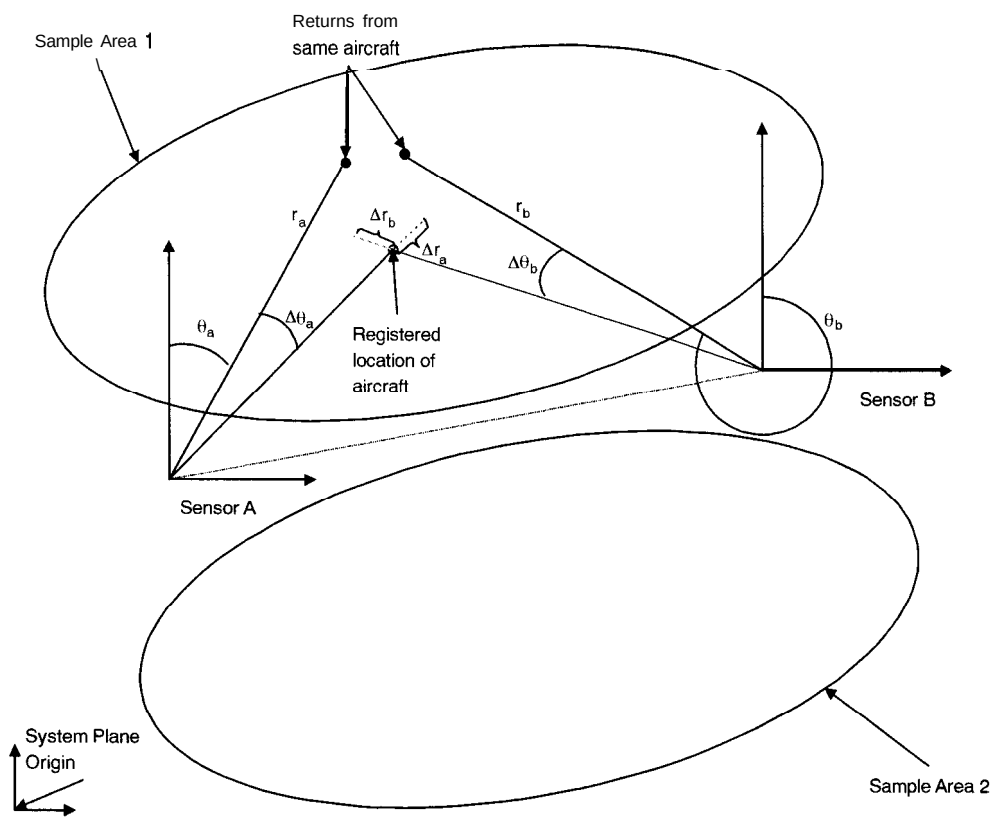

FIGURE 1 O-l. SENSOR REGISTRATION GEOMETRY

For each sensor pair, there are two sample areas defined. These are areas within which observations of the same aircraft from each of the two sensors are considered for registration. If the observations are outside the sample areas, they are not considered for registration. A ‘sample point” is defined as two observations of an aircraft (one from each sensor) on any given scan. A specified number of sample points is required for each sample area before a calculation can occur (see Sample Size section below).

10.2.2 Automatic/Manual Application Modes

Automatic or manual application of registration corrections may be adapted or selected by operator action. When in automatic mode, after a sample completes for a given sensor pair, the calculated biases for both sensors of the pair are automatically applied as corrections by the coordinate conversion function.

When in manual mode, an operator considers the calculated values and makes a judgment on the correction terms to apply. The judgment takes into account the stability of the calculated biases over time.

If a sensor has been in manual mode, and a command is entered to specify automatic application, then application of the (former) manual corrections ceases. The corrections calculated from the most recently completed sample will be immediately applied by the coordinate conversion function (until the next sample is complete, at which point new corrections may be calculated and subsequently applied).

Recommendation: adapt/set automatic mode. If the calculated biases appear unstable or too extreme, enter manual values. Whether in manual or automatic mode RTQC printouts should be reviewed at least once per day. If manual values are entered, values calculated by the ARTS should be monitored and assessed at least once every two hours during the first day, the frequency depending on variability thereafter, but not less than once per shift.

10.2.3 Sample Size

Sample size may be adapted or changed by operator action. Sample size is the number of qualifying track-pairs that must be processed by the registration function ***in*** each sample area before a calculation is done.

The smaller the sample size, the more frequently registration calculations are done. Smaller sample sizes will use more CPU time. A sample size that’s too large may delay the calculation for too long. A larger sample size should also produce smoother results; i.e. the sample points would include more diverse aircraft movements relative to the sensor pair.

Recommendation: adapt/set sample size so that calculations occur at least once per hour (during normal traffic) and no more often than once per minute. Use the **CA R** command at the SMC-PC at regular intervals to monitor the progress of the calculations for each sensor pair.

10.2.4 Adaptation of Sensor Pairs

Site adaptation specifies which sensor pairs are used by the registration function. Up to 15 (SP) pairs may be adapted. Sensor pairs that are too close or too far apart should not be adapted because the sample areas are too small, resulting in too few sample points to calculate a registration solution. It is valid to pair an ASR with an ARSR. It is valid to pair a given sensor with multiple other sensors.

Recommendation: adapt all sensor pairs that have at least 20 NM of overlap and are further than 9 NM apart.

10.2.5 Analyzing Registration Reports

See Appendix H.23 for the format of various registration printouts.

The RTQC Status Report is printed by operator request. When major changes have occurred (e.g., new adaptation affecting sensor locations, or a physical adjustment made to a sensor), this command should be entered at regular intervals (e.g., once per hour) and the results recorded. If the registration biases are within the alignment tolerances (see paragraph 10.1.3), no adjustment of the incoming data is needed. If the registration biases are not within tolerance, the sensor calibration should be questioned; refer to the appropriate sensor maintenance documentation.

If a given sensor is in multiple sensor pairs, and the calculated biases for that sensor are inconsistent when comparing all sensor pairs of which this sensor is a member, then it is possible that site adaptation is incorrectly specifying the sensor location. Ensure that the survey data for the sensor is correct and consistent with other sensors.

The RTQC Sample Complete Printout is printed automatically by the registration function when a sample is satisfied (but only if the values are sufficiently different from the previous printed values). Because this information is printed on a “sufficient change only” basis, regular printouts for a sensor pair would indicate a variability that may be due to incorrect sensor location adaptation (as above) or an incorrectly calibrated sensor. Recommendation: verify adaptation and/or sensor calibration.

If the RTQC Sample Time-out Printout occurs, it may indicate that the sample size for the sensor pair is too large. Recommendation: enter a lower sample size.

Appendix A
SMC-PC KEYBOARD ENTRIES

Function Name	Command(s)	Command Destination
Software Control		
Reinitialize All Displays	F2 ALL	CPS
Software Downloader	N/A	- -
Software Revision Level	N/A	--
System Reset	SM AL R	SMON
System Config		
Assume SMS	SM SMS	SMON
Flight Plan Termination	FT hhmmA where: hhmm is 4-digit time field	CPS
Processor Config	Reset All CPs: SM CP R Reset All TPs: SM TP R Reset All SMCs: SM SM R Reset All SPs: SM AL R Reset all AGWs: SM GW R (Note: All SPs is same cmd as System Reset) Set States of Individual Chassis: SM CP 0|1|2 A|S|O SM TP 0|1|2 A|S|O SM GW 0|1 0 SM SM A|S|O SM SP A|S|O Reconfigure CP from Backup: SM CP Set AGW Process State: FAST State: SM CT 0|1 A|S|O FMA State: SM FM 0|1 A|S|O Set Process State: SM GW 0|1 processname A|S|O	SMON

Function Name	Command(s)	Command Destination
RDM Automatic Switching	Enable Auto-Switching for RDBM Display: F2 BdE Disable Auto-Switching for RDBM Display: F2 BdEr Disable Auto-Switching for all RDBMs on an RDM: F2 BREr Enable Auto-Switching for all RDBMs Configured to RDM Pair: F2 BRErr where: d is a 2 or 3-digit disp number (1..MAX_NUMDQ) r is 2-hex-digit RDM NID number	CPS
Keyboard and Display Config	Enable/Inhibit Display: F2 DdE Ddl Enable/Inhibit Keyboard: F2 KkE F2 Kkl where: d is a 2 or 3-digit disp number (1..MAX_NUMDQ) k is 3-digit kbd number (1..MAX_NUMKQ)	CPS
Resectorization	Resectorize All Segments: FC n* Resectorize Single Fix: FC .cf Resectorize Single Segment: FC ns* where: n is 1 -digit config number (1 ..MAX_CFGQ) c is controller position subset and symbol (subset is l-digit number from 1..7, and symbol is 1 -char alphanumeric) f is 1 -character alpha fix id s is 1 -character segment letter	CPS

Function Name	Command(s)	Command Destination
RSM Config	Select/Inhibit Parrot	TPS
	Remote System Monitor (toggle): FR r Toggle RSM for Specified Sensor: FR rSs where: r is RSM number (1.. MAX-RSM) s is sensor number (1..MAX_SENSQ)	TPS
Site Adaptation	N/A	
SA Data Downloader	N/A	--
Sensor Config	Automatic Radar Inter-face Switching: Enable: F2 SsRA (if site has >1 sensor) inhibit: F2 SsRi (if site has >1 sensor) Enable: F2 SRA (if site has 1 sensor) Inhibit: F2 SRi (if site has 1 sensor) Sensor Masking: Enable/Disable Specified Segment for Specified Sensor: F2 SFs gE (if site > 1 sensor) F2 SFs gD (if site > 1 sensor) F2 SFgE (if site has 1 sensor) F2 SFgD (if site has 1 sensor) Enable/Disable All Segments for all Sensors: F2 SFE F2 SFD Enable/Disable All Segments for Specified Sensor: F2 SFsE F2 SFsD Enable/Disable Sensor Track for Specified Sensor: F2 STsE F2 STsD Overload Sensing and Protection Enable/Inhibit (toggle): F2 Ls (if site > 1 sensor) F2 L (if site has 1 sensor)	TPS

Function Name	Command(s)	Command Destination
	where: s is a 1-2 digit sensor number (0..MAX_SENSQ-1) i is the interface number (0.. MAX-SENSOR-PATHS-I) g is segment number (1.. MAX_SEG_MASKS)	
Sign On/Sign Off	Sign On: F5 i[/i or .i or *i]+c[hhmm] Sign Off (Close): F5 *c+c[hhmm] Request Summary Report: F5 P where: i is person's initials (2 alpha chars), c is controller position subset and symbol (subset is 1 -digit number from 1..7, and symbol is 1 -char alphanumeric) hhmm is start time in hours and minutes [. . .] represents optional field	SMON
System Settings	Modify Host Altimeter: FS n	TPS
	Modify Altimeter:	TPS
	Missing: FA r[ ]M Automatic: FA r[ ]A Manual: FA r[ ]nnnn Estimated: FA r[ ]nnnn[ ]E	
	System Time: FS + (to use WWVB time) FS hhmmss	SMON
	System Date: FS / (to use WWVB date) FS /mmddyy	SMON
	Host ATIS/GSI: FS a (enter atis) FS ag (enter atis & gsi) FS a* (enter atis, del gsi) FS *(delete atis) FS *g (del atis, enter gsi) FS (del atis & gsi)	CPS
	Unique GSI: FS s g (enter unique GI) FS s (delete unique GI)	CPS

Function Name	Command(s)	Command Destination
	where: n is altimeter setting (2700..3200 or 09151084 if SV millibar-alt = TRUE) r is 3-char alphanumeric altimeter region id a is alpha char (ATIS) g is up to 12 alphanumeric chars, including spaces (GI) hhmmss is time mmddyy is date s is unique GI number (1..9)	
Function Config		
Airspace Violator Alert Config	Enable Arrival AVA: F7 W *pppA E Inhibit Arrival AVA: F7 W *pppA I Enable Departure AVA: F7 W *pppD E Inhibit Departure AVA: F7 W *pppD i Enable Arrival and Departure AVA: F7 W *ppp E Inhibit Arrival and Departure AVA: F7 W *ppp I where: ppp is an airport symbol	CPS
Conflict Alert Config	Enable CA: CA AE Inhibit CA: CA Al Enable MCI: CA ME Inhibit MCI: CA Ml Enable Intersensor CA: CA LsE Inhibit Intersensor CA: CA Lsl Suppress Type I/II Conflict Alert: CA QnS Clear Type I/II Conflict Alert: CA QnC Master Clear: CA QZ where: s is sensor number (0- MAX_SENSQ) n is area number in format of type I number, space, type II number OR just type I number	CPS

Function Name	Command(s)	Command Destination
Recording Config	Enable PD PC Recording: SM PDR E Disable PD PC Recording: SM PDR D Initiate CDR: F1 IDd[SCR][O] Terminate CDR: F1 T Disk Availability: F1 ADdSs[SCR][O] Disk Unavailability: F1 UDdSs Enable Data Classes: F1 E [c] Disable Data Classes: F1 D [c] Enable Instrument Approach Count Message: F2 CaE Inhibit Instrument Approach Count Message: FA Cal where: d is disk number (O-l) s is SMC or SP number (0.. MAX-SMON-1) a is 1 -char airport id c is optional list of data classes, each of which is 2 alpha chars preceded by a space (if no classes enabled then std classes enabled; if no classes disabled then all dis)	SMON

Function Name	Command(s)	Command Destination
	TA = Tracking associated data TU = Tracking unassociated data MA = MSAW alarms CA = Conflict alert data KF = Keyboard functions AF = Auto functions IF = Inter-facility messages RB = Radar reinforced beacon tgt rep BT = Beacon target reports RT = Radar target reports *AT = Active track data *CT = CTS data *NC = Conflict alert non-conflict data GD = Ghost data file *BR = Beacon replies CO = ASCII status message FS = FAST Advisory Data WX = Weather Data (* denotes non-standard class) SCR field is optional scratch indication field 0 field is optional override specifier (which overrides the warning of scratching a disk that's less than 15 days old) (only meaningful when SCR option specified)	
CRDA Config	Enable/Disable CRDA Runway Pair Config: FN rm FN rD where: r is runway pair number (1.. MAX_CRCFGQ) m is mode of operation ('T' for Tie, 'S' for Stagger, or 'A for Adaptive Path Ghosting)	CPS

Function Name	Command(s)	Command Destination
Inter-facility Config	Toggle Inter-facility Enabled/Disabled Status: FC 0 [a] Enable Inter-facility and Term IF Flight Plans: FC 01 [a] Enable Radar Data Processing: FC 04 [a] Enable Flight Data Processing: FC 05 [a] Select/Inhibit Printout of IF Messages (toggle): IP m Enable AHOP: HD E [a] Inhibit AHOP: HD I [a] where: m is one or more 2-char message type (DA, DX, DR, DT, TR, TU, TA, TI, FP, AM, CX, RF, TL, TM, TN, TP, TS) a is ARTCC number (1 ..MAX_ARTCC) (not necessary if site has only 1 ARTCC)	CPS
ILS Monitor Config	ILS Monitor: Enable: F2 IE Inhibit: F2 II ILS Specified Monitor/Special Offset Region: Enable: F2 InE Inhibit: F2 InI where: n is region number (1.. MAX-ILSNUMQ)	CPS
MSAW Config	Enable MSAW: FV ME Inhibit MSAW: FV MI Enable Approach Monitor: FV GE Inhibit Approach Monitor: FV GI Enable MSAW GTM Region: FV TEn Inhibit MSAW GTM Region: FV TIn where: n is GTM region number (1..MAX_GTI)	CPS

Function Name	Command(s)	Command Destination
Performance Monitor Config	CTS Monitor: Enable: F3 A[hhmm][f] Toggle: F3 A	CPS
	Radar Beacon Target Report Monitor: Enable: F3 B[hhmm][f] Toggle: F3 B	TPS
	CP CPU Performance Monitor: Enable: F3 CC[hhmm][f] Toggle: F3 CC	CPS
	TP CPU Performance Monitor: Enable: F3 CT[hhmm][f] Toggle: F3 CT	TPS
	CP Coordinated Report: Toggle: F3 DC[hhmm][f]	CPS
	TP Coordinated Report: Toggle: F3 DT[hhmm][f]	TPS
	CP Summary Report: Toggle: F3 SC[A|C|F|U|L|P][hhmm]	CPS
	TP Summary Report: Toggle: F3 ST[C|L|P][hhmm]	TPS
	DP Performance Monitor: Enable: F3 D dmmmss Disable: F3 D	CPS
	BROPM: Enable: F3 E[mm][P] Disable: F3 EOO	TPS

Function Name	Command(s)	Command Destination
	where: d is a 2 or 3-digit disp number (1..MAX_NUMDQ) hhmm is output interval in hours and minutes mmm is output interval in minutes (01-223) mm is update interval in minutes (01-99) ss is collection interval in seconds (00-60 if mmm=01, 00-90 if mmm>01) f is either... 'M' - inhibit maximum function 'MP' - allow max proc with no data output 'M'x - print current report 'x' times prior to maximum CQARS Interval: F3 Qn - Set CQARS recording interval where: n is the interval in minutes (l-999).	
RTQC Config	Automatic RTQC Registrations: CA Rx Manual/Specified RTQC Registration Cor: CA RsRrAa Specify RTQC Registration Sample Size: CA Rs/s/n where: s is a 3-char sensor name x is a series of 3-char sensor names (optionally separated by spaces) or "ALL" r is range correction factor in floating point form, with up to 7 decimal digits, including an optional decimal point. Preceded by a '+' for pos or 'N' for neg. a is azimuth correction factor (same values as range, including sign indicator) n is registration analysis sample size (20. .999)	CPS

Function Name	Command(s)	Command Destination
System Function Config	Enable Specific Function: F2 fE Inhibit Specific Function: F2 fI where: f is... M = MSAW R = Memory Readout V = Supervisory Control T = Test Mode	TPS for Memory Readout CPS for all other System Functions
System Monitor Config	Activate Message Classes: SM AC n Inhibit Message Classes: SM IC n Switch PC Messages to HSP: SM H ... to PC Echo Printer: SM P where: n is one-character class identifier (R = Recording, A = Alarm, Q = RTQC, C = Configuration, S = Sensor, D = Debug, 0 = Operational)	SMON
TMS Config	Enable TMS: F2 AE Inhibit TMS: F2 AI Specify TMS Baud Rate: F2 ABb Specify TMS TZ Interval: F2 ATi where: b is baud rate (2400, 4800, 9600, 19200, or **38400)** i is interval (3-30)	CPS
ARTS Tools		
CDR Editor	N/A	--
CDR Time Selected Output	N/A	--
List Directory	N/A	--
Disk Utilities	N/A	--
File Dump	N/A	--
Lat/Long X/Y Calculator	N/A	--
Map Functions	N/A	--
Replay	N/A	--

Function Name	Command(s)	Command Destination
Retrack	N/A	
Sensor Coverage Analysis Program	N/A	
System Monitor	N/A	
Suicide Note Utility	N/A	
Desktop Toolbar	N/A	
Maintenance		
Maintenance Manager	N/A	
Diagnostic Test	N/A	
LAN Test	N/A	
Reports		
DP Status Report	N/A	
Function Status Report	N/A	
LAN Status Report	N/A	
MCI Inhibit Region Report	Display Enabled MCI Inhibit Regions: CA QMD	CPS
MSAW Inhibit Region Report	Display Enabled MSAW GTM Inhibit Region Report: FV TD	CPS
NID Assignment Report	N/A	
Recording Status Report	N/A	
RTQC Report	CA R	CPS
Sensor Config Status Report	N/A	
Subsystem Status Reports	Network: SM SS Nn 0 Monitor/Control: SM SS Nn 1 Interfacility: SM SS Nn 2 TMS: SM SS Nn 3 Radar: SM SS Nn 4 DASI: SM SS Nn 5 Serial Interface Adapter: SM SS Nn 6 CTIS Interface SM SS Nn 7 where: n is 2-hex-digit NID number	SMON
System Config Status Report	N/A	

Function Name	Command(s)	Command Destination
Other		
Display Sensor Switching	FX s s FX s * where: s is a 1 -char sensor name	CPS
Print File on HSP	SM HSP f where: f is a file in /d0/print directory of host SMC	SMON

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Appendix B

SMC-PC FUNCTION SYSTEM AND STATE TABLE

Program Group	Function	ARTS 2/3/A	SMC PC State Availability	User Interface Category
Software Control	System Reset	A	SMS	Simple Dialog
Software Control	Reinitialize All Displays	A	SMS	Simple Dialog
Software Control	Software Downloader	A	Standby/Off-line	Advanced App
Software Control	Software Revision Level	A	All except Host-Down	Report Based
System Config	Processor Config	A	SMS/Standby/ Off -line	Advanced Dialog
System Config	Sensor Config	A	SMS	Advanced Dialog
System Config	Keyboard and Display Config	A	SMS	Advanced Dialog
System Config	System Settings	A	SMS	Advanced Dialog
System Config	Flight Plan Termination	A	SMS	Advanced Dialog
System Config	Assume SMS	A	Non-SMS	Simple Dialog
System Config	Resectorization	A	SMS	Advanced Dialog
System Config	Site Adaptation	A	All	Advanced App
System Config	SA Data Downloader	A	Standby/Off -line	Advanced App
System Config	RSM Configuration	A	SMS	Advanced Dialog
System Config	RDM Automatic Switching	3	SMS	Advanced Dialog
System Config	Sign On/Sign Off	A	SMS	Advanced Dialog
System Config	Preference Set Config	A	SMS	Advanced App

Program Group	Function	ARTS 2/3/A	SMC PC State Availability	User Interface Category
Function Config	MSAW Config	A	SMS	Advanced Dialog
Function Config	Inter-facility Config	A	SMS	Advanced Dialog
Function Config	Conflict Alert Config	A	SMS	Advanced Dialog
Function Config	System Monitor Config	A	SMS	Advanced Dialog
Function Config	Performance Monitor Config	A	SMS	Advanced Dialog
Function Config	Recording Config	A	SMS	Advanced Dialog
Function Config	CRDA Config	A	SMS	Advanced Dialog
Function Config	RTQC Config	A	SMS	Advanced Dialog
Function Config	TMS Config	A	SMS	Advanced Dialog
Function Config	System Function Config	A	SMS	Advanced Dialog
Function Config	ILS Monitor Config	A	SMS	Advanced Dialog
ARTS Tools	CDR Editor	A	All	Advanced App
ARTS Tools	Map Functions	3	All	Advanced App
ARTS Tools	Replay	A	Off -line	Advanced App
ARTS Tools	Retrack	3	Off -line	Advanced App
ARTS Tools	CDR Time Selected output	A	All except Host-Down	Advanced App
ARTS Tools	Suicide Note Utility	A	All except Host-Down	Advanced App
ARTS Tools	System Monitor	A	All	Advanced App
ARTS Tools	Plot Tool	A	All	COTS
ARTS Tools	Lat/Long X/Y Calculator	A	All	Advanced Dialog
ARTS Tools	List Directory	A	All	Report Based

Program Group	Function	ARTS 2/3/A	SMC PC State Availability	User Interface Category
ARTS Tools	Sensor Coverage Analysis Program	3	Off -line	Advanced App
ARTS Tools	Disk Utilities	A	All except Host-Down	Advanced App
ARTS Tools	File Dump	A	All	Advanced App
ARTS Tools	Desktop Toolbar	A	All	Custom
Maintenance	Maintenance Manager	A	All	Advanced App
Maintenance	Diagnostic Test	A	Standby/Off -line	Advanced App
Maintenance	DNIP Device Tests	2	Standby/Off-line	Advanced App
Maintenance	LAN Test	A	SMS/Standby/ Off-line	Advanced App
Reports	System Config Status Report	A	All	Report Based
Reports	LAN Status	A	All	Report Based
Reports	NID Assignment Report	A	All	Simple Dialog
Reports	DP Status Report	A	All	Report Based
Reports	Function Status Report	A	All	Report Based
Reports	Sensor Config Status Report	A	All	Report Based
Reports	Subsystem Status Report	A	SMS	Advanced Dialog
Reports	Recording Status Report	A	All	Report Based
Reports	RTQC Report	A	SMS	Simple Dialog
Reports	MCI Inhibit Regions Report	A	SMS	Simple Dialog
Reports	MSAW Inhibit Regions Report	A	SMS	Simple Dialog
Main	File Manager	A	All	COTS
Accessories	Notepad	A	All	COTS
Administrative Tools	Backup	A	All	COTS

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Appendix C

SMC PC FUNCTION ORIGINS

TABLE C-I. SOFTWARE CONTROL GROUP FUNCTION ORIGINS

Function	Origin
System Reset	ARTS IIIE System Reset (SMC Control Entries), ARTS IIA ISP Reset
Reinitialize All Displays	ARTS IIIE Reinitialize All Displays (DP Supervisory Entries)
Software Downloader	ARTS IIIE SMC Downloader (Support Software menu)
Software Rev Level	ARTS IIIE MRNOTE/View Micro Software Versions (Support Software menu), and Case File TR410-AR3E-050

TABLE C-2. SYSTEM CONFIG GROUP FUNCTION ORIGINS

Function	Origin
Processor Config	Combination of ARTS IIIE CP Reconfiguration (SMC Control Entries menu) and Assume Active SMC (Standby menu)
Sensor Config	Combination of ARTS IIIE SRAP Auto Switching, Sensor/Segment Masking, and Radar Overload Sensing (Manual Reconfiguration menu off DP Supervisory menu)
Keyboard and Display Config	Combination of ARTS IIIE Enable/ Inhibit Display, Keyboards
System Settings	ARTS IIIE System Configuration (DP Supervisory Entries menu)
Flight Plan Termination	ARTS IIIE Terminate Track Files (Config/IF function in DP Supervisory) and Terminate Track Stores (DP Supervisory Entries menu)
Assume SMS	ARTS IIIE Assume SMS (Non-SMS menu)
Resectorization	ARTS IIIE Resectorize Fix Configuration and Partial Resectorization (Config/IF function in DP Supervisory Entries)
Site Adaptation	ARTS IIIE Site Adaptation & ARTS IIA Site Adaptation
SA Data Downloader	ARTS IIIE MCP Adaptation (SMC Utility Program)
RSM Config	ARTS IIIE RSM (Manual Reconfiguration menu)

TABLE C-2. SYSTEM CONFIG GROUP FUNCTION ORIGINS (Continued)

Function	Origin
RDM Auto Switching	ARTS IIIE RBP Automatic Switching (Manual Reconfiguration menu)
Sign On/Sign Off	ARTS IIIE Sign On/Sign Off (DP Supervisory Entries)

TABLE C-3. FUNCTION CONFIG GROUP FUNCTION ORIGINS

Function	Origin
MSAW Config	ARTS IIIE MSAW/Approach Monitor (DP Supervisory Entries) and Case File #CF-SCKAT-AR2A-015
Conflict Alert Config	ARTS IIIE Conflict Alert (DP Supervisory Entries menu)
Interfacility Config	ARTS IIIE Configuration/Interfacility and Inter-facility Print (DP Supervisory Entries), ARTS IIIE Enable/Inhibit AHOP (DP Supervisory Entries/Manual Reconfiguration)
System Monitor Config	Combination of ARTS IIIE Activate Message Classes, Inhibit Message Classes, and Switch PC Messages to XXX functions (SMC Control Entries menu)
Performance Monitor Config	ARTS IIIE Performance Monitor Control (DP Supervisory Entries)
Recording Config	ARTS IIIE CDR Control (DP Supervisory menu)
CRDA Config	ARTS IIIE CRDA Configuration (DP Supervisory Entries menu)
RTQC Config	Case File # CF-TR41 0-AR3E-058
TMS Config	Case File # CF-TR21 0-AR3E-005
ILS Config	ARTS IIIE ILS Monitor Function (DP Supervisory Entries/Manual Reconfiguration) and Case File # CF-SCAT-CPA-026
System Function Config	ARTS IIIE System Functions (DP Supervisory Entries/Manual Reconfiguration)

TABLE C-4. MAINTENANCE FUNCTION ORIGINS

Function	Origin
Maintenance Manager	ARTS IIIE SMC Printer Test, and ARTS IIIE SMC Disk Test, and FAA Maintenance Software, and ARTS IIA ISP Diagnostics
Diagnostic Test	ARTS IIIE SMC Maintenance Test
DNIP Device Tests	ARTS IIA ISP Diagnostics
LAN Test	ARTS IIIE LAND Test

TABLE C-5. ARTS TOOLS FUNCTION ORIGINS

Function	Origin
CDR Editor	ARTS IIIE CDR Editor (Support Software menu)/ARTS IIA ISP Data Reduction and Analysis (DRAA)
Map Functions	ARTS IIIE Utility Program Map Functions (Support Software menu)
Replay	ARTS IIIE Test Tool
Retrack	ARTS IIIE Retrack (Off-line Support Software menu)
CDR Time Selected output	ARTS IIIE CDR Time Selected Output (SMC Control Entries menu)
Suicide Note Utility	Part of ARTS IIIE MRNOTE (Support Software menu)
System Monitor	ARTS IIIE System Monitor/ARTS IIA ISP System Monitor and ARTS IIIE Manual Entry Mode (F2)
Plot Tool	ARTS IIA SA Plot Tool
Lat/Long X/Y Calculator	ARTS IIA and ARTS IIIE SA Tool
List Directory	ARTS IIIE SMC Utility Program/List Directory (Support Software menu) ARTS IIA ISP APCA/List Directory
Disk Utilities	ARTS IIIE SMC Utility Program/Copy, Format, Mount, Unmount, Disk Block Dump (Support Software menu) ARTS IIA ISP APCA/EP Terminal Emulator Window
File Dump	ARTS IIIE SMC Utility Program/Print Disk File (Support Software menu)
Desktop Toolbar	ARTS IIA ISP Desktop
Sensor Coverage Analysis Program	Case File #CF-UA320-AR3E-005

TABLE C-6. REPORTS FUNCTION ORIGINS

Function	Origin
System Config Status Report	ARTS IIIE System Status Report (F6) minus LAN table plus TP/CP Peripheral Status (F9)
Display Processing Status Report	ARTS IIIE Display Status Report (F7)
Function Status Report	ARTS IIIE Function Status Report (F8) minus CDR info
Sensor Config Status Report	ARTS IIIE Config Status Report/Peripheral Hardware Status Report (F9) minus CP/TP Peripheral Status info, plus Sensor Gateway status information
LAN Status Report	ARTS IIIE System Status Report (F6) LAN information
Subsystem Status Reports	Combination of Inter-facility, Monitor/Control, Network, Radar, Serial Interface Adapter, DASI, TMS, and CTAS Interface Subsystem Status Reports (from SMC Control Entries menu)
Recording Status Report	ARTS IIIE Display CDR Disk Status (SMC Control Entries menu) plus CDR info from F9
RTQC Report	ARTS IIIE Conflict Alert/RTQC (DP Supervisory menu)
NID Assignment Ranges	ARTS IIIE NID Assignment Ranges (F4)
MCI Inhibit Region Report	Case File #CF-TR21 0-AR3E-004
MSAW Inhibit Region Report	Case File #CF-SCKAT-AR2A-015

Appendix D

ARTS IIA ISP TO A6.05/A2.09 USER INTERFACE CROSS-REFERENCE

ARTS IIA ISP Functions	ARTS A6.05/A2.09 Icons	Desktop Group
System Monitor	System Monitor	ARTS Tools
APC Administration		
File and Directory Management on Local and Remote disk drives (Copy, Move/Rename, Delete, List Dir, Create Dir, Remove Dir, and specialized data file mgmt)	COTS File Manager	Main
Archive to Tape	COTS Backup	Administrative Tools
Boot OPS	System Reset	Software Control
Boot Diags	not applicable	----------
Boot Other	procedural (using Software Downloader)	System Config
Send Serial Diags	not applicable - LSI only	----------
Reset	System Reset	Software Control
Send Patch	not applicable - LSI only	
Capture Data	functionality exists within each Maintenance icon	Maintenance
Set Default Operational Program Versions	Software Downloader	Software Control
Get Default Operational Program Versions	Software Rev Level	Software Control
LSI Terminal Emulator Operations:		
- Online System Changer (Memory Inspection & Modification)	not applicable	----------
- System Performance Printout	Performance Monitor Control	Function Control
- Site Adaptation Parameter Entry	Site Adaptation, SA Data Downloader	System Config
Data Reduction and Analysis	CDR Editor	ARTS Tools
Training Scenario Generator	(deleted)	----------
Bulk Flight Plan Editor	(deleted)	———

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Appendix E

A6.04 TO A6.05/A2.09 USER INTERFACE CROSS-REFERENCE

A6.04 ARTS IIIE Menu Entries	ARTS A6.05/A2.09 Icons	Desktop Group
Executive Entries (TP)	(deleted)	----------
DP Supervisory Entries		
Conflict Alert	Conflict Alert Config RTQC Report	Function Config Reports
Configuration/Interfacility	Interfacility Config Flight Plan Termination Resectorization	Function Config System Config System Config
System Config	System Settings	System Config
Terminate Stored Tracks	Flight Plan Termination	System Config
MSAW/Approach Monitor	MSAW Config	Function Config
CDR Control	Recording Config	Function Config
Manual Reconfig		
- PC/HSP Printouts	System Monitor Message Classes	Function Config
- System Functions	System Function Config	Function Config
- RBP Automatic Switching	RDM Automatic Switching	System Config
- Enable/inhibit Display	Keyboard & Display Config	System Config
- ILS Monitor Function	ILS Config	Function Config
- Keyboards	Keyboard & Display Config	Function Config
- SRAP Automatic Switching	Sensor Config	System Config
- Sensor/Segment Masking	Sensor Config	System Config
- Radar Overload Sensing	Sensor Config	System Config
- Enable/Inhibit RSM	RSM Config	System Config
- Enable/Inhibit AHOP	Interfacility Config	Function Config
Performance Monitor Control	Performance Monitor Config	Function Config
Inter-facility Print	Interfacility Config	Function Config
CRDA Config	CRDA Config	Function Config
Sign On/Sign Off	Sign On/Sign Off	Software Control

A6.04 ARTS IIIE Menu Entries	ARTS A6.05/A2.09 Icons	Desktop Group
Reinitialize All Displays	Reinitialize All Displays	Software Control
SMC Control Entries		
SMC Message Data Classes	System Monitor Config	Function Config
Display CDR Disk Status	CDR Status Report	Reports
Switch PC Messages to XXX	System Monitor Config	Function Config
System Reset	System Reset	Software Control
FDP/RBP Subsystem Status Report	Subsystem Status Reports	Reports
LBP Subsystem Status Report	Subsystem Status Reports	Reports
NIA Subsystem Status Report	Subsystem Status Reports	Reports
CP Subsystem Status Report	Subsystem Status Reports	Reports
SMC Subsystem Status Report	Subsystem Status Reports	Reports
Reconfigure CP from Backup	(deleted)	----------
CDR Time Selected Output	CDR Time Selected Output	ARTS Tools
CP Reconfig	Processor Config	System Config
Status Reports (available from Function Keys) NID Assignment Ranges (F4)	NID Assignment Ranges	Reports
System Status (F6)	System Config Status Report and LAN Status Report	Reports Reports
Display Status (F7)	DP Status Report	Reports
System Config Status (F8)	Function Status Report	Reports
Peripheral Hardware Status (F9)	Sensor Config Status Report and System Config Status Report	Reports Reports
Support Programs		
SMC Utilities		
- Copy Disk File	COTS File Manager	Main
- Rename Disk File	COTS File Manager	Main
- Delete Disk File	COTS File Manager	Main
- List/Print Disk File	File Dump	ARTS Tools
- Make Disk Directory	COTS File Manager	Main
- Change Disk Directory	COTS File Manager	Main
- Delete Disk Directory	COTS File Manager	Main

A6.04 ARTS IIIE Menu Entries	ARTS A6.05/A2.09 Icons	Desktop Group
- List Disk Directory	List Directory	ARTS Tools
- Copy Device	Disk Utilities	ARTS Tools
- Initialize Disk	Disk Utilities	ARTS Tools
- Map Functions	Map Functions	ARTS Tools
- List/Print Disk Block	Disk Utilities	ARTS Tools
- MCP Adaptation	SA Data Downloader	System Config
CDR Edit	CDR Editor	ARTS Tools
SMC Downloader	Software Downloader	Software Control
Memory Readout & Suicide Note (MRNote)	Software Rev Level	Software Control
Retrack	Retrack	ARTS Tools
Maintenance Programs		
SMC Maintenance Test	Diagnostic Test	Maint
SMC Printer Test	Maintenance Manager	Maint
SMC Disk Test	Maintenance Manager	Maint
Maintenance Software Downloader	(deleted)	
Other		
Assume Active SMC	Processor Config	System Config
Manual Entry Mode	Svstem Monitor	ARTS Tools

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Appendix F

SMC-PC PARAMETERS

The list of parameters below can be modified by the SMC-PC user via the Windows NT Registry Editor.

Parameter Name	Description
PD-PC Directory Path	The destination directory path on the PD-PC (ARTS IIIE) or SMC-PC Hard Disk (ARTS IIE) for recording of PD-PC data.
System Monitor Message Limit	The number of bytes of System Monitor messages that need to be accumulated in a print buffer before the buffer is spooled to the Echo Printer. A value of 1 for this parameter results in every System Monitor message being sent to the printer
System Monitor History File Path	Directory path where the System Monitor history files are stored.
System Monitor Rollover Time	Time of day (according to PC System Time) when the current System Monitor history file is closed and a new one opened. The time field is specified in 24-hour clock 'hhmm' format.
System Monitor Printing Frequency	Time interval for printing System Monitor messages in units of milliseconds (for example, print every 300,000 milliseconds or 5 minutes).

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Appendix G

RECORDING PRINTOUTS

An Alphanumeric Keyboard Recording message is printed when an action is taken at an alphanumeric keyboard which results in a major system change. The keyboard action is processed by the Keyboard function, which then requests the printout. The message includes the type of change, the originator subset and keyboard identifier, and the new value. NAS-MD-638 describes the alphanumeric keyboard actions which result in these messages.

Recording printouts echo a display keyboard entry (all supervisory and some non-supervisory entries) or an SMMMC entry. Each printout is prefixed with:

(date)(time) (NID #)

where: date = Date of entry in month, day, year
time = time of entry in hours, minutes, seconds
NID # = Network Identifier (two hexadecimal characters).

Format	Description
AHOP sk SYSTEM ENB/INH artcc	AHOP is enabled/disabled for the system or for a specified ARTCC interface (F5,E/I).
AHOP sk SYSTEM INH artcc	AHOP disabled for specified ARTCC interface (SMS: F7,C,0 & F7,C,05).
AHOP sk CN ENB/INH	AHOP is enabled/disabled for tracks controlled by the entering position (F5,C,E/I).
AHOP sk TK INH acid	AHOP is inhibited for the specified track (F5).
ALTM sk rrr dddd [status]	The altimeter setting has been changed to this new value or the unique altimeter setting has been modified rrr = altimeter region ID, dddd = new altimeter value, status = MISSING/DASI/ ESTIMATED (status not applicable in systems with a single altimeter region and no DASI).
APMN sk SEL/INH	The approach monitor portion of the MSAW program has been selected or inhibited (F7,V,G).
BROPM ENABLE T = mm P sk	Beacon/Radar On-Line Performance Monitor (BROPM) is enabled. mm = update interval in minutes P = printout requested (optional). (F7,3,E).

Format	Description
BROPM INHIBIT sk	BROPM is inhibited (F7,3,E,00).
CA sk CA ENB/INH	CA has been enabled/inhibited by controller sk (F11,A,E/I).
CA sk CN ENB/INH	CA has been enabled/inhibited for controller sk (F11,C).
CA sk ZONE SUPPRESSION DISABLED	All Type I and II areas are enabled for CA processing (F11 ,Q,Z).
CA sk MC ENB/INH	Mode C Intruder (MCI) CA processing is enabled/inhibited (F11 ,M).
CA sk MCI ZONE SUPPRESSION DISABLED	All MCI inhibit regions are disabled for the entering controller. MCI processing is no longer suppressed in previously enabled regions (F11 ,Q,M,Z).
CA sk MCI ZONE SUPPRESSION SET/CLR region no.	Specified region number has been suppressed/enabled for MCI display for the entering controller (F11 ,Q,M).
CA sk PR ENB/INH acid acid	The specified track pair has been enabled/inhibited from CA display (F11 ,P).
CA sk TK ENB/INH acid	The specified track has been enabled/inhibited from CA display (F11 ,K).
CA sk ZONE SUPPRESSION SET/CLR (Type 1 no.) (Type 2 no.)	Type 1 (and Type 2) areas have been suppressed/enabled for CA display (F11 ,Q).
CA sk IS ENB/INH ss	CA intersensor alerts are enabled/inhibited for identified sensor ss (F11 ,L).
CFG ALL config num sk	Resector all sectors to configuration <config num> was performed (F7,c,d,*).
CKEY sk ID(d)SCR/SCRO	CDR extraction has been initiated on disk d (O-l). SCR/SCRO = scratch status/override for disk i (optional)(F7,1 ,I,D).
CKEY sk T	Termination of the CDR extractor has been requested.
CKEY sk AD(d) S (n) SCR/SCRO	Disk d (O-l) on SMC n (O-2) or SP n (O-l) available for CDR. SCR = scratch status, SCRO = scratch override (optional) (F7,1 ,A,D).
CKEY sk UD(d) S(n)	Disk d (O-l) on SMC n (O-2) or SP n (O-l) is unavailable for CDR (F7,1 ,U,D).

Format	Description
CKEY sk E dc, dc,..., dc	CDR extraction is enabled for data classes dc. If no classes are specified, standard classes are enabled (F7,1 ,E).
CKEY sk D dc, dc,..., dc	CDR extraction is disabled for data classes dc. If no classes are specified, all classes are disabled (F7,1,D).
CPKEY sk FA	CP CTS extraction: all altitude filters are cleared (F7,4,FA).
CPKEY sk FA Snn	CP CTS extraction altitude filter disabled for sensor number nn (F7,4,FA,S).
CPKEY sk FA aaa Snn	CP CTS extraction inhibited for aircraft above altitude aaa (100's ft.) for sensor number nn (F7,4,FA).
CPKEY sk FB	CP CTS extraction: all beacon filters are disabled (F7,4,FB).
CPKEY sk FB Snn	CP CTS extraction beacon filter disabled for sensor number nn (F7,4,FB,S).
CPKEY sk FB bbbb E/I Snn	CP CTS extraction filter enabled/inhibited for aircraft with beacon code bbbb for sensor number nn (F7,4,FB,S).
CPKEY sk FE S E/I	CP CTS extraction enabled/inhibited for Target Generator tracks (F7,4,FE).
CPKEY sk FR Snn	CP CTS extraction range/azimuth filter disabled for sensor nn (F7,4,FR,S).
CPKEY sk FR rr Snn	CP CTS extraction for a single-range rr (NM) filter has been established for sensor number nn (F7,4,FR).
CPKEY sk FR (2 or 3 range values)/ (2 or 3 azimuth values) Snn	CP CTS extraction for a two- or three-value range/azimuth filter has been established for sensor number nn (F7,4,FR).
CPKEY sk FS nnE/I	CP CTS extraction filter enabled/inhibited for sensor number nn (F7,4,FS).
CONS sk xE = yA	The controller position A has been consolidated with position E, where x and y are subsets to which E and A belong, respectively (F7,C).

Format	Description
CP/TP COR ENABLE/INHIBIT T = hh:mm M = xy sk	Coordinated performance monitor report of CP/TP is enabled/inhibited. hh:mm = output interval time M = maximum processing x = I (inhibited) or E (enabled) y = interval prior to maximum at which printing occurs, or P (print) (F7,3,D,C/T).
CP/TP SUM ENABLE/INHIBIT T = hh:mm s = sk	Summary performance report of the CP/TP is enabled/inhibited. hh:mm = output interval time s = synchronization parameter where: CP parameters are C (CTS), F (FDF), U (unassociated), A (associated), L (CPU), P (print). TP parameters are C (ATF), L (lattice), P (print). SP parameters are C (CTS), F (FDF), U (unassociated), A (associated), L (CPU), T (ATF), P (print) (F7,3,S,C/T).
CP/TP CPU ENABLE/INHIBIT T = hh:mm M=xy sk	Performance monitor of CP/TP CPU is enabled/inhibited. hh:mm = output interval time M = maximum processing x = I (inhibited) or E (enabled) y = interval prior to maximum at which printing occurs, or P (print) (F7,3,C,C/T).
CRDA sk SEL/INH xxxx/xxxx T/S/A	CRDA selected/inhibited for specified runway pair, where: xxxx/xxxx = adapted runway pair e.g., 13L/17R T = TIE function S = STAGGER function A = APG function (F7, N).
CRDA sk CDRA **FUNCTION DISABLED**	CRDA function is disabled because CENRAP was enabled (F7,2,C,P,E).
CP CTS ENABLE/INHIBIT T = hh:mm M = xy sk	Performance monitor of CTS is enabled/inhibited. hh:mm = output interval time M = maximum processing x = I (inhibited) or E (enabled) y = interval prior to maximum at which printing occurs, or P (print) (F7,3,A).

Format	Description
CP COR ENABLE/INHIBIT T = hh:mmM = xy sk	Performance monitor of CP coordinate report is enabled/inhibited. hh:mm = output interval time. M = maximum processing. x = I (inhibited) or E (enabled). y = interval prior to maximum at which printing occurs, or P (print) (F7,3,DC).
CP CPU ENABLE/INHIBIT T = hh:mmM = xy sk	Performance monitor of CPU is enabled/inhibited. hh:mm = output interval time. M = maximum processing. x = I (inhibited) or E (enabled). y = interval prior to maximum at which printing occurs, or P (print) (F7,3,CC).
CQARS sk COLLECTION TIME INTERVAL = mmm	Set CQARS recording interval mmm = update interval in minutes. (F7, 3, Q).
DATE sk [mmddyy]	The internal date has been changed to this new value mmddyy: mm = month, dd = day, yy = year.
DATE sk SYSTEM	WWVB is now being used as the internal data source.
DCON sk xb	Controller position b has been deconsolidated, where x is subset to which b belongs (F7,C).
DMAP sk DOWNLOAD MAP SET SNsssMSnn to EEPROM	Request to download map set number nn for sensor sss (3 char. ID) to EEPROM (F8,M,S).
DMAP sk DOWNLOAD MAP SET sssnn to RAM	Request to download map set number nn for sensor sss (3 char. ID) to RAM (F8,M,K).
ENABLED MSAW GTM INHIBIT REGIONS nn . . nn/NONE	List of enabled MSAW GTM inhibit regions. nn = region number (F7,V,T,D).
FCON sk xE=yATKM_ALTIMETER	The controller position A has full consolidation with position E, where x and y are subsets to which E and A belong, respectively (F7,C...+).
FLUS sk hhmm	Track files for all control positions in store status with ETA/PTD earlier than time entered (hhmm) are terminated (F7,T,time,A).
GLOBAL SO AREA n..n	List of enabled global Special Offset Areas. n = adapted Special Offset Single Character ID.
GSI sk U data	Data to the Host General System Information Area (ATIS or GI) has been initiated, modified, or deleted, or the unique GI has been initiated/modified/deleted (F7,S).

Format	Description
HOLD AREA A/B/C/D ON sk	Automatic acquisition of arrivals, over the altitude associated with the specified area, has been inhibited within Hold (arrival fix) area A, B, C, or D (F7,A).
HOLD AREA A/B/C/D OFF sk	Automatic acquisition of all arrivals is enabled within Hold (arrival fix) area A, B, C, or D. The altitude associated with the specified area is restored to AFALTiaQ (F7,A).
HOLD AREA A/B/C/D altitude sk	The altitude at or below which automatic acquisition will occur within Hold (arrival fix) area A, B, C, or D has been changed to the altitude specified (F7,A).
IF sk FDP artcc	The inter-facility capability has been changed to FDP (Flight Data Processing) (F7,C,05).
IF sk INH artcc	The specified inter-facility message type mt has been selected/inhibited for printout on the SMS (SMS: F7,C,0).
IF sk RDP artcc	The interfacility capability has been changed to RDP (Radar Data Processing) (F7,C,04).
IF sk (SEL/INH) mt	The specified inter-facility message type mt has been selected/inhibited for printout on the SMC (F1 0).
IF sk SEL1 artcc	Inter-facility enable with track files with flight plan/store status in CTS that were originated by ARTCC are cleared from the system immediately (F7,C,01).
IF TEST PROGRAM INHIBIT/SELECT ccc	Inter-facility test program inhibited/ selected. ccc = ARTCC id (F14,f,0).
KYBD ENABLED MCI INHIBIT REGIONS sk reg#	List of all keyboards with MCI inhibit regions (F11 ,Q,M,D).
LCON sk xE=yA	Controller position A has been partially consolidated with position E, where x and y are subsets to which E and A belong, respectively (F7,C.../).
LDDT ENABLED sk DISPLAY ddd	Limited Display Diagnostics Test is enabled for display ddd (F7,2,LDDT).
MSAW sk SEL/INH	MSAW has been enabled/inhibited as result of enable/inhibit CENRAP (F7,2,C).
MSAW sk SEL/INH	MSAW has been enabled/inhibited (F7,V,M).

Format	Description
MSAWD sk INHIBIT acid	Display of "LOW ALT" warning and aural alarm is inhibited for specified ACID. Includes MSAW inhibit resulting from initiation of a VFR FP (F7,Q,slew). This printout does not occur for training tracks (F9,acid).
MSAW sk GTM REG nn SEL/INH	General Terrain Monitoring is enabled/disabled for region nn (F7,V,T).
MSAWT sk SELECT/INHIBIT acid	MSAW Processing has been enabled or inhibited for aircraft with specified ACID. This printout does not occur for tracks on inhibit beacon code segments (F7,V,slew).
PARTIAL CFG fix id TO controller sk	Control of pending and future arrival flights arriving over the fix(es) designated by fix id are reassigned to the entered controller. The entry was made by sk (F7,C).
POS xx NOT/IS SUP	A position's supervisor status has been changed (F7,P).
RTR ENABLE/INHIBIT T = hh:mm M = xy sk	Coordinated performance monitor of radar/beacon target reports is enabled/inhibited. hh:mm = output interval time M = maximum processing x = I (inhibited) or E (enabled) y = interval prior to maximum at which printing occurs, or P (print) (F7,3,D,C/T).
RSM (rr) (ss) sk SEL/INH	The Parrot Remote System Monitor (RSM) r (r=1-RSMNUMQ (SV)) has been selected/inhibited.
STAT sk xb=C STAT sk (xX = C) STAT sk (xX = M)	The status of keyboard xb has been changed to controller (F7,C,sk,*,C).
STAT sk xb=M STAT sk (xX = M)	The status of keyboard xb has been changed to maintenance (F7,C,sk,*,M).
STAT sk xX=PyB STAT sk (xX = C) STAT sk (xX = M)	The status of keyboard xX has been changed to paired (e.g., the keyboard with identifier xX has been paired with keyboard B, where x and y are subsets to which X and B belong, respectively (F7,C,sk,*,P).
SWABS ss dd	All displays dd have been switched to sensor ss by an RSSS switch selection. Overload sensing and protection and test target functions have been terminated on display dd (F7,,X).

Format	Description
STAT sk sb=SET	The status of keyboard sb has been changed to supervisory (F7,P).
STAT sk sb=CLR	The status of keyboard sb has been changed to nonsupervisory (F7,P).
STAT sk dd=TNG	The status of display dd and associated keyboards has been changed to training, and is completely disassociated from the operational environment (F15,X,M).
STAT sk dd=ACT	The status of display dd and associated keyboards has been changed to operational status (F15,Z,M).
TIME sk [hhmmss]	The internal time of day (GMT) has been changed to this new value, hhmmss. hh = hours, mm = minutes, ss = seconds.
TIME sk SYSTEM	WWVB is now being used as the internal time source.
DP PM ENABLED DSP=ddd UF=mmm CI=ss sk	Performance monitor for display ddd is enabled at an update frequency of (mmm) minutes and a collection interval of (ss) seconds from controller position sk (F7,3,D).
DP PM DISABLED DSP=ddd sk	Performance monitor for display ddd has been disabled from controller position sk (F7,3,D).
xxx MEM CHG REQ: ADDRESS=aaaaaaaa CONTENTS=cccccccc	The content of the indicated address has been replaced with this new value for the indicated chassis.
Note: 'RCFG' is used for all manual reconfiguration functions.	
RCFG (sk) (xxx) IAP (ON/OFF)	Enable/inhibit automated Traffic Count for airport identifier xxx.
RCFG MSAW CNTR INH	MSAW control inhibit.
RCFG sk CENRAP ENABLED/INHIBITED	Center Radar ARTS Presentation (CENRAP) is enabled/disabled (F7,2,C).
RCFG sk CENRAP TP ENABLED/INHIBITED	Processing of Transfer Primary Radar Target (TP) messages is enabled/inhibited during CENRAP operation (F7,2,TP).
RCFG sk ALRM PRNT SEL/INH	Enable/inhibit Alarm SMC printouts.
RCFG sk CONF PRNT SEL/INH	Enable/inhibit Configuration SMC printouts.
RCFG sk DBUG PRNT SEL/INH	Enable/inhibit Debug SMC printouts (F7,2,D,E/I).

Format	Description
RCFG sk DISPLY dd SEL/INH	Display dd enabled/inhibited.
RCFG sk ENABLE/INHIBIT ILS MONITOR region# regionname	ILS Monitor region is enabled/inhibited (F7,2,I).
RCFG sk ENABLE/INHIBIT SPEC OFFSET region# regionnamev	A Special Offset region is enabled/inhibited (F7,2,I).
RCFG sk KEYBRD kkk SEL/INH	Keyboard kkk is enabled/inhibited (F7,2,K).
RCFG sk MSAW CNTR SEL/INH	MSAW control selected/inhibited (F7,2,M,E/I).
RCFG sk MSAW PRNT SEL/INH	MSAW Print selected/inhibited.
RCFG sk OPER PRNT SEL/INH	Enable/inhibit Operational SMC printouts (F7,2,O,E/I).
RCFG sk OVRLD SEN nn SEL/INH	Enable/inhibit overload sensing and protection (F7,2,L,E/I).
RCFG sk RCRD PRNT SEL/INH	Enable/inhibit Recording SMC printouts.
RCFG sk RDBM AUTO SWITCHING ENABLED/DISABLED DISPLAY ddd ACTIVE RDM=nn	Enable automatic switching of the RDBM with display number dd (F7,2,B).
RCFG sk RTQC PRNT SEL/INH	Enable/inhibit RTQC printouts (F7,2,Q,E/I).
RCFG sk SELECTED PATH (r,r) SEN(n)	Enable/inhibit automatic switching of paths on sensor number n.
RCFG sk SENS PRNT SEL/INH	Sensor printouts selected/inhibited (F7,2,S,E/I).
RCFG sk SUPR CNTR SEL/INH	Supervisory Control Function selected/inhibited (F7,2,V,E/I).
RCFG sk TEST MODE SEL/INH	Test Mode Function selected/inhibited (F7,2,T,E/I).
RCFG sk TRACKING SEL/INH SEN (n)	Enable/inhibit sensor track for sensor number n (F7, 2, S, T).
RCFG sk VMEM RDRT SEL/INH	Enable/inhibit VME memory readouts (F7,2,R,E/I).
RDBM xxx RESTART CONTROLLER REQUESTED	Restart RDBM requested.
xxx RGW MODE DESELECTED	Operator at display xxx has deselected RGW mode of operation.
xxx RGW MODE SELECTED	Operator at display xxx has selected RGW mode of operation.
xxx RGW MODE: NON-RGW SENSOR jjj SELECTED	Operator selected sensor jjj at RGW mode display xxx but sensor is not adapted for RGW.

Format	Description
xxx RGW MODE: RGW SENSOR jjj SELECTED	Operator selected sensor jjj at RGW mode display xxx and sensor is adapted for RGW.
RTQC Sensor yyy, Manual Mode. R = x.xxx; A = xx.xx	Put Sensor yyy in Manual Mode with range correction = R, azimuth correction = A.
RTQC Sensor yyy, Automatic Mode	Put Sensor yyy in Automatic Mode.
RTQC All Sensors Automatic Mode	Put all sensors in the Automatic Mode.
RTQC Sensor Pair yyy, zzz Sample Size = xxx	Change RTQC sample size for sensor pair yyy,zzz to xxx.
xxx MEM CHG REQ: NID=nn TGT= aaaaaaaaaaaaaaa PID=nn	The content of the indicated address has been replaced with this new value for the indicated chassis.
xxx RCFG sk TEST TRGT INH [sss]	Inhibit test targets. sss = sensor name
xxx RCFG sk TEST TRGT SEL [sss]	Enable test targets. sss = sensor name

LEGEND:

dd = Display number
xxx = Three digit display number
s = Keyboard subset number or “P” if entered at PC
k = Identifier of keyboard that initiated the action or PC ID if entered at PC
u = identifier of unique altimeter setting or unique GI data
r = SRAP number(s) of which action was taken
i = Configuration Sector ID

Format	Description

Inter-facility message type (mt):

DA	=	Data acknowledgement
DX	=	Data retransmit
DR	=	Data reject
DT	=	Test Response
TR	=	Test
TU	=	Track Update
TA	=	Track Accept
TI	=	Track Initiate
TL	=	Transfer Recall
TM	=	Initiate Transfer
TN	=	Accept Transfer
RF	=	Request Flight plan
FP	=	Flight Plan
AM	=	Flight plan modify
cx	=	Flight plan cancellation
TP	=	Transfer Primary Radar Target (radar only)
TS	=	Transfer Secondary Radar Target (beacon only)
TZ	=	Track/FDB Information

dc = CDR Extraction data classes:

TA	=	Associated Tracks
TU	=	Unassociated Tracks
BT	=	Beacon Target Reports
RB	=	Radar Reinforced Beacon Target Reports
RT	=	Radar Target Reports
AF	=	Auto Functions
KF	=	Keyboard Functions
IF	=	Interfacility Messages
MA	=	MSAW Alarms and Display
TP	=	TP Active Track Data
CA	=	Conflict Alert
NC	=	No Conflict Alert
GD	=	Ghost Data File
CP	=	CP CTS Data
BR	=	Beacon Reply Data
co	=	ASCII Status Messages
AT	=	ATMIS data
FS	=	FAST Advisory Data
wx	=	Weather Data

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Appendix H

INTERNAL FAILURE, ALARM, AND INFORMATIVE PRINTOUTS

A detection of an error by one of the functions in the operational program causes an internal failure, alarm or informative message to be requested. The following paragraphs show the formats and describe these messages.

H.I SENSOR INPUT

Format	Description
BEACON RSM (r) FAIL (A/B/C/D) (I) (ss)	Loss or out of tolerance condition on. Beacon parrot RSM r. r = 1 — MAX-RSM (SP). A = LOSS OF RETURNS B = RANGE OUT OF TOLERANCE C = AZIMUTH OUT OF TOLERANCE D = ALTITUDE INCORRECT I = Interface (Active Path)
BEACON TEST TARGET oooo OUT OF TOLERANCE: sss RNG rr.rr, AZM m ALT t VA a VC c	The received beacon test target did not match the adapted beacon test target, where oooo is the received beacon code, sss is the adapted 3 character identifier for the sensor, rr.rr is the reported range in nautical miles, m is the reported azimuth in ACPs (up to four digits), t is the reported altitude in hundreds of feet, a is the reported mode-3a validity, and c is the reported mode-c validity.
CENRAP NORTH MARK c OUT OF TOLERANCE: s RNG f	The range of the North Mark is out of tolerance s = sensor name, c = beacon code, f = range.
DADCP'S NID IS NOT IN THE SITE DATA	The NID for DADCP is not contained in the site data.
RADAR RSM (r) FAIL A (I) (ss)	Loss of Radar Parrot RSM r. A = LOSS OF RETURNS I = Interface (Active Path)
RADAR TEST TARGET OUT OF TOLERANCE: sss RNG rr.rr, AZM m	The received beacon test target did not match the adapted beacon test target, where sss is the adapted 3 character identifier for the sensor, rr.rr is the reported range in nautical miles, and m is the reported azimuth in ACPs (up to four digits).

Format	Description
Sensor d: Missing Beacon Test Target	A beacon test target for sensor number d has not been received for this scan.
Sensor d: Missing Radar Test Target	A radar test target for sensor number d has not been received for this scan.
Sensor d: Excessive Beacon Test Targets	Too many beacon test targets for sensor number d have been received for this scan.
Sensor d: Excessive Radar Test Targets	Too many radar test targets for sensor number d have been received for this scan.
SENSOR (ss) DADCP: BEACON REAL TIME QUALITY CONTROL FAULT	The DADCP status word has indicated a Beacon Real Time Quality Control fault has occurred.
SENSOR (ss) DADCP: cc ADC ERRORS	Decoding Data Acquisition Subsystem (DDAS) Azimuth Data Converter (ADC) errors have occurred, where: cc = error count.
SENSOR (ss) DADCP: cc AZIMUTH ERRORS	DDAS azimuth errors have occurred, where: cc = error count.
SENSOR (ss) DADCP: cc MINIMUM RANGE ERRORS	DDAS minimum range errors have occurred, where: cc = error count.
SENSOR (ss) DADCP: cc OVERLOAD ERRORS	DDAS overload errors have occurred, where: cc = error count.
SENSOR (ss) DADCP: cc RANGE ERRORS	DDAS range errors have occurred, where: cc = error count.
SENSOR (ss) DADCP: cc SENSE ERRORS	DDAS sense errors have occurred, where: cc = error count.
SENSOR (ss) DADCP: BEACON REAL TIME QUALITY CONTROL FAULT	A status word indicating a beacon RTQC fault has been received.
SENSOR (ss) DADCP: FAULT--(BEACON REPLIES) TOO FEW WORDS IN THE FIFO	No FIFO words have been received for a beacon-reply message.
SENSOR (ss) DADCP: FAULT--(BEACON REPLIES) TOO MANY REPLIES FOR ONE SWEEP	A beacon-reply message over 65 words long has been received.
SENSOR (ss) DADCP: FAULT--(DDAS ALARM) FEWER THAN 6 WORDS WERE IN THE FIFO	A DDAS alarm message with fewer than six words has been received.
SENSOR (ss) DADCP: FAULT--(DDAS ALARM) MORE THAN 6 WORDS WERE IN THE FIFO	A DDAS alarm message with more than six words has been received.

Format	Description
SENSOR (ss) DADCP: FAULT--(FIRMWARE STATUS) FIFO HAS MORE THAN ONE WORD	A firmware status message with more than one word has been received.
SENSOR (ss) DADCP: FAULT--(FIRMWARE STATUS) FIFO IS EMPTY	A firmware status message with no data word has been received.
SENSOR (ss) DADCP: FAULT--(FIRMWARE STATUS) FIFO WORD IS NOT IN VALID RANGE	A firmware status message has been received with a data word whose value is out of bounds.
SENSOR (ss) DADCP: FAULT--(SECTOR MARK) TOO FEW WORDS IN THE FIFO	A sector mark message with no data word has been received.
SENSOR (ss) DADCP: FAULT--(SECTOR MARK) TOO MANY WORDS IN THE FIFO	A sector mark message with more than one word has been received.
SENSOR (ss) DADCP: FAULT--(TARGET REPORT) TOO FEW WORDS IN THE FIFO	A target report message with fewer than four words has been received.
SENSOR (ss) DADCP: FAULT--(TARGET REPORT) TOO MANY WORDS IN THE FIFO	A target report message with more than four words has been received.
SENSOR (ss) DADCP: FAULT--DADCP HALTED	A DADCP halted fault has occurred.
SENSOR (ss) DADCP: FAULT--DADCP OFF-LINE	A DADCP off-line fault has occurred.
SENSOR (ss) DADCP: FAULT--DDAS INTERRUPTS DISABLED	A DADCP DDAS interrupts disabled fault has occurred.
SENSOR (ss) DADCP: FAULT--HOST INTERRUPTS DISABLED	A DADCP host interrupts disabled fault has occurred.
SENSOR (ss) DADCP: FAULT--ILLEGAL MESSAGE NUMBER	An illegal message number fault has occurred on the Data Acquisition Device Controller Processor (DADCP).
SENSOR (ss) DADCP: FAULT--INTERRUPT TIMEOUT	A DADCP interrupt timeout fault has occurred.
SENSOR (ss) DADCP: FAULT--MS9 NOT SET IN STATUS WORD	A DADCP MSB not set in status word fault has occurred.
SENSOR (ss) DADCP: FAULT--NON-TRACKING MODE	A DADCP non-tracking mode fault has occurred.
SENSOR (ss) DADCP: FAULT--TEST MODE ENABLED	A DADCP test mode enabled fault has occurred.
SENSOR (ss) DADCP: NON-FATAL ERROR--CONTROL WORD	A DADCP non-fatal control word error has occurred.

Format	Description
SENSOR (ss) DADCP: NON-FATAL ERROR--BEACON REPORT FULL	A DADCP non-fatal beacon report full error has occurred.
SENSOR (ss) DADCP: NON-FATAL ERROR--DATA EXTRACTION CONTROL WORD	A DADCP non-fatal data extraction control word error has occurred.
SENSOR (ss) DADCP: NON-FATAL ERROR--DDAS DATA BUFFER FULL	A DADCP non-fatal DDAS data buffer full error has occurred.
SENSOR (ss) DADCP: NON-FATAL ERROR--DDAS DATA LOSS	A DADCP non-fatal DDAS data loss error has occurred.
SENSOR (ss) DADCP: NON-FATAL ERROR--INPUT BUFFER OVERRUN	A DADCP non-fatal input buffer overrun error has occurred.
SENSOR (ss) DADCP: NON-FATAL ERROR--ILLEGAL-NON-FATAL-ERROR	A non-fatal error message has been received with a data word whose value is out of bounds.
SENSOR (ss) DADCP: NON-FATAL ERROR--TARGET DETECTION OVERRUN	A DADCP non-fatal target detection overrun error has occurred.
SENSOR (ss) DADCP: SECTOR MARK RECEIVED LATE	A late sector mark was received.
SENSOR (ss) DADCP: SECTOR PULSE FAULT	The DADCP status word has indicated a sector pulse fault has occurred.
SENSOR (ss) DADCP: CHANNEL SELECTED	The channel for the specified sensor has been selected.
SENSOR (ss) DADCP: CLEAR	A DADCP Alert Clear message was received.
SENSOR (ss) DADCP: DADCP OPERATIVE	DADCP is operative.
SENSOR (ss) DADCP: TOO MANY RESETS IN A GIVEN PERIOD	Too many resets occurred during a giving period.
SENSOR (ss) SERIAL PATH d: GETMSG ERROR	A Serial Radar GETMSG error has occurred.
SENSOR (ss) SERIAL PATH d: TRANSITIONING TO MODE-S SECTOR MARK DELAY	A control panel message was received indicating that Mode S sector mark delays need to be applied.
SENSOR (ss) SERIAL PATH d: TRANSITIONING TO IBI SECTOR MARK DELAY	A control panel message was received indicating that IBI sector mark delays need to be applied.
SENSOR (ss) SERIAL PATH d: DATA SWITCH ALARM	A spare port is now being utilized for data input.

Format	Description
SENSOR (ss) SERIAL PATH d: ANTENNA POLARIZATION: STATUS	An antenna polarization status change was received in the sensor status message. Where status =linear or circular.
SENSOR (ss) SERIAL PATH d: RADAR POST PROCESSOR SWITCH ALARM	A post processor alarm was received in the sensor status message.
SENSOR (ss) SERIAL PATH d: HIGH VOLTAGE: STATUS	A high voltage status change was received in the sensor status message. Where status = ON or OFF.
SENSOR (ss) SERIAL PATH d: WEATHER CHANNEL ALARM (slot: s port: p)	A problem has been detected with the weather port located in slot s port p.
SENSOR (ss) SERIAL PATH d: RADAR WEATHER CHANNEL ALARM (slot: s port: p)	A weather channel alarm was received in the sensor status message located in slot s port p.
SENSOR (ss) SERIAL PATH d: SURVEILLANCE CHANNEL ALARM (slot: s port: P)	A problem has been detected with a surveillance port located in slot s port p.
SENSOR (ss) SERIAL PATH d: SPARE CHANNEL ALARM (slot: s port: p)	A problem has been detected with the spare part located in slot s port p.
SENSOR (ss) SERIAL PATH d: PORT OPEN ERROR (slot: s port: s p)	A port open error has been detected on the port located in slot s port p.
SENSOR (ss) SERIAL PATH d: IOCTL ERROR (slot: s port: p)	An IOCTL read error has occurred on the port located in slot s port p.
SENSOR (ss) SERIAL PATH d: NO CARRIER DETECT SIGNAL (slot: s port: p)	A carrier detect signal problem has been detected on the port located in slot s port p.
SENSOR (ss) SERIAL PATH d: NO DATA RECEIVED (slot: s port: p)	VCOM statistic indicate a data problem with the port located in slot s port p.
SENSOR (ss) SERIAL PATH d: NO BUFFERS RECEIVED (slot: s port: p)	VCOM statistics indicate a buffering problem with the port located in slot s port p.
SENSOR (ss) SERIAL PATH d: CONTINUOUS RESYNCHRONIZATION (slot: s port: p)	There is a synchronization problem on the port located in slot s port p.
SENSOR (ss) SERIAL PATH d: EXCESSIVE PARITY ERRORS (slot: s port: p) count: dd	There were to many parity errors on the port located in slot s port p, where dd is the count of parity errors.
SENSOR (ss) SERIAL PATH d: PORT TIMEOUT (slot: s port: p)	A port timeout has occurred on the port located in slot s port p.
SENSOR (ss) SERIAL PATH d: INPUT TIMEOUT	No data has been received for this sensor in a scan.

Format	Description
SENSOR (ss) SERIAL PATH d: ILLEGAL MESSAGE	An unrecognized message was received from the sensor.
SENSOR (ss) SERIAL PATH d: SENSOR INPUT	input has started on indicated sensor path.
SENSOR (ss) SERIAL PATH d: DECLARED INOPERATIVE	Serial path d for sensor ss is inoperative.
SENSOR (ss) SERIAL PATH d: SYSTEM OVERHEAT ALARM	The number of CD2 messages indicating system overheat has met the threshold.
SENSOR s PORT p: CLOSE FAILED: ERRNO e	An attempt to close port p of sensor s failed with error number e.
SENSOR s PORT p: I-CLOSE IOCTL FAILED: ERRNO e	An attempt to close port p of sensor s failed with error number e.
INVALID MESSAGE RECEIVED FROM ARSR r :CONTROL PANEL	A System Control Panel Communications Message was received from ARSR s. r = sensor abbreviation
INVALID MESSAGE RECEIVED FROM ASR r : SURVEILLANCE MESSAGE ON WEATHER PORT (slot: s port: p)	A surveillance message was received on a port from which weather messages are expected. r = sensor abbreviation
INVALID MESSAGE RECEIVED FROM ASR r : WEATHER MESSAGE ON SURVEILLANCE PORT (slot: s port: p)	A weather message was received on a port from which surveillance messages are expected. r = sensor abbreviation
INVALID MESSAGE RECEIVED FROM ASR r : WEATHER MESSAGE	A Weather Message was received from an ARSR, or a Strobe or variable Map Message was received from an ASR-9 or Mode S sensor. r = sensor abbreviation
SENSOR (ss) SRAP (i): BDAS 00--BMC TABLE OVERFLOW	A BMC table overflow has occurred, causing an SRAP BDAS failure.
SENSOR (ss) SRAP (i): BDAS Ol--BMC RESTART PERFORMED	A BMC restart was performed, causing an SRAP BDAS failure.
SENSOR (ss) SRAP (i): BDAS 02--BEX/FIFO DATA TIMEOUT	A BEX/FIFO data timeout occurred, causing an SRAP BDAS failure.
SENSOR (ss) SRAP (i): BDAS 03--ILLOGICAL CONDITION	An illogical condition that should never occur.
SENSOR (ss) SRAP (i): BDAS 04--RANGE/CODE WORDS OUT OF ORDER	A range or code word is out of order, causing an SRAP BDAS failure.
SENSOR (ss) SRAP (i): BDAS 05--AZIMUTH OUT OF TOLERANCE	The azimuth is out of tolerance, causing an SRAP BDAS failure.

Format	Description
SENSOR (ss) SRAP (i): BDAS 06--INTERLACE ERROR	An interlace error has occurred, causing an SRAP BDAS failure.
SENSOR (ss) SRAP (i): BDAS 07--TEST TARGET NOT DETECTED	A test target was not detected, causing an SRAP BDAS failure.
SENSOR (ss) SRAP (i): BDAS 08--AZIMUTH ALARM (BEX)	An azimuth alarm has occurred, causing an SRAP BDAS failure.
SENSOR (ss) SRAP (i): BDAS 09--RANGE ALARM (BEX)	A range alarm has occurred, causing an SRAP BDAS failure.
SENSOR (ss) SRAP (i): BDAS 10--MODE ALARM	A mode alarm has occurred, causing an SRAP BDAS failure.
SENSOR (ss) SRAP (i): BDAS 11 --BEX/BMC FIFO OVERLOAD	A BEX/BMC FIFO overload has occurred, causing an SRAP BDAS failure.
SENSOR (ss) SRAP (i): BDAS 23--BEX DEFRUITER FIFO OVERLOAD	A BEX Defruiter FIFO overload has occurred, causing an SRAP BDAS failure.
SENSOR (ss) SRAP (i): FAILURE--INPUT BUFFER OVERFLOW	An input buffer overflow has occurred, causing an SRAP Sensor Gateway interface error.
SENSOR (ss) SRAP (i): FAILURE--INPUT TIMEOUT	An input timeout has occurred, causing an SRAP Sensor Gateway interface error.
SENSOR (ss) SRAP (i): FAILURE--PARITY ERRORS EXCEEDED THRESHOLD	Parity errors exceeded threshold, causing an SRAP Sensor Gateway interface error.
SENSOR (ss) SRAP (i): ILLEGAL MESSAGE	Improper ID.
SENSOR (ss) SRAP (i): INPUT	input has started on indicated SRAP channel.
SENSOR (ss) SRAP (i): MP 00--BDAS DATA TIMEOUT	A BDAS data timeout error has occurred, causing an SRAP MP failure.
SENSOR (ss) SRAP (i): MP 01--RDAS ID CODE INCORRECT	An RDAS ID code was incorrect, causing an SRAP MP failure.
SENSOR (ss) SRAP (i): MP 02--RDAS/BDAS SECTOR NOT EQUAL	An RDAS/BDAS Sectors Not Equal error has occurred, causing an SRAP MP failure.
SENSOR (ss) SRAP (i): MP 03--RDAS DATA TIMEOUT	An RDAS data timeout has occurred, causing an SRAP MP failure.
SENSOR (ss) SRAP (i): MP 04--RADAR OR OUTPUT TABLE OVERFLOW	A radar or output table overflow error has occurred, causing an SRAP MP failure.
SENSOR (ss) SRAP (i): MP 05--OUTPUT FIFO FULL	An Output FIFO Full error has occurred, causing an SRAP MP failure.

Format	Description
SENSOR (ss) SRAP (i): RDAS 00--REX/RMC INPUT FIFO FULL	A REX/RMC Input FIFO Full error has occurred, causing an SRAP RDAS failure.
SENSOR (ss) SRAP (i): RDAS 01 --AZIMUTH ALARM (REX)	An azimuth alarm has occurred, causing an SRAP RDAS Failure.
SENSOR (ss) SRAP (i): RDAS 02--RANGE ALARM (REX)	A range alarm has occurred, causing an SRAP RDAS Failure.
SENSOR (ss) SRAP (i): RDAS 03--TEST TARGET NOT DETECTED	A test target was not detected, causing an SRAP RDAS failure.
SENSOR (ss) SRAP (i): RDAS 04--TARGET WORDS OUT OF ORDER	A target word was out of order, causing an SRAP RDAS failure.
SENSOR (ss) SRAP (i): RDAS 05--AZIMUTH OUT OF TOLERANCE	The azimuth was out of tolerance, causing an SRAP RDAS failure.
SENSOR (ss) SRAP (i): RDAS 06--SECTOR MTI TARGET OVERLOAD	A Sector MTI Target Overload error has occurred, causing an SRAP RDAS failure.
SENSOR (ss) SRAP (i): RDAS 07--REX/RMC DATA TIMEOUT	A REX/RMC Data Timeout error has occurred, causing an SRAP RDAS failure.
SENSOR (ss) SRAP (i): RDAS 08--RESTART DATA TIMEOUT	A Restart Data Timeout error has occurred, causing an SRAP RDAS failure.
SENSOR (ss) SRAP (i): RDAS 09--RMC RESTART PERFORMED	An RMC restart was performed, causing an SRAP RDAS failure.
SENSOR (ss) SRAP (i): RDAS 10--RMC TABLE OVERFLOW	An RMC Table Overflow error has occurred, causing an SRAP RDAS failure.
SENSOR (ss) SRAP (i): RDAS 11 --RMC OVERLOAD, TASKS NOT COMPLETED	An RMC Overload, Tasks Not Completed error has occurred, causing an SRAP RDAS failure.
SENSOR (ss) SRAP (i): SECTOR MARK FAIL	A Sector mark out of sequence.
SENSOR (ss) TG: SECTOR MARK MSG RECEIVED WAS OUT OF ORDER	A sector mark message was received out of order.
SENSOR FAILURE (ss)	All available paths from sensor (nn) have failed. Retry continues.
SENSOR nn SEGMENT (SM) MASK ENABLED/DISABLED KEYBOARD (sk)	Segment Mask Enabled/Disabled for sensor nn where nn = ALL if all sensors are enabled/disabled where SM = ALL if all segments are enabled disabled
SENSOR (sss) ACTIVE	Sensor sss is active
SENSOR (sss) PORT d: I-CLOSE IOCTL FAILED: ERRNO e	Sensor sss port number d has failed the first IOCTL attempt to close the port, e is the error number returned from the IOCTL.

Format	Description
SENSOR (sss) PORT d: CLOSE FAILED: ERRNO e	Sensor sss port number d has failed the second IOCTL attempt to close the port, e is the error number returned from the IOCTL.

There are several errors that are detected by sensor input processing which are logged on the SMC. Most of these error messages relate to the format of data input, overflow of tables, or to a condition of the controlling hardware. Other error messages relate to the loss or out of tolerance of parrot remote system monitor (RSM) target reports. The following printouts include Sensor and SRAP errors.

H.2 INTERFACILITY INPUT/OUTPUT

The Inter-facility Input/Output function detects errors that occur in data format, data handling procedure, and hardware in the course of communicating with the adjacent ARTCC. The error messages are shown in the following printout along with a description of their cause. In addition, if the inter-facility printout function is enabled and the inter-facility input/output function detects errors that occur in data format, the associated error message and the interfacility message as received are requested of the error and status function. The format of an Inter-facility Failure message includes the Network Identification (NID) of the CP which reported the error, followed by text describing the error condition.

Format	Description
IF FAIL ccc	Inter-facility failure. IFC down. ccc = adapted source ARTCC.
IF NMARK ALARM	Interfacility northmark alarm.
IF NO ACKNOL ecid ccc	Acknowledge message was not received from the sending ARTCC (ccc) for En Route Computer ID ECID after a parameter number of attempts to transmit a message relating to the identified track.
IF NO ACKNOL RF ecid ccc	Acknowledge message was not received from the sending ARTCC (ccc) for En Route Computer ID ECID after a parameter number of attempts to transmit a message relating to the identified track.
IF NO ACKNOL TB bbbb ccc	Acknowledge message was not received from the sending ARTCC (ccc) for beacon code bbbb after a parameter number of attempts to transmit a message relating to the identified track.
IF NO ACKNOL TB FFFF ccc	Acknowledge message was not received from the sending ARTCC (ccc) after a parameter number of attempts to transmit a message relating to the identified track. Beacon code unknown.
IF NO FP FOR RF ecid ccc	Acknowledge message was not received for a flight plan from the sending ARTCC (ccc) for En Route Computer ID ECID after a parameter number of attempts to transmit a message relating to the identified track.

Format	Description
IF PURG bbbb aaaaaaa i	An inter-facility flight plan (FP) was received with a different ACID but the same ECID as an existing FP. The existing track has store status and its ETA/PTD is older than IF_ECID_PURG (SV) minutes. The existing FP has been purged. bbbb = beacon code, aaaaaaa = ACID, i = ARTCC id.
IF PURG INFO aaaaaaa i	An inter-facility flight plan (FP) was received with a different ACID but the same ECID as an existing FP. The inter-facility information of the existing FP has been purged. aaaaaaa = ACID, i = ARTCC id.
IF TEST FAIL ccc	There has been no response to a test message transmit within a parametric time period. ccc = adapted source ARTCC.
IFCd PORT OPEN FAIL	An attempt to open inter-facility Port <d> has failed
IFCd PORT OPEN SUCCESS	An attempt to open Inter-facility Port <d> has succeeded
IFCx PORT OPEN FAIL	Indicates an unsuccessful attempt to establish communications with adapted ARTCC x
IF INPUT ERROR COUNT THRESHOLD EXCEEDED	Interfacility performance report error.
IF LRC ERROR COUNT THRESHOLD EXCEEDED	Inter-facility performance report error.
IF OUTPUT ERROR COUNT THRESHOLD EXCEEDED	Interfacility performance report error.
IF PARITY ERROR COUNT THRESHOLD EXCEEDED	Interfacility performance report error.

In addition to printing inter-facility errors, the INPRINT function is used to print selected inter-facility message types (see NAS-MD-638, Section 3.29). For inter-facility Flight Plan (FP) messages, the LRC/EOM is replaced with the receiving controller subset and receiving controller position symbol in the INPRINT message.

IF Error Amplified Text

RECEIVED ILLEGAL SECOND TI
AIRCRAFT DATA INVALID
AIRCRAFT ID INVALID
WRONG FDF A/P/E STATUS FOR REQUEST
ASSIGNED ALTITUDE INVALID
BEACON CODE IN TI/TA FROM ARTS
BEACON CODE INVALID

CANNOT AMEND FDF
COMPUTER ID INVALID
REQUESTED CONTROLLER INVALID
COORDINATION FIX INVALID
MESSAGE RECEIVED FROM DISABLED SITE
DT REMARKS INVALID
UNEXPECTED DT MESSAGE RECEIVED
WRONG FDF FP STATUS FOR REQUEST
COULDN'T CHANGE FDF TO STORE STATUS
IF HARDWARE ERROR
INITIALIZE FDF ERROR
MESSAGE FROM INVALID SITE
LRC CHARACTER INVALID
LRC/EOM ERROR AT END OF MESSAGE
MESSAGE TYPE INVALID
TI FROM INVALID SITE
OUTPUT ROUTING ERROR
OVERFLIGHT HANDOFF ILLEGAL
RANGE OUT OF LIMITS
FIELD REFERENCE NUMBER INVALID
REFERENT SOURCE ID INVALID
REJECT CODE INVALID
ROUTE INVALID
SOURCE ID INVALID
TI RECEIVED FOR DEPARTURE
TIME INVALID
TRACK ALREADY IN HANDOFF
TR REMARKS ARE INVALID
TOO MANY CHAINED TU TRACKS
UNEXPECTED RESPONSE FROM SITE
ECID NOT UNIQUE
VFR FP IS NOT A DEPARTURE
XY COORDINATES INVALID

H.3 KEYBOARD INPUT PROCESSING

Format	Description
xxx DBRITE DISPLAY: INPUT PARITY ERROR	Input parity error detected for display NID.
xxx DBRITE DISPLAY: INPUT SYNCH ERROR	Input synchronization error detected for display NID.
xxx DBRITE DISPLAY: OUTPUT PARITY ERROR	Output parity error detected for display NID.
xxx MONITOR HEARTBEATS: HEARTBEAT FAILURE, RESTART RDBM	No input buffer to keyboard input processing for RDBM display xxx.
xxx MONITOR HEARTBEATS: LBP HEARTBEAT FAILURE	No input buffer to keyboard input processing for display NID.
xxx MONITOR HEARTBEATS: SDC HEARTBEAT FAILURE	No input buffer to keyboard input processing for display NID.
LEGEND: NID = Display Network Identification (hexadecimal).	

If a failure occurs during transmission of data or in the hardware controlling the alphanumeric keyboards, an appropriate alarm message is requested for printout on the SMC.

H.4 RDBM ERROR AND STATUS MESSAGES

RDBM detected errors (including its Communications Transmitter Adapter (CTA) and Communications Receiver Adapter (CRA) are output to the SMC. The number of printouts of an error condition is limited by timing the interval between printouts. During any RDBM_ERR_INTV (SP, nominally 10) second interval, at most two printouts for the same error condition are sent to the SMC. RDBM messages are output to the SMC due to abnormalities in I/O transmission during initialization and normal operations. The message includes the display number (xxx) associated with the RDBM.

Format	Description
xxx RDBM DETECTED: CRA DATA SET ALARM ERROR	CRA data set alarm.
xxx RDBM DETECTED: CRA INPUT TIMING ERROR	Input timing error.
xxx RDBM DETECTED: CRA OUT OF SYNCH ERROR	Out of synchronization.
xxx RDBM DETECTED: CTA OUTPUT TIMING ERROR	Output timing error,
xxx RDBM DETECTED: CTA-A PARITY ERROR	CTA-A parity error.
xxx RDBM DETECTED: CTA-B PARITY ERROR	CTA-B parity error.
xxx RDBM DETECTED: DISPLAY INPUT PARITY ERROR	RDBM input parity.
xxx RDBM DETECTED: DISPLAY OUT OF SYNCH ERROR	Display out of synchronization.
xxx RDBM DETECTED: DISPLAY OUTPUT DATA PARITY ERROR	Display output data parity error.
xxx RDBM DETECTED: DISPLAY OUTPUT PARITY ERROR	RDBM output parity.
xxx RDBM DETECTED: NO DATA RECEIVED FROM DPS ERROR	No data received from DPS.
xxx RDBM DETECTED: NO DISPLAY INPUT DATA REQUEST ERROR	No display input data.
xxx RDBM DETECTED: NO DISPLAY OUTPUT DATA REQUEST ERROR	No display output data.
xxx RDBM DETECTED: TEMPORARY STORAGE PARITY ERROR	TSR parity error.

H.5 CONTINUOUS DATA RECORDING (CDR)

CDR requests various informative and alarm printouts.

Format	Description
(s) DISK d DOWN	The expected files on (s = CDR or Hard) disk d do not exist.
(s) DISK d EXECUTE PROTECTED	(s = CDR or Hard) disk will execute protected when made available.
(s) DISK d INACCESSIBLE	(s = CDR or Hard) disk d is not accessible.
(s) DISK d NOT EXECUTE PROTECTED	(s = CDR or Hard) disk d is not execute protected when made available.
(s) DISK d NOT WRITE PROTECTED	(s = CDR or Hard) disk d is not write protected when made available.
(s) DISK d READ PROTECTED	(s = CDR or Hard) disk d is read protected when made available.
(s) DISK d UP	The expected files on (s = CDR or Hard) disk d are available for use.
(s) DISK d WRITE PROTECTED	(s = CDR or Hard) disk is write protected when made available.
BAD FORMAT FOR CDR CLASS ENTRY	Format error on CDR class entry.
CDR DATA LOSS, CDR DISK INIT	CDR disk initialization in progress; CDR data is being discarded.
CDR DATA LOSS, NO CDR DISK	CDR data being written to a disk has been lost due to no disks available.
CDR DISK n BAD FILE SYSTEM	Bad file system found on disk n (where: n = 0 or 1).
CDR DISK n BUSY WITH MAKE FILE SYSTEM	A file system is being made on disk n (where: n = 0 or 1).
CDR DISK n FSCK COMPLETED	File system check completed on disk n (where: n = 0 or 1).
CDR DISK n FSCK IN PROGRESS	File system check in progress on disk n (where: n = 0 or 1).
CDR DISK n MAKE FILE SYSTEM COMPLETED	File system make has been completed on disk n (where: n = 0 or 1).
CDR DISK d ACTIVE	CDR being recorded on disk d.
CDR DISK d AVAILABLE	CDR disk d is available for use.
CDR DISK d CONTAINS OLD DATA	The CDR disk has existing data on it.
CDR DISK d DATA FILE NOT FOUND	CDR disk has not been initialized.

Format	Description
CDR DISK d DOWN	CDR disk d is not available for use.
CDR DISK d FULL	Disk d has exceeded its data limits.
CDR DISK d NOT SCRATCHED -AGE LESS THAN 15 DAYS	Disk d was not scratched because CDR data was less than 15 days old.
CDR DISK d SCRATCHED	CDR disk d is scratched.
CDR DISK d UNABLE TO INITIATE CDR	Unable to initiate CDR on disk d.
CDR DISK d UNABLE TO OPEN DATA FILE	Unable to open Data file on disk d.
CDR DISK d UNABLE TO OPEN HISTORY FILE	Unable to open History file on disk d.
CDR DISK d UNABLE TO OPEN STATUS FILE	Unable to open Status file on disk d.
CDR DISK d UNABLE TO READ STATUS FILE	Unable to read Status file on disk d.
CDR DISK d UNAVAILABLE	Disk d is not available due to peripheral failure.
CDR DISK d UNMOUNT ERROR	CDR mount disk error while trying to unmount disk d.
CDR DISK d UNMOUNTED	CDR disk d is unmounted successfully.
CDR DISK d LOCK SUCCESSFUL	CDR disk d (where d = 0 or 1) has been successfully locked in the drive by the program.
CDR DISK d UNLOCK SUCCESSFUL	CDR disk d (where d = 0 or 1) has been successfully unlocked in the drive by the program. Disk can now be removed from the drive.
CDR DISK d UP	CDR Disk d is UP, where d = 0 or 1
CDR DISK SWITCH FROM DISK d TO DISK d	CDR being transferred from current disk to alternate disk.
CDR INITIATE: BAD DISK NUMBER OR CDR ALREADY ACTIVE	Either CDR already active on disk d or disk d is not available.
CDR OFF DISK d POSITION pppppppp	CDR is terminated on disk d, pppppppp — position (byte offset).
CDR ON DISK d POSITION pppppppp	CDR is initiated on disk d, pppppppp — position (byte offset).
CHANGE IN TIME — CDR HISTORY FILE NOT CONTINUOUS	A time change has been made.
d MESSAGES ON SCDR QUEUE, NON-STANDARD CLASSES DISABLED	Non-standard CDR classes are disabled on SCDR queue on disk d.
NO VALID CDR CLASS FOUND	Invalid CDR class entered.
s DISK d MOUNT FAILURE	Mount of CDR disk failed. (s = CDR, d = 0 or 1)

Format	Description
SMC CDR DATA LOST nnnn	Number of CDR messages lost when threshold limit exceeded (since last print of this message). nnnn = number lost.
SMC n CDR ENTRY — BAD FORMAT	Format error in the CDR entry on SMC n.
SWAP CDR DISK d	Swap CDR disk to d.

H.6 TRACKING AND TRACK FILE USAGE

internal alarm messages are generated to provide information on errors detected by Track Processing and on significant events to the usage of CTS files.

Format	Description
Archive response received disk %d	Archive response received for disk n
ATF nn FULL (xx)	Active Track File is full for sensor nn. xx = number of active tracks that could not be initiated in the last minute
BOT nn FULL (xx)	Beacon only Tentative Track File full for sensor nn. xx = # of tentative beacon track files not initiated in the last minute.
CDR DISK n WRITE ERROR: REFORMAT DISK	Write error on CDR disk n, where n = 0 or 1. Need to reformat disk.
DEVIATION TRACK OVERFLOW nn (xx)	No more room for deviation tracks for sensor nn. xx = # of deviation track files that could not be initiated in the last minute.
ERROR DELETING PRINT FILE (path + filename)	Could not delete print file after it was printed
F5 ENTRY — UNABLE TO UPDATE DISPLAY TABLIST — NO STATUS FROM MCP	Unable to update sign-on/Sign-off tabular list
FDF USE GREATER THAN dd%	FDF usage exceeds SP (satq) threshold value. dd% = adapt site parameter SATQ
FDF USE LESS THAN dd%	FDF usage now 5% below SP (satq) threshold value. dd% = adapt site parameter SATQ-5
FLOPPY DISK DOWN	Floppy disk on SMC chassis is down
FLOPPY DISK UP	Floppy disk on SMC chassis is up
Invalid cp nid check your site adaptation; got n	Receive CP Heartbeat message from NID not in site adaptation
Invalid pc nid check your site adaptation; got n	Receive PC Heartbeat message from NID not in site adaptation
Invalid smc nid check your site adaptation; got n	Receive SMC Heartbeat message from NID not in site adaptation
Invalid tp nid check your site adaptation; got n	Receive TP Heartbeat message from NID not in site adaptation
NO DP CRIT MESSAGE FOR DISPLAY d; CANNOT INIT	Cannot initialize display (d) for replay because no critical data exists
PRINT FILE (path + filename) FAILED, HSP IS DOWN	Print file not printed because HSP is down
REPLAY RUNNING FROM OFF-LINE SMON	Replay running on off-line SMC

Format	Description
RETRACK NOT ACTIVE; CANNOT CHANGE PARAMETERS	Retrack is not active; therefore, cannot change retrack parameters
RETRACK RUNNING FROM OFFLINE SMON	Retrack running on off-line SMC
ROT nn FULL (xx)	Radar only Tentative Target File full for sensor nn. xx = # of radar only tracks that could not be initiated in the last minute.
SECT LSS nn (xx)	Sector loss due to system overload for sensor nn. xx = # of sectors behind in last minute.
SMON *** ERROR ERROR ERROR INIT ADAPT *** NO SMONS found	No SMC or SP chassis found in site adaptation data
TB ARRAY OVERFLOW, TB for acid to ccc LOST	Exceeded storage for flight plans with a TCID. acid = a/c identification, ccc = ARTCC identifier.
TRAINING CAPACITY SENSOR nn	Training track deleted to make room for live track for sensor nn.
TRK CAPACITY (+/-) SENSOR nn	TPS Track Capacity exceeded for sensor nn

H.7 SUBSYSTEM INTERFACE AND CONTROL MESSAGES

Subsystem interface and control messages are generated to provide information on errors detected by Subsystem Software during control of and communication between the various CSCIs in the ARTS software.

Format	Description
ACTIVE CPx/TPx/SPx/SMCx SWITCH: HEARTBEAT LOSS	The identified active chassis (CP/TP/SP/SMC) has been switched to this chassis because the former active chassis stopped sending heartbeats.
ACTIVE CPx/TPx/SPx/SMCx SWITCH: KEYBOARD ENTRY	The identified active chassis has been switched to this chassis due to an operator entered request.
ACTIVE CPx/TPx/SPx/SMCx SWITCH: PERIPHERAL FAILURE	The identified active chassis has been switched to this chassis because a peripheral failed on the former active chassis.
AGWX HARD DISK d UP	ARTS Gateway X hard disk d is UP.
AGWX HARD DISK d DOWN	ARTS Gateway X hard disk d is DOWN.
AGWX FLOPPY DISK UP	ARTS Gateway X floppy disk is UP.
AGWX FLOPPY DISK DOWN	ARTS Gateway X floppy disk is DOWN.
AGWX CTIS IS ACTIVE: HEARTBEAT	CTIS assumes active state in Gateway X for reason of heartbeat status.
AGWX CTIS IS ACTIVE: PERIPHERAL FAILURE	CTIS assumes active state in Gateway X for reason of peripheral failure.
AGWX CTIS IS ACTIVE: KEYBOARD ENTRY	CTIS assumes active state in Gateway X for reason of keyboard entry.
AGWX CTIS IS ACTIVE: INITIALIZATION	CTIS assumes active state in Gateway X for reason of initialization.
AGWX CTIS IS STANDBY	CTIS assumes standby state in Gateway X.
AGWX CTIS IS IDLE	CTIS assumes idle state in Gateway X.
AGWX CTIS IS OFF-LINE	CTIS assumes off-line in Gateway X.
AGWX n (process name) FAILED NETWORK HEARTBEAT	The process (process name) in Gateway X NID n failed to heartbeat.
AGWX n (process name) RESUMED NETWORK HEARTBEAT	The process (process name) in Gateway X NID n resumed heartbeating.
ADAR NOT AVAILABLE, REQUESTING IDLE STATE	Operator requested CTIS be changed to active or standby state and ADAR is not available. As a result the CTIS state is automatically changed to idle.

Format	Description
CP x/TP x CHASSIS STATE CHANGE MSG. NEW STATE: ACTIVE	Chassis state change message requests a change to active. Message only output when TP or CP chassis state are changed. Not generated for SMC or SP state changes.
CP x/TP x CHASSIS STATE CHANGE MSG. NEW STATE: IDLE	Chassis state change message requests a change to idle. Message only output when TP or CP chassis state are changed. Not generated for SMC or SP state changes.
CP x/TP x CHASSIS STATE CHANGE MSG. NEW STATE: OFFLINE	Chassis state change message requests a change to offline. Message only output when TP or CP chassis state are changed. Not generated for SMC or SP state changes.
CP x/TP x CHASSIS STATE CHANGE MSG. NEW STATE: STANDBY	Chassis state change message requests a change to standby. Message only output when TP or CP chassis state are changed. Not generated for SMC or SP state changes.
OTHER SP ACTIVE. TPS/CPS CHANGING TO STANDBY.	A chassis state change has caused the other SP chassis to assume active state. The chassis identified by the NID is assuming standby state.
CP DOWN	All CP chassis have stopped sending heartbeats.
CP/TP/DPS/SP/SMC VER/REV xxx BUILD DATE/TIME mmddyy/hh:mm:ss	Identifies the version/revision number (xxx) and build date/time for each of the software subsystems.
CPx/TPx/SPx/SMCx/RGWx n CPS/TPS/SMON FAILED NETWORK HEARTBEAT	Chassis (CP/TP/SP/SMC/RGW) NID n has stopped sending heartbeats.
CPx/TPx/SPx/SMCx/RGWx n CPS/TPS/SMON RESUMED NETWORK HEARTBEAT	The identified chassis NID n has resumed sending heartbeats.
CPx/TPx/SPx/SMCx n IS ACTIVE CP/TP/SP/SMC	The identified chassis NID n is the active chassis.
CPx/TPx/SPx/SMCx n IS OFF-LINE	The identified chassis NID n is now off-line.
CPx/TPx/SPx/SMCx n IS STANDBY	The identified chassis NID n is now in the standby state.
DISPLAY ddd DOWN DUE TO INCORRECT PROGRAM VERSION	Display number ddd declared down because of wrong program version.
DISPLAY ddd FAILED NETWORK HEARTBEAT	Time of heartbeat message for display ddd exceeded time threshold.
FAILED NETWORK HEARTBEAT d...d	Display(s) d...d failed to transmit a heartbeat message on the active network.
LANC A FAILED ON NID nid	A LANC on network trunk A has stopped sending messages for the identified nid.
LANC B FAILED ON NID nid	A LANC on network trunk B has stopped sending messages for the identified nid.

Format	Description
MESSAGE LENGTH (x) IS GREATER THAN MAXSUBMSGL (1452) MESSAGE NOT SENT	A message write failed because its length exceeded the maximum.
TP DOWN	All TP chassis have stopped sending heartbeats.
NEW RGW MESSENGER DISPLAY ddd	Display ddd is forwarding messages between the RGW C and D network and the Common ARTS A and B LANs.

H.8 DISPLAY RELATED ERROR MESSAGES

These messages are generated to provide information on errors detected by display and keyboard processing functions.

Format	Description
xxx ACD KEYBOARD (ddd) FAILED HEART-BEAT	ACD display xxx failed to receive a heartbeat message for keyboard ddd after a threshold number of times.
xxx ACD TRACKBALL DEVICE (ddd) FAILED HEARTBEAT	ACD display xxx failed to receive a heartbeat message for trackball device ddd after a threshold number of times.
xxx RDBM SWITCHED FROM NID nn TO NID nn	Automatic switching of RDBM between specified NIDs. nn = NID number.
INVALID CONTROLLER KEYBOARD MESSAGE FIELD: PREVIEW FUNCTION	Controller keyboard message invalid preview function.
INVALID CONTROLLER KEYBOARD MESSAGE FIELD: PREVIEW MESSAGE DOES NOT BEGIN WITH TG<CR>	The entered preview string does not begin with valid TG characters.
INVALID DELETE TRACK REQUEST MESSAGE FIELD: SENSOR NUMBER nn	Delete track request message has an invalid sensor number nn.
INVALID DELETE TRACK REQUEST MESSAGE FIELD: TRACK NUMBER nnn	Delete track request message has an invalid track number nnn.
INVALID SLEW IN F5 ENTRY FROM KYBD sk	There is an invalid slew in the F5 entry from keyboard denoted by sk.
KYBD: BAD SIGN-OFF COMBINED POSITION — POSITION MUST BE ALPHANUMERIC	The sign-off position entry must be alphanumeric.
KYBD: BAD SIGN-ON/OFF FUNCTION SELECTION	The entry is not a sign-on, sign-off, or a report request (F7,5).
POSITION sk NOT ADAPTED IN F5 ENTRY	The keyboard position sk is not adapted for sign on.
TRS Overflow nn	Tarqet Report Store full for sensor nn
xxx AACU BOX CONSTANTLY BUSY	AACU status — Box constantly busy.
xxx AACU BOX NOT POWERED UP	AACU status — Box not powered up.
xxx ADDRESS ERROR	DDCP status — Attempt to use odd address.
xxx BUS ERROR	DDCP status — Invalid address access.
xxx C61_1_INIT_MSG: HANDSHAKE NOT RECEIVED	Status does not indicate that handshake message has been received.
xxx C61_20_TRK_MSG: ATTEMPT TO DELETE NONEXISTENT TRACK	Message track number to delete does not exist.
xxx C61_20_TRK_MSG: SDC NOT INITIALIZED	SDC status is not operational.

Format	Description
xxx C61_21_ADD_TRK: TOGGLE LINE NOT DISPLAYED — CAPACITY EXCEEDED	Message toggle data exceeds available memory limit.
xxx C61_21_ADD_TRK: TRACK NOT DISPLAYED — CAPACITY EXCEEDED	Number of new tracks exceeds the capacity of the SDC.
xxx C61_23_UDPAT_TRK: TOGGLE LINE NOT DISPLAYED — CAPACITY EXCEEDED	Message toggle data exceeds available memory limit.
xxx C61_30_TAB_MSG: INVALID LINE NUMBER ZERO	Message tabular line number is invalid.
xxx C61_30_TAB_MSG: SDC NOT INITIALIZED	SDC status is not operational.
xxx C61_30_TAB_MSG: TABULAR LIST NOT INITIALIZED	Tabular list specified by message tabular list number is not initialized.
xxx C61_31_ADD_LINE: LINE NOTDISPLAYED — CANNOT SKIP TAB LINES	Message tabular line number is out of range.
xxx C61_31_ADD_LINE: LINE NOT DISPLAYED — TAB LIST FULL	No addition possible; tabular list is already full.
xxx C61_33_MOD_LINE: ATTEMPT TO MODIFY NONEXISTENT TAB LINE	Message tabular line number to modify is out of range.
xxx C61_34_DEL_LINE: A-I-TEMPT TO DELETE NONEXISTENT TAB LINE	Message tabular line number to delete is out of range.
xxx C61_40_BDATA_MSG: SDC NOT INITIALIZED	SDC status is not operational.
xxx C61_41_MAP_BD: MAP RECEIVED OUT OF ORDER	Message map received out of order.
xxx C61_41_MAP_BD: MAP SEGMENT RECEIVED OUT OF ORDER	Message segment of map received out of order.
xxx C61_51_FRNT_PANL: SDC NOT INITIALIZED	SDC status is not operational.
xxx C61_510_RNG_DCTR: SDC NOT INITIALIZED	SDC status is not operational.
xxx C61_52_RESET: SDC NOT INITIALIZED	SDC status is not operational.
xxx C61_53_LOOPBACK: SDC NOT INITIALIZED	SDC status is not operational.
xxx C61_54_ALARMS: SDC NOT INITIALIZED	SDC status is not operational.
xxx C61_55_KB_MAPSEL: SDC NOT INITIALIZED	SDC status is not operational.
xxx C61_56_DS_INHBIT: SDC NOT INITIALIZED	SDC status is not operational.

Format	Description
xxx C61_57_KB_INHBIT: SDC NOT INITIALIZED	SDC status is not operational.
xxx C61_58_MEM_RDOUT: SDC NOT INITIALIZED	SDC status is not operational.
xxx C61_59_CHG_MEM: SDC NOT INITIALIZED	SDC status is not operational.
xxx C63_0_RD_PREVMSG: PREVIEW TAB LIST NOT INITIALIZED	Preview tabular list is not initialized.
xxx C71_14_CKSUBMSGS: EMPTY IFRAME	Message error code indicates empty iframe.
xxx C71_14_CKSUBMSGS: IFRAME DISCARDED	Message error code indicates iframe discarded.
xxx C71_14_CKSUBMSGS: PARTIAL IFRAME DISCARDED	Message error code indicates partial iframe discarded.
xxx CHECKSUM MISMATCH	DDCP status — Checksum error.
xxx DATABASE TRANSVERSAL ERROR	DDCP status — Database traversal error.
xxx DESIRED SENSE BIT NOT ACTIVE	AACU status — Sense bit not active.
xxx DISPLAY INTERFACE TIMEOUT	DDCP status — RADS not interrupting after enabling of the interface.
xxx DIVIDE BY ZERO	DDCP status — Divide by zero.
xxx DOUBLE CLOSE	DDCP status — Two close messages in a row.
xxx DOUBLE OPEN	DDCP status — Two open messages in a row.
xxx FAILURE OF M68K CHK INSTRUCTION	DDCP status — Failure of 68000 CHK instruction.
xxx FDAD TRACK CAPACITY EXCEEDED	Number of new tracks exceeds the capacity of the FDAD.
xxx FRAMES ACKNOWLEDGE TIMEOUT THRESHOLD EXCEEDED	SIA/SDC acknowledge timeouts detected value exceeded.
xxx FRAMES LOST (NOT ACKNOWLEDGED) THRESHOLD EXCEEDED	SIA/SDC frames discarded value exceeded.
xxx FRAMES RECEIVED THRESHOLD EXCEEDED	SIA/SDC frames received value exceeded.
xxx FRAMES RECEIVED WITH SEQUENCE NUMBER ERROR THRESHOLD EXCEEDED	SIA/SDC sequence errors detected value exceeded.
xxx FRAMES RETRANSMIT-I-ED THRESHOLD EXCEEDED	SIA/SDC frames retransmitted value exceeded.
xxx FRAMES SENT THRESHOLD EXCEEDED	SIA/SDC frames sent value exceeded.

Format	Description
xxx GRAPHIC POINTS PRIMITIVE MESSAGE: OBJECT OUT OF RANGE	Message point coordinate is out of range.
xxx GRAPHIC PRIMITIVE MESSAGE: OBJECT OUT OF RANGE	A graphics object on display xxx is out of display range when doing conversion of primitive coordinates to common application coordinates.
xxx GRAPHIC TEXT PRIMITIVE MESSAGE: OBJECT OUT OF RANGE	Message text coordinate is out of range.
xxx ILLEGAL CONTROL CODE	DDCP status — Illegal control code.
xxx ILLEGAL INSTRUCTION	DDCP status — Illegal instruction execution.
xxx ILLEGAL INTERRUPT VECTOR	DDCP status — Use of Motorola reserved vector.
xxx ILLEGAL MSG DESCRIPTOR	DDCP status — Unknown message type.
xxx INPUT REGISTER POLL TIMEOUT	DDCP status — Poll timeout error for input register.
xxx INVALID ATTEMPT TO CHANGE NON-BROADBAND LDDT STATUS	While not in BROADBAND mode, the xxx ACD operator tried to initiate LDDT before all the prerequisite actions were performed.
xxx INVALID DDCP CONTROL WORD	DDCP status — Control word invalid.
xxx INVALID DDCP MODE	DDCP status — Invalid DDCP mode.
xxx INVALID ECHO DATA RETURNED	AACU status — Invalid echo data returned.
xxx INVALID FRAMES RECEIVED THRESHOLD EXCEEDED	SIA/SDC or RDBM frame errors detected value exceeded.
xxx LOCAL DBRITE DISPLAY: REFRESH BUFFER AT MAXIMUM	Display object does not fit into refresh memory output buffer.
xxx LOCAL DBRITE TRACK CAPACITY EXCEEDED	Number of new tracks exceeds the capacity of the local DBRITE.
xxx LOCAL FDAD TARGET CAPACITY EXCEEDED	Number of new targets exceeds the capacity of the FDAD.
xxx M68K TRAP INSTRUCTION	DDCP status — 68000 TRAP instruction.
xxx MEMORY ALLOCATION FAILURE	DDCP status — Insufficient memory for message.
xxx MEMORY PARITY ERROR	DDCP status — Memory parity error.
xxx MISSING OPEN	DDCP status — DDCP not open when data received.
xxx MONITOR LOOPBACK TEST: LOOPBACK TEST FAILURE	Response time exceeded on SDC Loopback — Response message.
xxx NO POLL RESPONSE	DDCP status — No poll response.

Format	Description
xxx NO POLL RESPONSE FROM KEYBOARD	KDC status — No poll response from keyboard.
xxx OBJECT DATA LOST	DDCP status — Object data lost error.
xxx OPEN CLOSE MISMATCH	DDCP status-Open and close messages don't match.
xxx OUTPUT REGISTER POLL TIMEOUT	DDCP status — Poll timeout error for output register.
xxx PARAMETER INIT ERROR	DDCP status — Illegal header parameter.
xxx PRIVILEGE INSTRUCTION VIOLATION	DDCP status — Privilege violation.
xxx PROCESSOR UTILIZATION THRESHOLD EXCEEDED	SIA/SDC processor utilization value exceeded.
xxx RECEIVE NOT READY RESPONSES RECEIVED THRESHOLD EXCEEDED	SIA/SDC receive not ready response received value exceeded.
xxx RECEIVE PARITY ERROR	KDC status — Receive parity error.
xxx RECEIVE READY COMMANDS RECEIVED THRESHOLD EXCEEDED	SIA/SDC receive ready commands received value exceeded.
xxx RECEIVE READY RESPONSES RECEIVED THRESHOLD EXCEEDED	SIA/SDC receive ready responses received value exceeded.
xxx RECEIVE READY RESPONSES SENT THRESHOLD EXCEEDED	SIA/SDC receive ready responses sent value exceeded.
xxx REJECT RESPONSES RECEIVED THRESHOLD EXCEEDED	SIA/SDC reject responses received value exceeded.
xxx REJECT RESPONSES SENTTHRESHOLD EXCEEDED	SIA/SDC reject responses send value exceeded.
xxx SIA/SDC OUTPUT MSG QUEUE OVERFLOW	Message indicates SIA/SDC output message queue overflow.
xxx SOURCE DISPLAY HAS NO NON-DEFAULT USER PREFERENCES	ACD status — No User Preference Sets other than default (MAINT and GUEST).
xxx SPURIOUS INTERRUPT	DDCP status — Spurious interrupt error.
xxx START RECEIVE OF USER PREFERENCE SYNC REQUEST FROM NID xx	ACD status — User Preference Synchronization received from NID xx. Processing of data is started.
xxx START SEND OF USER PREFERENCE SYNC REQUEST TO NID xx	ACD status — Synchronization Request message sent for User Preference Set processing to NID xx.
xxx SUPERVISORY STACK OVERFLOW	DDCP status — Supervisor stack overflow.

Format	Description
xxx SYNC REQUEST CANCELLED, SOURCE DISPLAY NOT IN NORMAL MODE	ACD status — Source display in some other mode than normal. Synchronization Request message was cancelled.
xxx SYNC REQUEST MESSAGE: SOURCE DISPLAY NOT IN NORMAL MODE	ACD status — Synchronization Request message received. However, source display in some other mode than normal.
xxx SYNC REQUEST MESSAGE: SOURCE NID DOES NOT MATCH DISPLAY NID	ACD status — Synchronization Request message received. Sending NID is not the display NID.
xxx SYNC REQUESTMESSAGE: INVALID TARGET NID	ACD status — Designation NID of Synchronization Request message is not a display.
xxx SYNC REQUEST MESSAGE: TARGET NID NOT ADAPTED	ACD status — Destination NID of Synchronization Request message is not found in Site Adaptation file.
xxx SYNC REQUEST MESSAGE: TARGET NID IS NOT AN ACD DISPLAY	ACD status — Destination NID of Synchronization Request message is not a chassis type of ACD in Site Adaptation file.
xxx SYNC REQUEST MESSAGE: TARGET NID SAME AS SOURCE NID	ACD status — Destination NID of Synchronization Request message is same as Source NID.
xxx SYNC REQUEST MESSAGE: PROCESSING PREVIOUS SYNC REQUEST	ACD status — Still processing a previous Synchronization Request message.
xxx SYNC REQUEST CANCELLED, SOURCE DISPLAY STILL LOADING USERS	ACD status -Current Synchronization Request message cancelled. Still loading User Preference Sets.
xxx SYNC REQUEST CANCELLED, DESTINATION DISPLAY NOT IN NORMAL MODE	ACD status — Destination display in some other mode than normal. Synchronization Request message was cancelled.
xxx SYNC REQUEST CANCELLED, DESTINATION DISPLAY STILL LOADING USERS	ACD status -Current Synchronization Request message cancelled. Destination display still loading User Preference Sets.
xxx TRACE EXCEPTION	DDCP status — Trace exception.
xxx TRANSMIT PARITY ERROR	KDC status — Transmit parity error.
xxx UNEXPECTED DDCP INTERRUPT	DDCP status — Unexpected DDCP interrupt.
xxx UNINITIALIZED INTERRUPT VECTOR	DDCP status — Interrupt from device with no interrupt vector.
xxx UNUSED INTERRUPT VECTOR	DDCP status — Unused interrupt vector.
xxx UNUSED TRAP VECTOR	DDCP status — Unused TRAP instruction.
xxx USER PREFERENCE MEMORY ALLOCATION FAILURE	ACD status — Insufficient memory for message.

Format	Description
xxx USER PREFERENCE MESSAGE: INVALID PREFERENCE NUMBER	ACD status — Preference Set Number less than 0 or greater than MAX_PREF_IDS.
xxx USER PREFERENCE MESSAGE: INVALID REPLAY DATA	ACD replay message from SMC contents are invalid.
xxx USER PREFERENCE MESSAGE: PREVIOUS SYNC NOT COMPLETED	ACD status — Still processing Synchronization Request message.
xxx USER PREFERENCE MESSAGE: START OF SYNC NOT RECEIVED	ACD status- Start of Synchronization message not received. Messages are out of order.
xxx USER PREFERENCE MESSAGE: SOME SYNC PREFERENCES LOST	ACD status — Synchronization message not in order.
xxx USER PREFERENCE MESSAGE: INVALID SYNC DATA	ACD status — Synchronization data in message does not match expected data.
xxx USER PREFERENCE MESSAGE: DISK UNAVAILABLE	ACD status — Disk drive is currently busy.

H.9 CRITICAL DATA ERROR MESSAGES

These messages are generated to provide information on errors detected during critical data recording.

Format	Description
ATM RECEIVED AFTER SUPPLEMENTAL ATF MSG: xxx nn	The Active Track Maintenance message was received for track number xxx in sensor nn after the Supplemental ATF message was received.
CENRAP ACTIVE sss	First CENRAP North Mark received for sensor sss
CHASSIS IN MAINTENANCE MODE — FILE TRANSFERS ONLY	Chassis is in a state that requires maintenance intervention.
CRITICAL DATA LOADED FROM HARD DISK	CP heartbeat indicates critical data load from disk was successful.
CRITICAL DATA NOT LOADED	CP heartbeat indicates critical data load from disk was unsuccessful.
Disk Failure — Unable to save critical data	No disk/file is available for writinq critical data.
DUPLICATE NODE ADDRESS n	A node has been detected on the network with the same identifier (n = node).
ERROR OCCURRED AT dd/mm/yy hh:mm:ss BUILT ON dd/mm/yy hh:mm:ss	Specifies the date and time of the program and when it failed (dd/mm/yy hh:mm:ss = error and build date and time).
INVALID TRACK NUMBER REQUEST MESSAGE FIELD: ATF NOT RESERVED nnnn	Track Number Request message has an unreserved track number nnnn.
INVALID TRACK NUMBER REQUEST MESSAGE FIELD: SENSOR NUMBER nn	Track Number Request message has an invalid sensor number nn.
INVALID TRACK NUMBER REQUEST MESSAGE FIELD: TRACK NUMBER nnnn	Track Number Request message has an invalid track number nnnn.
INVALID TRACK STATUS CHANGE MESSAGE FIELD: SENSOR NUMBER nn	Track Status Change message has an invalid sensor number nn.
INVALID TRACK STATUS CHANGE MESSAGE FIELD: TRACK NUMBER nnnn	Track Status Change message has an invalid track number nnnn.
LYNX ERROR d AT ADDR aa on dd/mm/yy hh:mm:ss	Recovery printout of LYNX error. (d = error number, aa = error address, dd/mm/yy hh:mm:ss = error date and time).
LYNX ERROR e (d) AT ADDR aa on dd/mm/yy hh:mm:ss	Recovery printout of LYNX error (e = error text, d = error-number, aa = error address, dd/mm/yy hh:mm:ss = error date and time).
LYNX EXCEPTION d AT ADDR aa on dd/mm/yy hh:mm:ss	Recovery printout of LYNX exception error. (d = error number, aa = error address, dd/mm/yy hh:mm:ss = error date and time).
LYNX EXCEPTION e (d) AT ADDR aa on dd/mm/yy hh:mm:ss	Recovery printout of LYNX exception error (e = error text, d = error number, aa = error address, dd/mm/yy hh:mm:ss = error date and time).

Format	Description
NETWORK — FRAMES LOST c THRESHOLD: t	The number of network frames lost in the performance period exceeds the threshold (c = frames lost, t = threshold).
NETWORK — FRAMES RETRANSMITTED: c THRESHOLD: t	The number of network frames retransmitted in the performance period exceeds the threshold (c = frames retransmitted, t = threshold).
No Good Buffers — Unable to restore critical data	Critical data file found with an invalid date.
RGW NETWORK — MSGS LOST FROM NID Ox(n): (d) THRESHOLD: (t)	This chassis has lost d messages from NID n, which exceeds the threshold of t.
sss INSTANCE i DID NOT START	Program has failed to start (sss = program, i = instance).
sss INSTANCE i FAILED ON SIGNAL g, RESTARTING	Program has failed and is being restarted (sss = program name, i = instance, g = failure signal).
sss INSTANCE i FAILURE LIMIT, CLIENT NOT RESTARTED	Program has exceeded the limit of failures. (sss = program, i = instance).
sss INSTANCE i FINISHED	Program has finished (sss = program name, i = instance).
sss: CPU LOAD c EXCEEDS t THRESHOLD	The CPU load for last performance period for a programs exceeds limits of the threshold (sss = program, c = CPU load, t = threshold).
sss:i ERROR d AT ADDR aa IN u LINE I	Recovery printout of program error. (sss = program, i = instance, d = error number, aa = error address).
sss:i ERROR e (d) AT ADDR aa IN u LINE I	Recovery printout of program error (sss = program, i = instance, e = error text, d = error number, aa = error address).
sss:i EXCEPTION d AT ADDR aa	Recovery printout of program exception error. (sss = program, i = instance, d = error number, aa = error address).
sss:i EXCEPTION e (d) AT ADDR aa	Recovery printout of program exception error (sss = program, i = instance, e = error text, d = error number, aa = error address).
SSSD VERSION v, ADAPTATION VERSION a, BUILT mmm dd yyyy hh:mm:ss	SSSD has started (v = revision, a = adaptation revision, mmm dd yyy hh:mm:ss = SSSD build date and time). Note: This message may occur twice on system startup or system reset
SUPPLEMENTAL ATF MSG RECEIVED BEFORE ATM: ATF UNUSED xxx nn	A Supplemental ATF message was received for an unused track number xxx in sensor nn before the Active Track Maintenance message was received.

Format	Description
SUPPLEMENTAL ATF MSG RECEIVED BEFORE ATM: ATF RESERVED xxx nn	A Supplemental ATF message was received for a reserved track number xxx in sensor nn before the Active Track Maintenance message was received.
TP d IS ACTIVE. TP d REQUESTING STANDBY	An active TP exists. Request standby for this TP, where d is the TP chassis number
TP d REQUESTING IDLE TO STANDBY PROMOTION	Idle TP is requesting promotion to standby, where d is the TP chassis number
xxxx VERSION n.nn.nn BUILT mmm dd yyyy hh:mm:ss	Program has started xxxx = program, n.nn.nn = revision, mmm dd yyyy hh:mm:ss = build date and time). Note: This message may occur twice on system startup or system reset.

H.10 DASI STATUS/ERROR MESSAGES

These messages provide information on the DASI status and/or errors detected during DASI operation.

Format	Description
DASI (i) detected an error	An error was detected by DASI. i = DASI number.
DASI (i) is off line	DASI is off-line. i = DASI number.
DASI (i) is on line	DASI is on-line. i = DASI number.
DASI (i) sent a garbled message	A garbled message was sent from DASI. i = DASI number.
DASI (i) Serial Port Driver-Detected Error	A serial port driver detection error has occurred. i = DASI number.
DASI (i) Serial Port Input Data Length Error	A serial port input data length error has occurred. i = DASI number.
DASI d NOT ADAPTED	DASI d identified in DASI information message is not adapted.
DASI d OFF-LINE	DASI d identified in DASI information message is off -line.
DASI d ON-LINE	DASI d identified in DASI information message is on-line.
DASI d OUT OF TOLERANCE — aaaa	DASI altimeter value aaaa received from DASI d in DASI information message is out of tolerance with previous value received, where aaaa is a value between 27.00 and 32.00 (or 0915 and 1084 if SV millibar-alt is TRUE).
DASI HARDWARE FAILURE MESSAGE	Message output when an adapted DASI indicates it is off-line.
DASI SOFTWARE FAILURE MESSAGE	Message output when failure to receive a DASI heartbeat is detected.
DASI d OUT OF HG OR MILLIRANGE — aaaa	DASI altimeter value aaaa received from DASI d in DASI information message is not between 2700 and 3200 (or 0915 and 1084 is SV millibar-alt is TRUE).

H.II SMC STATUS/ERROR MESSAGES

These messages provide information on the SMC status and/or errors detected by the SMC operation.

Format	Description
[report type] SSR REQUEST TIMEOUT, NID nn	An "SM SS" request response was not received within the allowable time. nn = NID number where: report type = NETWORK MONITOR/CONTROL INTERFACILITY TMS RADAR DASI SERIAL INTF ADPT
CERTIFIER MUST HAVE 2 INITIALS IN F5 ENTRY	The certifier must enter 2 initials when signing on.
ERROR READING PRINT FILE (file name)	An error was encountered while reading the print file (file name).
EVALUATOR MUST HAVE 2 INITIALS IN F5 ENTRY	The evaluator must enter 2 initials when signing on.
EXTRA CHARS IN F5 ENTRY (entry)	The entry (entry) has too many characters causing a format error (F7,5).
EXTRA CHARS IN F5 REPORT ENTRY	The report entry (entry) has too many characters causing a format error (F7,5).
HIGH SPEED PRINTER DEVICE OPEN FAILED, errno nnnn	The high-speed printer port could not be opened. Error number = nnnn.
HIGH SPEED PRINTER INITIALIZATION FAILED, errno nnnn	The high-speed printer failed to initialize properly. Error number = nnnn.
HIGH SPEED PRINTER STATUS READ FAILED, errno nnnn	Status from the high-speed printer could not be read successfully. Error number = nnnn.
HIGH SPEED PRINTER WRITE FAILED, errno nnnn	The high-speed printer failed in write mode. Error number = nnnn.
ID MUST CONTAIN ALPHA CHARACTERS IN F5 ENTRY	The opening position must contain alpha characters.
INSTRUCTOR MUST HAVE 2 INITIALS IN F5 ENTRY	The instructor must enter 2 initials when signing on.
MAP FILE /Dn/MMAPS/f ERROR e	An attempt to read a digital map file has failed. An error (e = error number) has occurred in file (f = file name) on disk n (0 or 1).

Format	Description
MAP SET /Dn/MSETS/SNss MSyy ERROR e	An attempt to read a digital map set has failed. The error (e = error number) has occurred in map set yy for sensor ss on disk n (0 or 1).
MISSING SPACE/CRLF IN F5 ENTRY FROM KYBD sk	There is a missing space in the F5 entry from the keyboard denoted by sk.
PC PRINTER MESSAGES REDIRECTED TO HSP	Messages are directed to the HSP screen following a Switch-PC-Message request.
PC PRINTER MESSAGES REDIRECTED TO HSP	All messages are directed to the high-speed printer following a Switch-PC-Message request.
PC PRINTER MESSAGES REDIRECTED TO PC	Messages are directed to the PC screen following a Switch-PC-Message request.
PRINT FILE (file name) OPEN FAILED, errno nnnn	Can not open print file (file name). Error number = nnnn.
REPORT NOT ALLOWED BY NON-SUPERVISOR IN F5 ENTRY	A report print is not allowed by non-supervisor.
SMC EXCESSIVE INVALID NETWORK MESSAGES — nn	The SMC has received too many messages containing invalid message headers. nn = number received.
SMC F5 ENTRY MUST INDICATE POSITION TO CLOSE	An SMC sign off must indicate a position to close.
SMC F5 ENTRY MUST INDICATE POSITION TO OPEN	An SMC sign on must indicate a position to open.
SMC n HIGH SPEED PRINTER DOWN	The high-speed printer on SMC nid n is unavailable.
SMC n HIGH SPEED PRINTER UP	The high-speed printer on SMC nid n is available.
SMC n WWVB DOWN	The number of WWVB timeouts exceeds a predefined threshold on SMC nid n.
SMC n WWVB UP	The WWVB is now a functioning unit on SMC nid n.
SMC/PC n PC pc FAILED NETWORK HEARTBEAT	PC number pc (l-6) on SMC nid n has stopped sending heartbeats.
SMC/SP n PC pc ECHO PRINTER DOWN	The echo printer on PC number pc (l-6) on SMC/SP nid n is unavailable.
SMC/SP n PC pc ECHO PRINTER UP	The echo printer on PC number pc (l-6) on SMC/SP nid n is available.
SMC/SP n PC pc PDPC DOWN	The PDPC printer on PC number pc [1-6] on SMC/PC nid n is unavailable.
SMC/SP n PC pc PDPC UP	The PDPC printer on PC number pc [l -6] on SMC/PC nid n is available.

H.12 CONFLICT ALERT MESSAGE

Pertinent program generated Conflict Alert (CA) data are recorded via the SMC. When two aircraft are in conflict, an alarm message is printed out on initial alert and every seven scans thereafter until the alert no longer exists. Initial CA alarm messages are identified by “FIRST” displayed at the end of line 1. CA messages contain the information for aircraft 1 on line 1 and aircraft 2 on line 2.

Printout format is:

Field

1	2	3	4	5	6	7	a
time	nid:	acid1	SEN nn,	x = xxx.xx,	Y = yyy.yy,	Z = aaa	FIRST or A
		acid2	SEN nn,	x = xxx.xx,	Y = yyy.yy,	Z = aaa	ALG = L/M/P/A

where:

Field 1 — Date (mm/dd/yy) and time (hh:mm:ss)

Field 2 — Network ID of the CP chassis generating the message (hex).

Field 3 — Aircraft ID, if associated, or reported beacon code (RBC), if unassociated. 2-7 alphanumerics right-justified.

Field 4 — Sensor of A/C controller.

Field 5 — Aircraft ± X positional coordinate to the nearest hundredth NM.

Field 6 — Aircraft ± Y positional coordinate to the nearest hundredth NM.

Field 7 — Aircraft altitude. Three numerics in hundreds of feet. CST (active track in coast status), XXX (invalid altitude), NAT (no ARTS track), or AMB (ambiguous) is printed if displayed in the FDB.

Field 8 — (First line) “FIRST” when initial CA message, space (A) for subsequent CA message.

(Second line) Alert type. Alpha character(s) indicating detection algorithm source as follows:

- L = Linear (LINCON)
- M = MFMAMS lateral
- P = Proximity (PROCON)
- A = Proximity position angle (pair is converging with a constant angle).

An alpha character is printed for each alert type during the reporting interval.

NOTE

CA messages are not printed for training targets while the system is in live mode.

H.13 OTHER INTERNAL ALARM MESSAGES (CA, RTQC, PM)

Internal Alarm Messages generated by Conflict Alert, RTQC and Performance Monitor functions are shown with a description of the cause of each type. Note: RTQC printouts may be enabled/inhibited by keyboard entry (F7,2,Q,E/I).

Format	Description
PROCESSOR UTILIZATION: nn THRESH-OLD: tt	Processor utilization threshold (tt) CPU_THRE-SHOLD reached (nn).
NETWORK — FRAMES LOST nn THRESH-OLD: tt	Network frames lost threshold (tt), NET-LOST-THD reached (nn).
NETWORK — FRAMES RETRANSMIT-TED: nn THRESHOLD: tt	Network frames retransmitted threshold (tt) NET_RETRAN_THD reached (nn).
CP PERFORMANCE MONITOR AUTO DIS-ABLED	The CP has deactivated all active CP perfor-mance monitors (CTS, CPU, COR, and SUM) because the average one minute CPU utiliza-tion exceeded CPU-UTILTHRESHOLD.
TP PERFORMANCE MONITOR AUTO DIS-ABLED	The TP has deactivated all active TP perfor-mance monitors (RTR, CPU, COR, SUM, and BROPM) because the average one minute uti-lization exceeded CPU_UTIL_THRESHOLD.
LEGEND: nn = actual number received tt = acceptable number	

H.14 CRDA ALARM MESSAGES

Internal alarm messages generated by the Converging Runway Display Aid (CRDA) function are presented. Since Ghost Data Files (GDFs) are maintained by each display, more than one display may output the same message (display is identified by NID number).

Format	Description
CRDA GDF OVERFLOW	Ghost Data File is full.
xxx CRDA: MAXIMUM NUMBER OF GHOSTS DISPLAYED	Ghost data block display count exceeds maximum ghost data block display count.

H.15 TRACK AMPLIFY PRINTOUT

A printout of data for a specific track can be requested by keyboard entry (F7,Z; see NAS-MD-638). Data printed includes: DP FDF DATA, DP GDF DATA, CP FDF DATA, CP GDF DATA, CP CADF DATA with SYSTEM TRACK number, DP ADF DATA, CP ADF DATA, and TP ADF DATA, for each sensor. Data items are identified as offset data based on track number. The Amplify print format consists of a single fixed section of FDF, GDF, and CADF data followed by ADF data for all tracks linked to the aircraft:

mm/dd/yy hh:mm:ss DPnid, CPnid, TPnid AMPLIFY DATA FROM DISPLAY: ddd

DP FDF DATA: (Printed for associated tracks only)
OFFSET DATA:
(Data printed in hex words)

DP GDF DATA: (Printed for ghost tracks only)
OFFSET DATA:
(Data printed in hex words)

CP FDF DATA: (Printed for associated tracks only)
OFFSET DATA:
(Data printed in hex words)

CP GDF DATA: (Printed for ghost tracks only)
OFFSET DATA:
(Data printed in hex words)

CP CADF DATA SYSTEM TRACK: tttt
OFFSET DATA:
(Data printed in hex words)

BCIDT — xxxx ECIDT — xxxx TCIDT — xxxx

AMPLIFY DATA TRACK: nn ON SENSOR: ss

DP ADF DATA:
OFFSET DATA:
(Data printed in hex words)

CP ADF DATA:
OFFSET DATA:
(Data printed in hex words)

TP ADF DATA:
OFFSET DATA:
(Data printed in hex words)

This is repeated for each sensor track.

where:

nn	=	sensor track number
ddd	=	display number from where print request was made
ss	=	sensor number of track
tttt	=	system track number
BCIDT	=	beacon code computer ID table
ECIDT	=	En route computer ID table
TCIDT	=	Terminal computer ID table
xxxx	=	four character table index

H.16 MINIMUM SAFE ALTITUDE WARNING (MSAW) ALERT PRINTOUT

When an MSAW alert is initially detected, an LA (low altitude) message is forwarded to the SMC. The message continues to be forwarded every 30 seconds until the alert ceases. The format of the MSAW alert printout is:

Field 1	2	3	4	5	6	7	8
(time)	LA	acid	sensor	X = xxx.xx Y = yyy.yy	Z = zzz	FIRST	alert-type

where:

Field 1 = Date (mm/dd/yy) and time (hh:mm:ss).
Field 2 = "LA" (low altitude)
Field 3 = Aircraft ID
Field 4 = Sensor number of aircraft controller
Field 5 = System coordinates of aircraft (to the nearest l/l 00th NM)
Field 6 = Current smoothed altitude (in feet)
Field 7 = "FIRST" if first alert for aircraft, blank for subsequent printouts.
Field 8 = Alert type defines the type of alert generated:

GTW CUR: General terrain, current position
GTW PRE: General terrain, predicted position
GTW PRO: General terrain, projected position
APP CUR: Approach monitor, current position
APP PRE: Approach monitor, predicted position

H.17 TRAFFIC MANAGEMENT SYSTEM (TMS) PRINTOUTS

The following TMS printouts are described:

- TMS status report
- TMS parameter changes
- TMS error message recordings.

Format	Description
TMS BAUD RATE nnnnn	Recording of the SMC keyboard entry which changed the baud rate for ARTS/TMS communications. nnnnn = new baud rate in bits/second (SMS: F2,A,Bnnnnn).
TMS DATA MESSAGE NOT RECEIVED AFTER 3 ATTEMPTS text	Did not receive a DA message to a pending TZ (either after no response or after 3 DRs to the TZ). text = message text of the TZ.
TMS DISCARDED MESSAGE text	Recording of a TMS message received by ARTS that did not satisfy validity checks. text = discarded message.
TMS sk ENABLE	TMS TZ message transmission enabled. s = subtest, k = keyboard
TMS sk INHIBIT	TMS TZ message transmission inhibited. s = subtest, k = keyboard
TMS INCORRECT DA MESSAGE: RECEIVED nnn EXPECTED mmm	Received Data Acknowledge for message number nnn while expecting a DA for message number mmm.
TMS INPUT ERROR COUNT THRESHOLD EXCEEDED	Track management system performance message indicating the number of errors that have occurred during reception of TMS messages has exceeded a given threshold during the previous one minute interval.
TMS INTERFACE DOWN	TMS is now not operational.
TMS INTERFACE UP	TMS is now operational.
TMS OUTPUT ERROR COUNT THRESHOLD EXCEEDED	Track management system performance message indicating the number of errors that have occurred during sending of TMS messages has exceeded a given threshold during the previous one minute interval.
TMS PORT OPEN FAIL	Status returned for open attempt indicates invalid baud rate for ARTS/TMS communications.
TMS PORT OPEN SUCCESS	An attempt to open the TMS port has succeeded

Format	Description
TMS TRACK COUNT nnn	nnn = number of tracks currently eligible to have TZ messages sent to TMS. Printed each 5 minutes.
TMS TZ TIME INTERVAL nn	Recording of the SMC keyboard entry which changed the time interval between transmitting groups of TZ messages. nn = new interval in seconds (SMS: F2,A,Tnn).
TMS UNEXPECTED DA MESSAGE: RECEIVED nnn	Received Data Acknowledge but no pending TZ message waiting for a DA. nnn = message number.
TMS UNEXPECTED DR MESSAGE: RECEIVED nnn	Received Data Reject but no pending TZ message waiting for a DT. nnn = message number.
TMS UNEXPECTED DT MESSAGE: RECEIVED nnn	Received Data Test but no pending TR message waiting for a DT. nnn = message number.

H.18 MAINTENANCE SOFTWARE MESSAGES

These messages provide information on the maintenance software generated error and status messages.

Format	Description
Can't create raw socket	An error was returned from the operating system on the socket call to establish an ARPA Internet address connection. The error could be caused if the user is not a superuser.
Can't create unblocking socket	An error was returned from the operating system on the fcntl call to create an unblocking socket.
Can't Start — LAN Test is active	A MAINT Keyboard Start message was received and the LAN Test has already been started.
Can't start — Sensor Test is active	The Sensor Test received a command to start and the test is already running.
Can't stop — LAN Test not active	A MAI NT Keyboard Stop message was received but the LAN Test is not running.
Can't stop — Sensor Test not active	A MAINT Keyboard Stop message was received and the Sensor Test was not running.
Disk Confidence Started	The Disk Confidence Test has been started.
Disk Test Completed	The Disk Read Defect Data Test has completed.
Disk Test Completed, Resetting Chassis	The Internal Disk Diagnostic Test has completed.
Disk Test Completed, Resetting Chassis	The Disk Format Test has completed.
Disk Test Completed, Resetting Chassis	The Disk Confidence Test has completed.
Disk Test Starting, Resetting Chassis	The Disk Test is going to reset the chassis to run the Internal Disk Diagnostic, Disk Confidence, or Format Disk test.
Disk Test Terminated	The Disk Test has stopped because either a MAINT Keyboard Stop message was received or a Chassis Reset message was received.
Format Disk Started	The Disk Format Test has been started.
Internal Disk Diagnostic Started	The Internal Disk Diagnostic Test has been started.
Invalid MAINT	The MAINT parameter for the Sensor Test was equal to zero.
invalid Sensor Test Parameter	The Sensor Test detected an invalid parameter for either the sensor type, sensor interface type, or sensor ID.
Invalid Test Selection Number	The Serial Loopback Test has received an invalid test type selection.

Format	Description
IP Address not set up in site data	The IP address in site data is not valid (zero).
LAN Test initiated	The LAN Test is starting to send the echo test messages.
LAN Test stopped	The LAN Test has completed.
LAN Test stopped by Operator	A MAINT Keyboard Stop message was received causing the LAN Test to stop.
LAN Test stopped by Terminate Test Message	A Terminate Test message was received causing the LAN Test to stop.
MAINT Async Mode Test Task Started	The Asynchronous Test was selected and is being started.
MAINT Disk Test Task Activated	The Disk Test Initialization Task has been started in the chassis.
MAINT LAN Test Task Activated	The LAN Test Initialization Task has been started in the chassis.
MAINT on chassis type = x has no meaning	The chassis type found in the adaptation data is not valid. x = chassis type number
MAINT RTDT Test Task Started	The Remote Tower Display Test Initialization Task has been started in the chassis.
MAINT Sensor Test Activated on node = xx	The Sensor Test will be started on the node specified by xx, in decimal.
MAINT Sensor Test Initiated	The Sensor Test Parameters have been verified and the test is being started.
MAINT Sensor Test Terminated	A MAINT Keyboard Stop message was received and the Sensor Test has been stopped.
MAINT Serial Channel Loopback Test Task Activated	The Serial Channel Loopback Test Task has been started in the chassis.
MAINT Sync Mode Test Task Started	The Synchronous Test was selected and is being started.
MAINT Sync/Async Mode Test Task Terminated	The Serial Loopback Test had been completed.
RDBM Initialization Failed. RTDT Test Stopped	The RDBM Initialization Task (OER_RINI) failed to start the Remote Tower Display Test.
Read Defect Data Started	The Disk Read Defect Data Test has been started.

Format	Description
RTDT Test Started	The Remote Tower Display Test has started.
RTDT Test Terminated	An attempt to open a serial channel to the RDBM failed.
SCAN 'Alarm List'	The Sensor Test operator entered the command (AL HP) to print the Alarm List or entered the command (SD HP) to print all statistical data. The Alarm List is illustrated in the Computer System Diagnostic Manual (CSDM) ATC 61098.
SCAN 'Error Report'	The Sensor Test operator entered the command (QU HP) to print the Error Report or entered the command (SD HP) to print all statistical data. The Error Report is illustrated in the Computer System Diagnostic Manual (CSDM) ATC 61098.
SCAN 'Quality Table'	The Sensor Test operator entered the command (QU HP) to print the Quality Table or entered the command (SD HP) to print all statistical data. The Quality Table is illustrated in the Computer System Diagnostic Manual (CSDM) ATC 61098.
SCAN 'Report Data'	The Sensor Test operator entered the command (QU HP) to print the Report Data or entered the command (SD HP) to print all statistical data. The Report Data is illustrated in the Computer System Diagnostic Manual (CSDM) ATC 61098.
SCAN 'Sector Marks'	The Sensor Test operator entered the command (QU HP) to print the Sector Marks or entered the command (SD HP) to print all statistical data. The Sector Marks is illustrated in the Computer System Diagnostic Manual (CSDM) ATC 61098.
SCAN 'Sensor Message Table'	The Sensor Test operator entered the command (QU HP) to print the Sensor Message Table or entered the command (SD HP) to print all statistical data. The Sensor Message Table is illustrated in the Computer System Diagnostic Manual (CSDM) ATC 61098.
SCAN 'Target Tally'	The Sensor Test operator entered the command (QU HP) to print the Target Tally or entered the command (SD HP) to print all statistical data. The Target Tally is illustrated in the Computer System Diagnostic Manual (CSDM) ATC 61098.

Format	Description
SCAN 'Validity Table'	The Sensor Test operator entered the command (QU HP) to print the Validity Table or entered the command (SD HP) to print all statistical data. The Validity Table is illustrated in the Computer System Diagnostic Manual (CSDM) ATC 61098.
Serial channel loopback test starting	The Serial Loopback Test is going to run a serial channel test. No reset is required because the chassis is in the maintenance mode from a previous reset.
Serial channel loopback test starting, resetting chassis	The Serial Loopback Test is going to reset the chassis to get into the maintenance mode in order to run a serial channel test.
Starting LAN Test on NID = xx IP addr. = xxxxxxxx	The LAN Test is starting. It is executing on node xx, in decimal and it's IP socket address is xxxxxxxx, in hex.
Starting MAINT on chassis type = x	The MAINT_DNIP tasks for the chassis type indicated are being started. x = chassis type number
Starting MAINT on chassis type = x	The MAINT_DNIP_BIG tasks for the chassis type indicated are being started. x = chassis type number
Starting MAINT on chassis type = x	The MAINT-EDP tasks for the chassis type indicated are being started. x = chassis type number
Starting MAINT on node ID = xx	The MAINT_EDP tasks are being started on the node specified by xx, in decimal.
Starting MAINT on node ID = xx	The MAINT_DNIP BIG tasks are being started on the node specified by xx, in decimal.
Starting MAINT on node ID = xx	The MAINT-DNIP tasks are being started on the node specified by xx, in decimal.
Stop Message Received. RTDT Test Stopped	The Remote Tower Display Test has stopped because a MAINT Keyboard Stop message was received.
Unknown Protocol: icmp	The operating system does not support the icmp protocol.

H.19 REPLAY MESSAGES

These messages provide information on the error and status messages generated during REPLAY operation.

Format	Description
CDR DISKS ARE NOT ACCESSIBLE: REPLAY INACTIVE	Could not open the history, status, or data files.
FROM DISPLAY n TO DISPLAY d BAD SRC NID	The src nid n with display d is bad.
FROM DISPLAY n TO DISPLAY d INVALID DISPLAY	A selected display d src nid n is invalid.
FROM DISPLAY n TO DISPLAY d IS DOWN	A selected display d src nid n is down.
INVALID SELECTED-DISK FIELD	An invalid disk number was selected.
REPLAY ALREADY IN PROGRESS; CANNOT BE INITIATED	The command to initiate REPLAY was out of sequence.
REPLAY ERROR	Invalid message code received during REPLAY.
REPLAY INITIATED	REPLAY has been started.
REPLAY MESSAGE ERROR, REPLAY INACTIVE	The replay message received from the PC was in error.
REPLAY SENDER REACHED END OF FILE	REPLAY has reached the end of the input file.
REPLAY STOPPED	Message received from PC is to stop REPLAY.
REPLAY TERMINATED	REPLAY has been terminated.
REPLAY TIME NOT ON DISK n	The time selected for REPLAY was not on disk n.
RETRACK RUNNING SLOW	REPLAY is running slow.

H.20 RETRACK MESSAGES

These messages provide information on the error and status messages generated during RETRACK operation.

Format	Description
CDR DISKS ARE NOT ACCESSIBLE: RETRACK INACTIVE	Could not open the history, status, or data files.
CP INIT, CONTINUE WAITING FOR INIT	CP is not ready for initialization data.
CP INIT, GO ACTIVE	CP is ready for initialization data.
CP RETRACK SYNCH NOT RECEIVED	CP has not responded in the time period allowed.
DISK ERROR - CHECK DRIVE d	There is a disk error on optical disk drive d.
INVALID SELECTED-DISK FIELD	An invalid disk number was selected.
RETRACK ACTIVE	REPLAY has been initialized and is active.
RETRACK ALREADY IN PROGRESS; CANNOT BE INITIATED	The command to initiate RETRACK was out of sequence.
RETRACK ERROR	Invalid message code received during RETRACK.
RETRACK INITIATED	RETRACK has been started.
RETRACK MESSAGE ERROR, RETRACK INACTIVE	The RETRACK message is in error. RETRACK will go inactive.
RETRACK NOT ALLOWED ON NON-OFFLINE SMON	Can not run RETRACK with an SMON which is not off-line.
RETRACK STOPPED	The RETRACK stop command was received. RETRACK will be stopped.
RETRACK SYNCH LOST, GOING INACTIVE	CP or TP responses have timed out. RETRACK will go inactive.
RETRACK TERMINATED	RETRACK has been terminated.
RETRACK TIME NOT ON DISK n	The time selected for RETRACK was not on disk n.
TP INIT, CONTINUE WAITING FOR INIT	TP is not ready for initialization data.
TP INIT, GO ACTIVE	TP is ready for initialization data.
TP RETRACK SYNCH NOT RECEIVED	TP has not responded in the time period allowed.

H.21 FAST STATUS/ERROR MESSAGES

There are three types of messages that provide FAST status. One message provides for the status of the FAST subsystem, another provides for the detection of heartbeat failures and the remaining messages relate to error conditions generated by FAST.

Format	Description
(TIME) (NID) (chassis-name) FAST AVAILABLE	FAST is connected to ADAR and ADAR is connected to the CTIS.
(TIME) (NID) (chassis-name) FAST NOT AVAILABLE	The CTIS is in idle state (ADAR is not connected).
(TIME) (NID) (chassis-name) ADAR INTERFACE FAILED. NO ADAR HB	CTIS detected ADAR failure.
(TIME) (NID) (chassis-name) FAST AUTO INHIBITED NO CP HB	CP failure detected by CTIS.
(TIME) (NID) (chassis-name) FAST AUTO INHIBITED NO TP HB	TP failure detected by CTIS.
(TIME) (NID)CTAS/FAST ERR: INV TRK IN FAST ADVISORY MSG	Invalid track ID in FAST advisory message.
(TIME) (NID) (chassis-name) UNEXPECTED ADAR MESSAGE, CODE = XXXX	Invalid message received from ADAR.
(TIME) (NID) CTIS -ADAPTATION ERROR *** NO CTISs FOUND	No CTIS processes defined for a chassis in the Adaptation Data.
(TIME) (NID) CTIS, DISCARDING KYBD MSG, NOT FUNC 16	CTIS received a Controller Keyboard message from CP to process a function code not equal to 16 (i.e., a non-FAST entry).
(TIME) (NID) (chassis-name) ANOTHER CTIS GOING ACTIVE, REQUEST STANDBY STATE	Another CTIS has requested the active state. So, this CTIS process, which is currently active, requests a switch to the standby state.
(TIME) (NID) (chassis-name) INVALID SMC HEARTBEAT MESSAGE FIELD: YEAR XXXX	Heartbeat received from SMC with invalid year.
(TIME) (NID) (chassis-name) INVALID SMC HEARTBEAT MESSAGE FIELD: DAY XXX	Heartbeat received from SMC with invalid day of year.
(TIME) (NID) (chassis-name) INVALID SMC HEARTBEAT MESSAGE FIELD: TIME XXXXXXXX	Heartbeat received from SMC with invalid system time.
(TIME) (NID) AGW CONNECTION TO ADAR FAILED	The message queue for sending messages to ADAR has filled. Therefore, the connection is terminated.

H.22 DEBUG MESSAGES

These messages provide information on the error messages generated when the DEBUG message class has been activated.

Format	Description
ADF TO BE INITIALIZED IS NOT UNUSED	The ADF to be initialized is not unused,
AT DISK ERROR: dd	Error detected while reading disk for Automatic Tab Set dd.
ATDISK REACHED ILLOGICAL POINT	Automatic tab set command function in message is illogical (not initialization, read or write).
Bad function code in msg0080, func = f	A bad function was received in the profiling massage (f = function value).
Bad setvbuf return	A bad return of setbvuf.
BROPM-UPDATE-MSG: INVALID FIRST SENSOR NUMBER	First sensor number not adapted.
BROPM-UPDATE-MSG: INVALID LAST SENSOR NUMBER	Last sensor number not adapted.
CADF CAPACITY < 80%	CA data file is less than 80% used.
CADF CAPACITY > 85%	CA data file is over 85% used.
CADF OVERFLOW	CA data file is full.
CANNOT MOUNT FLOPPY: text	Execute System Command Response msg with corresponding text.
cc: CURRENT CPU LOAD pp PERCENT, MAX mm PERCENT	Performance monitor report of the processor utilization of a chassis (cc = chassis name, pp = current load, mm = maximum load)
CDE-MDUMP - File Error	A file error in CDE-MDUMP.
CDR system neither ARTS-II nor ARTS-III	CDR system is neither ARTS II nor ARTS III.
CFGn sk aaa...	Configuration printout requested for n (1 = keyboards, 2 = entry/exit fixes, aaa = text configuration numbers) (F7,C,P).
CHASSIS-STATE-CHANGE-MSG: ILLEGAL NEW STATE dd	The Chassis State Change msg contains an illegal new state dd.
CHASSIS-STATE-CHANGE-MSG: ILLEGAL NID n	The Chassis State Change msg contains an illegal NID n.
CHASSIS-STATE-CHANGE-MSG: ILLEGAL OLD STATE dd	The Chassis State Change msg contains an illegal old state dd.
CHASSIS-STATE-CHANGE-MSG: ILLEGAL REASON rr	The Chassis State Change msg contains an illegal reason rr.

Format	Description
CNTBL OVERFLOW	A CA was found. There is no corresponding entry in the conflict table, and the table is full.
CONTROLLER-KEYBOARD-MSG: INVALID FUNCTION NUMBER	The Controller Keyboard Message contains an invalid function number
CONTROLLER-KEYBOARD-MSG: INVALID NID NUMBER n	The Controller Keyboard Message contains an invalid source nid number n
CONTROLLER-KEYBOARD-MSG: INVALID NUMBER OF PREVIEW CHARS	Too many preview characters in the controller keyboard message
CONTROLLER-KEYBOARD-MSG: INVALID SENSOR NUMBER	The sensor number in the controller keyboard message is not adapted.
CONTROLLER-KEYBOARD-RESPONSE-MSG: INVALID NUMBER OF PREVIEW CHARS	Too many preview characters in the Controller Keyboard Response Message
CORRELATION TIME PROBLEM: n TP = dd, CP = dd\n	Correlation time problem.
CP%d IS ACTIVE. CP%d REQUESTING STANDBY	CP requesting demotion to Standby state because it believes another CP is also active
CP%d REQUESTING IDLE TO STANDBY PROMOTION	CP requesting Standby stat during startup
CP-STATUS-CHANGE-MSG: INVALID ZONE STATUS	The CP Status Change Msg contains an invalid zone status.
CPS IGNORING TRK NUM RESP. SENSOR dd. TRACK dd. IN USE	TPS has responded to a Track Number Request with a track that is already in use.
CPU Profiling data written	The CPU profiling data has been written successfully.
dd Rx Maxframes errors	dd = Number of Maxframe errors [messages re-synching], reported by VCOM-54
dd Rx no buffers available	dd = Number of instances when no buffers were available, reported from VCOM-54
dd Rx overruns	dd = Number of inter-facility message overruns reported from VCOM-54
Debug variable ns_debug is at address: aa	Address of the test debug variable (aa = address).
DP- SYSTEM- STATUS- REPORT- MSG: INVALID DISPLAY NUMBER	The DP System Status Report Msg contains an invalid display number.
DP-SYSTEM-STATUS-REPORT-MSG: INVALID NUMBER IN MESSAGE	The DP System Status Report Msg contains an invalid number in message.
DPSFMA DATA BLOCK UPDATE MSG: ILLEGAL DATA BLOCK LINE LENGTH	The DPSFMA Data Block Update Message contains an Illegal data block line length.

Format	Description
DPSFMA DATA BLOCK UPDATE MSG: ILLEGAL LEADER CHANGE STATUS	The DPSFMA Data Block Update Message contains an illegal leader change status.
DPSFMA DATA BLOCK UPDATE MSG: ILLEGAL TRACK NUMBER	The DPSFMA Data Block Update Message contains an illegal track number.
DPSFMA DATA BLOCK UPDATE MSG: ILLEGAL TRACK STATUS	The DPSFMA Data Block Update Message contains an illegal track status.
ERROR CREATING INVERSE XFORM MATRIX	World-to-window inverse transformation matrix does not exist.
ERROR: Attempting to stop profiling when it was not started	The profiling function cannot be terminated, because it was not started.
ERROR: profiling already running	Profiling was already running and cannot be started again.
Failed to received statuses for all requested chassis	Program timed out before receiving status from all chassis to be downloaded
IFC 0 length message	A “zero” length inter-facility message was received from the VCOM-54
IFC Status:dd, Type:dd, port-status	A “getmsg” call for inter-facility messages failed, and returned the given information
ILLEGAL FUNCTION SELECTED IN SMC KEYBOARD ENTRY	A 2 character keyboard function code was not recognized.
INVALID ACTIVE TRACK MAINTENANCE MSG FIELD: SENSOR NUMBER	Active Track Maintenance msg has invalid sensor number field.
INVALID ACTIVE TRACK MAINTENANCE MSG FIELD: TRACK NUMBER	Active Track Maintenance msg has invalid track number field.
INVALID ARSR WEATHER MESSAGE FIELD: AZIMUTH	ARSR Weather Msg has invalid azimuth.
INVALID ARSR WEATHER MESSAGE FIELD: SENSOR NUMBER	ARSR Weather Msg has invalid sensor number field.
INVALID ARSR WEATHER MESSAGE FIELD: WEATHER TYPE	ARSR Weather Msg has invalid weather type field.
INVALID ASR9 WEATHER MESSAGE FIELD: SENSOR NUMBER	ASR9 Weather Msg has invalid sensor number field.
INVALID ASSIGN TAB LINE ID MESSAGE FIELD: CONTROLLER	Assign Tab Line ID msg has invalid controller field.
INVALID ASSIGN TAB LINE ID MESSAGE FIELD: FDF NUMBER	Assign Tab Line ID msg has invalid FDF number field.
INVALID ASSIGN TAB LINE ID MESSAGE FIELD: TAB LINE ID	Assign Tab Line ID msg has invalid tab line id field.

Format	Description
INVALID ASSIGN TAB LINE ID MESSAGE FIELD: NR. LINE IDS	Assign Tab Line ID msg has invalid number of line IDs field
INVALID BEACON REPORT MESSAGE FIELD: SENSOR NUMBER nn	Beacon Report message invalid sensor number nn
INVALID CONTROLLER KEYBOARD MESSAGE FIELD: 1ST TBALL PERIOD LOC cc	Controller keyboard message invalid trackball location, character position = cc.
INVALID CONTROLLER KEYBOARD MESSAGE FIELD: KEYBOARD NUMBER kk	Controller keyboard message invalid keyboard number = kk.
INVALID CONTROLLER KEYBOARD MESSAGE FIELD: NBR OF PREVIEW CHARS pp	Controller keyboard message invalid # of preview chars = pp.
INVALID CONTROLLER KEYBOARD MESSAGE FIELD: SENSOR NUMBER nn	Controller keyboard message invalid sensor number = nn.
INVALID CONTROLLER KEYBOARD MESSAGE FIELD: 1ST TBALL PERIOD LOC	1st track ball period location in Controller Keyboard msg is invalid.
INVALID CONTROLLER KEYBOARD MESSAGE FIELD: FUNCTION NUMBER	Function number in Controller Keyboard msg is invalid.
INVALID CONTROLLER KEYBOARD MESSAGE FIELD: ILLEGAL NID NUMBER	Illegal NID number in Controller Keyboard msg is invalid.
INVALID CONTROLLER KEYBOARD MESSAGE FIELD: KEYBOARD NUMBER	Keyboard number in Controller Keyboard msg is invalid.
INVALID CONTROLLER KEYBOARD MESSAGE FIELD: NBR OF PREVIEW CHARS	Number of preview characters in Controller Keyboard msg is invalid.
INVALID CONTROLLER KEYBOARD MESSAGE FIELD: PREVIEW FUNCTION	Preview function in Controller Keyboard msg is invalid.
INVALID CONTROLLER KEYBOARD MESSAGE FIELD: SENSOR NUMBER	Sensor number in Controller Keyboard msg is invalid.
INVALID CONTROLLER KEYBOARD MESSAGE FIELD: TRACK NUMBER	Track number in Controller Keyboard msg is invalid.
INVALID CP HEARTBEAT MESSAGE FIELD: ILLEGAL NID NUMBER xxx	CP heartbeat message has illegal NID number xxx.
INVALID CP HEARTBEAT MESSAGE FIELD: ILLEGAL NID NUMBER xxx	CP heartbeat message has an illegal NID number xxx (hex).
INVALID DELETE TRACK MSG FIELD: SENSOR NUMBER	Delete Track msg has invalid sensor number field.

Format	Description
INVALID DELETE TRACK MSG FIELD: TRACK NUMBER	Delete Track msg has invalid track number field.
INVALID DP CRITICAL DATA MESSAGE FIELD: ATIS/GSI NUMBER	DP Critical Data msg has invalid ATIS/GSI number field.
INVALID DP CRITICAL DATA MESSAGE FIELD: SRC DISPLAY: dd	DP Critical Data msg has invalid source display field, display dd.
INVALID DP CRITICAL DATA MESSAGE FIELD: LDB FILTER LIMITS	DP Critical Data msg has invalid LDB filter limits field.
INVALID DP CRITICAL DATA MESSAGE FIELD: PDB FILTER LIMITS	DP Critical Data msg has invalid PDB filter limits field.
INVALID DP HEARTBEAT MESSAGE FIELD: FLIGHT PLAN NUMBER	DP Heartbeat msg has invalid flight plan number field.
INVALID DP HEARTBEAT MESSAGE FIELD: ILLEGAL NID NUMBER xx	DP Heartbeat msg has invalid nid number (xx) field.
INVALID DP HEARTBEAT MESSAGE FIELD: ILLEGAL TRACK NUMBER	DP Heartbeat msg has invalid track number field.
INVALID DP HEARTBEAT MESSAGE FIELD: ILLEGAL NID NUMBER xxx	DP heartbeat message has an illegal NID number xxx (hex).
INVALID DP HEARTBEAT MESSAGE FIELD: INVALID TRACK NUMBER ttt	DP heartbeat message has an invalid track number ttt.
INVALID DP HEARTBEAT MESSAGE FIELD: TRACK NUMBER ttt SENSOR nn	DP heartbeat message has an invalid track number ttt from sensor nn.
INVALID DP HEARTBEAT MESSAGE FIELD: SENSOR NUMBER nn	DP heartbeat message has an invalid sensor number nn.
INVALID DP INITIALIZATION RESPONSE MSG FIELD: DISPLAY NUMBER	DP Initialization Response message from DP indicated illegal display number.
INVALID ETG TARGET NUMBER DATA MSG FIELD: SENSOR NUMBER	ETG Target Number Data msg has invalid sensor number field.
INVALID RADAR REPORT MESSAGE FIELD: SENSOR NUMBER nn	Radar Report message invalid sensor number nn
INVALID REGION COUNT REQUEST FIELD: REQUESTING DISPLAY	Invalid Field in msg0050
INVALID REGION NAME REQUEST FIELD: NUMBER OF LINES	Invalid Field in msg0050
INVALID REGION NAME REQUEST FIELD: NUMBER OF REGIONS	Invalid Field in msg0050
INVALID REGION NAME REQUEST FIELD: REGION DISPLAY	Invalid Field in msg0050

Format	Description
INVALID REGION NAME REQUEST FIELD: REGION ID INDEX	Invalid Field in msg0050
INVALID REGION NAME REQUEST FIELD: REGION TYPE INDEX	Invalid Field in msg0050
INVALID REGION NAME REQUEST FIELD: REQUESTING DISPLAY	Invalid Field in msg0050
INVALID REGION NAME REQUEST FIELD: SCROLL INDEX	Invalid Field in msg0050
INVALID SIFS HEARTBEAT MESSAGE FIELD: NID = XX ILLEGAL SENSOR/PATH NUMBER	SIFS heartbeat message, received from NID XX, identifies an unadapted sensor or a path could not be found.
INVALID SMC HEARTBEAT MESSAGE FIELD: DAY ddd	SMC heartbeat msg has invalid day field ddd.
INVALID SMC HEARTBEAT MESSAGE FIELD: TIME tttttttt	SMC heartbeat msg has invalid time field tttttttt.
INVALID SMC HEARTBEAT MESSAGE FIELD: YEAR vvvv	SMC heartbeat msg has invalid year field yyyy.
INVALID TP HEARTBEAT MESSAGE FIELD: ILLEGAL NID NUMBER xx	TP Heartbeat msg has invalid nid number (xx) field.
INVALID TRACK NUMBER RESPONSE MESSAGE FIELD: FDF NUMBER	Track Number Response msg has invalid FDF number field.
INVALID TRACK NUMBER RESPONSE MESSAGE FIELD: SENSOR NUMBER	Track Number Response msg has invalid sensor number field.
INVALID TRACK NUMBER RESPONSE MESSAGE FIELD: TRACK NUMBER	Track Number Response msg has invalid track number field.
INVALID VARIABLE MAP MESSAGE FIELD: AZIMUTH	ARSR CD2 Variable Weather Msg has invalid azimuth.
INVALID VARIABLE MAP MESSAGE: AZIMUTH aa IN ZONE zz	ARSR CD2 Variable Weather Msg has invalid azimuth (aa) for the given zone (zz).
INVALID VARIABLE MAP MESSAGE FIELD: WEATHER TYPE	ARSR CD2 Variable Weather Msg has invalid weather type field.
INVALID VARIABLE MAP MESSAGE: RANGES rr rr NOT IN SAME ZONE	ARSR CD2 Variable Weather Msg has start range (rr) and end range (rr) are not in the same weather zone.
INVALID VARIABLE MAP MESSAGE FIELD: SENSOR NUMBER	ARSR CD2 Variable Weather Msg has invalid sensor number field.
Kernel Profiling data written	The kernel profiling data has been written successfully.

Format	Description
Log file Already Closed - request ignored	The logging function was already closed so the reauest was ianored.
Log File Closed	The log file is closed.
Log file f opened for target sss	A log file has been opened (f = filename, sss = program).
Logging Started	The logging function has been started.
Logging Stopped	The logging function has been terminated.
Logging Was Already Off - request ignored	The logging function was already stopped so the request was ignored.
Logging Was Already Running - request ignored	The logging function was already running so the request was ignored.
MAP-REQUEST-MSG: INVALID MAP SET NUMBER	Map request message contains an invalid map set number.
MAP-REQUEST-MSG: INVALID SENSOR NUMBER	Map request message contains an invalid sensor number.
No memory for CDE-MDUMP	No memory for CDE-MDUMP.
NO OTHER IS ACTIVE. CP%d REQUESTING ACTIVE.	CP requesting Active state because it believes no other CP is active
No profiling support in kernel or error d, errno k	An error occurred when no profiling support in kernel (d = error, k = errno value)
NO SPACE FOR DPSFMA HEARTBEAT FROM NID nid	An error occurred because no space for DPSFMA Heartbeat from NID.
Number of active tracks in sensor nn = ttt	Number of active tracks is ttt in sensor nn
Rcv'd Application msg from NID n for invalid (or full) queue: qqqq	An application message was received for a queue that is not valid (n = node, qqqq = queue name).
Rcv'd Application msg from NID n for invalid queue: qqqq	An application message was received for a queue that is not valid (n = node, qqqq = queue name).
Rcv'd Resequence from NID n for non-existent queue: qqqq	A resequence message was received for a queue that is not valid (n = node, qqqq = queue name).
Rcv'd Retransmit from NID n for non-existent R_BCST queue: qqqq	A retransmit message was received for a queue that is not valid (n = node, qqqq = queue name).
Received bad network message from a - invalid total message length of I	Message length I received from a over network does not agree with length in message.

Format	Description
Received unexpected message - message code c, length I, buf_len bl	Message received of buffer length bl was less than that in message of code c length I.
Recovered protocol - queue: qqqq	Messages were lost, but the protocol recovery was successful.
RETRACK MESSAGE TO KB:dd NID: xx. SUPPRESSED	A RETRACK Controller Keyboard Msg has been ignored because the source keyboard is not available.
RGW NETWORK - Received Application msg for queue: qqqq from invalid NID nn	Received message on the RGW LAN from an invalid NID.
RGW NETWORK - Received Application msg from NID %d for invalid queue: %.4s	Received message on the RGW LAN for an invalid multi-queue.
SCEN ABORT. CMD DISP:dd. MAP DISP: dd.	Scenario aborted because system in training mode and display corresponding to a scenario card is not in training.
SCEN ABORT. DISP:dd. MAP DISP: dd. KYBD: d.	Scenario has aborted due to displays with unequal number of keyboards have been mapped.
SCEN ABORT. NON-ADAPTED CID: sk	Scenario has aborted due to invalid Controller ID.
SCEN END. EOF OR READ ERROR	Scenario has completed but to end of file or read error.
SCENARIO MESSAGE TO KB:sk NID:dd. SUPPRESSED	A scenario card has been ignored because the source keyboard is not available
SCM-TMHB, Timeout Heartbeat Index Error	The source of the heartbeat can not be identified
SENSOR (nn) TG: SECTOR MARK MSG RECEIVED WAS OUT OF ORDER	The sector number in this sector mark msg for sensor nn was out of order.
SENSOR (sss) PORT d: CLOSE FAILED: ERRNO e	Sensor sss port number d has failed the second IOCTL attempt to close the port, e is the error number returned from the IOCTL.
SENSOR (sss) PORT d: I-CLOSE IOCTL FAILED: ERRNO e	Sensor sss port number d has failed the first IOCTL attempt to close the port, e is the error number returned from the IOCTL.
SENSOR nn EXP. SECTOR ee NEW SECTOR ss	For sensor nn, the new sector # received (ss) was not equal to the expected sector # (ee)

Format	Description
Snn ST sssss AT aaa TT ttt BT bbb RB rrr UR uuu CR ccc	Scan data for sensor nn: ST=Scan Time=sssss, AT=# of ATFs=aaa, TT=# of TTFs=ttt, BT=# of Beacon Only Targets=bbb, RB=# of Radar Reinforced Targets=rrr, UR=# of Uncorrelated Radar Only Targets=uuu, CR=# of Correlated Radar Only Targets=ccc
sss:i profiling started	Profiling has started for a program (sss = program, i = instance).
SUBSYS-REPORT-REQUEST-MSG: ILLEGAL SUBSYSTEM ID n	The Subsys Report Request msg contains an illegal subsystem ID n.
SXnn: AVSB=aa MXSB=mm AVDT=ttt MXDT=xxx AVET=yyy.yy MXET =vvv	Tracking statistics for sensor nn: Average (aa) and Maximum (mm) values for Sectors Behind, Average (ttt) and Maximum (xxx) Times Between Executions, Average (yyy.yy) and Maximum (yyy) Execution Times - all times in milliseconds
TG received DP heartbeat with display number	Received DP heartbeat with display number.
TP n CHASSIS STATE CHANGE MSG. INVALID NEW STATE: s	The Chassis State Change msg processed by this TP (n is the TP chassis number) has an invalid chassis state value = s.
TP%d DOWN > 50 SECONDS. CPS REQUESTING STANDBY	CP requesting demotion to Standby state because there has been no active TP for 50 seconds
Unable to malloc n bytes for CDR buffers	Not enough memory to get a new CDR buffer n bytes long
Unable to write cpu profiling data, error d	An error occurred when writing cpu profiling data (d = error, k = errno value)
Unable to write profiling data, error d, errno k	An error occurred when writing user profiling data (d = error, k = errno value).
Unable to write system profiling data, error d, errno k	An error occurred when writing system profiling data (e = error, k = errno value).
User Profiling data written	The user profiling data has been written successfully.
xxx AACU PROCESSING: INVALID DISPLAY NUMBER	Display number is invalid.
xxx AACU PROCESSING: OPEN DEVICE FAILED	Open device failed.
xxx AACU STATUS:ERROR NUMBER OUT OF RANGE	AACU status contains an unknown value

Format	Description
xxx AACU STATUS:SPEAKER NUMBER OUT OF RANGE	AACU speaker status contains an unknown value
xxx ACTIVE TRACK MAINTENANCE MESSAGE: ALTITUDE ERROR	Message reported altitude is out of range.
xxx ACTIVE TRACK MAINTENANCE MESSAGE: BACKUP, NO STF AVAILB	ATM received in BACKUP mode for a new sensor track that is the preferred RSB but there is no STF available.
xxx ACTIVE TRACK MAINTENANCE MESSAGE: COORDINATE ERROR x = xx, Y = yy NM	Message reported position coordinates are out of range.
xxx ACTIVE TRACK MAINTENANCE MESSAGE: RANGE ERROR range	Message range is out of range.
xxx ACTIVE TRACK MAINTENANCE MESSAGE: SENSOR NUMBER ERROR ss	Message principle sensor ss is invalid.
xxx ACTIVE TRACK MAINTENANCE MESSAGE: SPEED ERROR	Message speed is out of range.
xxx ACTIVE TRACK MAINTENANCE MESSAGE: SUBORD SENSOR ERROR ss	Message subordinate sensor ss is invalid.
xxx ACTIVE TRACK MAINTENANCE MESSAGE: TRACK NUMBER ERROR trk_nbr	Message track number is out of range.
xxx ACTIVE TRACK MAINTENANCE MESSAGE: TRACK STATUS ERROR	Message track status is invalid.
xxx ADD FDF RECORD: FLIGHT PLAN ALREADY LINKED IN FDF	Specified flight plan is already in the Flight Data File
xxx ADD FDF RECORD: FLIGHT PLAN NUMBER ERROR	Specified flight plan number is out of range.
xxx BROPM UPDATE DATA MESSAGE: BAD SENSOR NUMBER	Associated sensor is invalid.
xxx BROPM UPDATE DATA MESSAGE: MSG VALUE TOO BIG	A value in the message was too large to convert to percent.
xxx C56_0_RD_FDP_MSG: INVALID MESSAGE CODE	Message code is invalid.
xxx C56_0_RD_FDP_MSG: INVALID MESSAGE LENGTH	Message length is out of range.
xxx C56_42_NONMAP_BD: BLOCK DATA SIZE TOO LARGE	Message block data size is out of range.
xxx C56_42_NONMAP_BD: INVALID BLOCK DATA I.D.	Message block data ID is invalid.

Format	Description
xxx C56_42_NONMAP_BD: INVALID BLOCK DATA SIZE	Message block data size is invalid.
xxx C61_0_RD_FDP_MSG: INVALID MESSAGE CODE	Message code is invalid.
xxx C61_0_RD_FDP_MSG: INVALID MESSAGE LENGTH	Message length is out of range.
xxx C61_1_INIT-MSG: INVALID MSG LENGTH	Message length is out of range.
xxx C61_1_INIT-MSG: INVALID NUMBER OF TAB LISTS	Message number of tabular lists is out of range.
xxx C61_1_INIT-MSG: INVALID TOGGLE TIME VALUE	Message toggle time is invalid.
xxx C61_2_INIT_TAB: INVALID MAX NUMBER OF TAB LINES	Message number of tabular lines is invalid.
xxx C61_2_INIT_TAB: INVALID NUMBER OF CHARS PER TAB LINE	Message number of characters per tabular line is invalid.
xxx C61_2_INIT_TAB: INVALID TAB LIST I.D.	Message tabular list number is out of range.
xxx C61_2_INIT_TAB: TAB LISTS EXCEED AVAILABLE MEMORY LIMIT	Message tabular list size exceeds available memory limit.
xxx C61_20_TRK_MSG: INVALID MESSAGE LENGTH OR TRACK NUMBER	Message track number or length is out of range.
xxx C61_21_ADD_TRK: CANNOT ADD TRACK - INVALID NUMBER OF C-WORDS	Message length indicates odd number of C-words.
xxx C61_21_ADD_TRK: CANNOT ADD TRACK - TOO FEW C-WORDS	Message length is too small for toggle data.
xxx C61_21_ADD_TRK: CANNOT ADD TRACK WITH B-WORD ONLY	Message has no data to add.
xxx C61_23_UPDAT_TRK: TRACK NOT REPOSITIONED - INVALID MSG SIZE	Message length is invalid for B-word only.
xxx C61_23_UPDAT_TRK: TRACK NOT UPDATED - INVALID NUMBER OF C-WORDS	Message length indicates odd number of C-words.
xxx C61_23_UPDAT_TRK: TRACK NOT UPDATED - TOO FEW C-WORDS	Message length is too small for toggle data.
xxx C61_30_TAB_MSG: INVALID FUNCTION CODE	Message function is invalid.

Format	Description
xxx C61_30_TAB_MSG: INVALID TAB LIST I.D.	Message tabular list number is out of range.
xxx C61_31_ADD_LINE: INVALID NUMBER OF C WORDS OR CHARS	Message number of C-words is invalid.
xxx C61_31_ADD_LINE: LINE NOT DISPLAYED - LINE TOO LONG	Message number of C-words exceeds maximum number of C-words per line.
xxx C61_33_MOD_LINE: INVALID NUMBER OF C-WORDS OR CHARS	Message number of C-words is invalid.
xxx C61_33_MOD_LINE: LINE NOT MODIFIED - TAB LINE TOO LONG	Message number of C-words exceeds maximum number of C-words per line.
xxx C61_37_POSN_LIST: INVALID NUMBER OF B-WORDS	Message number of B-words is invalid.
xxx C61_40_BDATA_MSG: INVALID BLOCK DATA I.D.	Message block data ID is invalid.
xxx C61_42_NONMAP_BD: BLOCK DATA SIZE TOO LARGE	Message block data size is out of range.
xxx C61_42_NONMAP_BD: INVALID BLOCK DATA SIZE	Message block data size is invalid.
xxx C61_58_MEM_RDOUT : ADDRESS OUT OF RANGE	Address is out of range.
xxx C61_58_MEM_RDOUT : NUMBER OF READOUT ADDRESSES EXCEEDED LIMIT	Number of addresses exceeds maximum number of addresses.
xxx C61_59_CHG_MEM : ADDRESS OUT OF RANGE	Address is out of range.
xxx C61_59_CHG_MEM : INVALID DATA SIZE	Message data size is invalid.
xxx C61_59_CHG_MEM : MEMORY IS WRITE PROTECTED	Memory is write protected.
xxx C63_0_RD_PREVMSG: INVALID TAB LINE UPDATE FUNC CODE	Message function is invalid.
xxx C63_20_ADD_MOD: INVALID KEYBOARD FUNCTION	Message keyboard function is invalid.
xxx C63_20_ADD_MOD: INVALID LINE NUMBER	Message line number is invalid.
xxx C63_20_ADD_MOD: INVALID NUMBER OF C-WORDS	Message number of C-words is invalid or exceeds maximum number of C-words per line.

Format	Description
xxx C63_20_ADD_MOD: TOO MANY CHARS	Message preview count exceeds maximum number of characters per line.
xxx C63 21 DEL: INVALID LINE NUMBER	Message line number is invalid.
xxx CA PAIRS MESSAGE: SENSOR NUMBER ERROR	Message Mode C intruder sensor is invalid.
xxx CA PAIRS MESSAGE: FIRST/LAST INDEX ERROR	CA Pairs Message contained an invalid first or last CA table index
xxx CA PAIRS MESSAGE: PAIR INDEX ERROR	CA Pairs Message contained an invalid CA Table Index
xxx CA PAIRS MESSAGE: TRACK NUMBER ERROR	Track number exceeds maximum FDF value for system.
xxx CANNOT PARSE TEST PATTERN DATA	LDDT pattern data cannot be parsed into Type I, II, or III words
xxx CENRAP NORTH MARK MESSAGE: INVALID BEACON CODE	Message beacon code is invalid.
xxx CENRAP NORTH MARK MESSAGE: INVALID NUMBER OF TARGETS	Message number of targets exceeds maximum number of targets.
xxx CENRAP NORTH MARK MESSAGE: INVALID TRACK COORDINATES	Message track coordinate is out of range.
xxx CONFIGURATION CHANGE DATA MESSAGE: KEYBOARD OUT OF RANGE	Paired keyboard number is invalid.
xxx CONFIGURATION CHANGE DATA MESSAGE: INVALID LENGTH	Configuration Change Data message length is invalid.
xxx CONTROLLER KEYBOARD MESSAGE: INVALID FUNCTION NUMBER	Message function is invalid.
xxx CONTROLLER KEYBOARD MESSAGE: INVALID KEYBOARD NBR	Message keyboard number is invalid.
xxx CONTROLLER KEYBOARD MESSAGE: INVALID NBR CHARS	Message number of characters exceeds maximum number of preview characters.
xxx CONTROLLER KEYBOARD MESSAGE: INVALID SLEW PERIOD	Message slew period exceeds maximum number of preview characters.
xxx CONTROLLER KEYBOARD MESSAGE: KEYBOARD IS NOT CONFIGURED	Keyboard specified by message keyboard number is not enabled.
xxx CONTROLLER KEYBOARD RESPONSE: INVALID ERROR NUMBER	Message error number is invalid.
xxx CONTROLLER KEYBOARD RESPONSE: INVALID FUNCTION NUMBER	Message function is invalid.

Format	Description
xxx CONTROLLER KEYBOARD RESPONSE: INVALID KEYBOARD NBR	Message keyboard number is invalid.
xxx CONTROLLER KEYBOARD RESPONSE: INVALID NBR CHARS	Message number of readout characters exceeds maximum number of preview characters.
xxx CONTROLLER READOUT MSG: INVALID KEYBOARD NBR	Message keyboard number is invalid.
xxx CRDA: ALL GDB NUMBERS CURRENTLY USED	No data block update possible, Ghost Data File is full.
xxx CRDA: GHOST DATA FILE FULL	No insert possible, Ghost Data File is full.
xxx CRDA: INVALID SENSOR NUMBER	Sensor number in Ghost Data Block Msg exceeds maximum sensor value.
xxx DAF_TRK: BAD TRACK NUMBER	Message track number is out of range.
xxx DAF TRK: BAD TRACK STATUS	Message track status is invalid.
xxx DATA BLOCK UPDATE MSG : ILLEGAL LEADER CHANGE STATUS	Message specifies leader direction change only, but more than the leader direction is changed.
xxx DATA BLOCK UPDATE MSG : ILLEGAL TRACK NUMBER	Message track number is out of range.
xxx DATA BLOCK UPDATE MSG : ILLEGAL TRACK STATUS	Message track status is invalid.
xxx DATA BLOCK UPDATE MSG: ILLEGAL DATA BLOCK LINE LENGTH	Message data block line length exceeds maximum data block line length.
xxx DATA BLOCK UPDATE MSG: ILLEGAL LEADER CHANGE STATUS	Message specifies leader direction change only, but more than the leader direction is changed.
xxx DATA BLOCK UPDATE MSG: ILLEGAL TRACK NUMBER	Message track number is out of range.
xxx DATA BLOCK UPDATE MSG: ILLEGAL TRACK STATUS	Message track status is invalid.
xxx DBRITE DISPLAY MESSAGE: INVALID RANGE	Type 1 range is out of range.
xxx DDCP STATUS: ERROR NUMBER OUT OF RANGE	Message error number is invalid.
xxx DELETE FDF RECORD: FLIGHT PLAN NOT LINKED IN FDF	Specified flight plan is not yet in the Flight Data File
xxx DELETE FDF RECORD: FLIGHT PLAN NUMBER ERROR	Specified flight plan number is out of range.

Format	Description
xxx DELETE FLIGHT DATA MESSAGE: INVALID FLIGHT PLAN NUMBER	Message flight plan number is out of range.
xxx DELETE FLIGHT DATA MESSAGE: INVALID SENSOR NUMBER	Message sensor number is out of range.
xxx DELETE FLIGHT DATA MESSAGE: TRACK NOT IN FDF	Message track number is not in use in Flight Data File
xxx DELETE FROM ARR/DEP LIST TRACK fdf-nbr NOT IN KEYBOARD kbd-nbr A/D LIST	Specified track number not found in specified arrival/departure list.
xxx DELETE FROM COAST/SUSP LIST TRACK fdf-nbr NOT IN KEYBOARD kbd-nbr C/S LIST	Specified track number not found in specified coast/suspend list.
xxx DELETE TRACK MESSAGE: SENSOR ERROR	Message principle sensor is invalid.
xxx DELETE TRACK MESSAGE: SUBORD SENSOR ERROR	Message subordinate sensor is invalid.
xxx DELETE TRACK MESSAGE: TRACK NUMBER ERROR trk_nbr	Message track number is out of range.
xxx DISPLAY PREVIEW OUTPUT 0: FUNCTION NUMBER INVALID	Function is invalid.
xxx DISPLAY PREVIEW OUTPUT 3: INPUT ARGUMENT ERROR	Error message table index is out of range.
xxx DISPLAY PREVIEW OUTPUT 67: NUMBER CHARS OUT OF RANGE	Text line exceeds maximum length of text line.
xxx DISPLAY PREVIEW OUTPUT ILLEGAL LIST NUMBER	Tabular list number is out of range.
xxx DISPLAY PREVIEW OUTPUT: ILLEGAL OPERATION	Function is invalid.
xxx DISPLAY SETTINGS MESSAGE: INVALID DISPLAY SETTING	Message setting type is invalid.
xxx DISPLAY TABULAR DATA: ILLEGAL LINE NUMBER	Message tabular line number is out of range.
xxx DISPLAY TABULAR DATA: NO MEMORY	No more memory to allocate.
xxx DISPLAY TABULAR DATA: NUMBER CHARSOUTOF RANGE	Message text exceeds maximum number of characters allowed in the specified tabular list.
xxx DISPLAY TABULAR DATA: OPERATION OUT OF RANGE	Message function is invalid.

Format	Description
INVALID REGION NAME REQUEST FIELD: REGION ID INDEX	Invalid Field in msg0050
INVALID REGION NAME REQUEST FIELD: REGION TYPE INDEX	Invalid Field in msg0050
INVALID REGION NAME REQUEST FIELD: REQUESTING DISPLAY	Invalid Field in msg0050
INVALID REGION NAME REQUEST FIELD: SCROLL INDEX	Invalid Field in msg0050
INVALID SIFS HEARTBEAT MESSAGE FIELD: NID = XX ILLEGAL SENSOR/PATH NUMBER	SIFS heartbeat message, received from NID XX, identifies an unadapted sensor or a path could not be found.
INVALID SMC HEARTBEAT MESSAGE FIELD: DAY ddd	SMC heartbeat msg has invalid day field ddd.
INVALID SMC HEARTBEAT MESSAGE FIELD: TIME tttttttt	SMC heartbeat msg has invalid time field tttttttt.
INVALID SMC HEARTBEAT MESSAGE FIELD: YEAR yyyy	SMC heartbeat msg has invalid year field yyyy.
INVALID TP HEARTBEAT MESSAGE FIELD: ILLEGAL NID NUMBER xx	TP Heartbeat msg has invalid nid number (xx) field.
INVALID TRACK NUMBER RESPONSE MESSAGE FIELD: FDF NUMBER	Track Number Response msg has invalid FDF number field.
INVALID TRACK NUMBER RESPONSE MESSAGE FIELD: SENSOR NUMBER	Track Number Response msg has invalid sensor number field.
INVALID TRACK NUMBER RESPONSE MESSAGE FIELD: TRACK NUMBER	Track Number Response msg has invalid track number field.
INVALID VARIABLE MAP MESSAGE FIELD: AZIMUTH	ARSR CD2 Variable Weather Msg has invalid azimuth.
INVALID VARIABLE MAP MESSAGE: AZIMUTH aa IN ZONE zz	ARSR CD2 Variable Weather Msg has invalid azimuth (aa) for the given zone (zz).
INVALID VARIABLE MAP MESSAGE FIELD: WEATHER TYPE	ARSR CD2 Variable Weather Msg has invalid weather type field.
INVALID VARIABLE MAP MESSAGE: RANGES rr rr NOT IN SAME ZONE	ARSR CD2 Variable Weather Msg has start range (rr) and end range (rr) that are not in the same weather zone.
INVALID VARIABLE MAP MESSAGE FIELD: SENSOR NUMBER	ARSR CD2 Variable Weather Msg has invalid sensor number field.
Kernel Profiling data written	The kernel profiling data has been written successfully.

Format	Description
xxx DP FILTER ZONE MESSAGE: INVALID R3Z3 CENTER LOCATION	Coordinate exceeds display capability.
xxx DP FILTER ZONE MESSAGE: INVALID R3Z3 RANGE	Range is less than zero or greater than 64 nautical miles.
xxx DP FILTER ZONE MESSAGE: INVALID R6Z3 AZIMUTH	Azimuth is less than zero or exceeds 360 degrees.
xxx DP FILTER ZONE MESSAGE: INVALID R6Z3 CENTER LOCATION	Coordinate exceeds display capability.
xxx DP FILTER ZONE MESSAGE: INVALID R6Z3 RANGE	Range is less than zero or greater than 64 nautical miles.
xxx DP FILTER ZONE MESSAGE: INVALID USER DEFINED CENTER LOCATION	Coordinate exceeds display capability.
xxx DP FILTER ZONE MESSAGE: INVALID USER DEFINED R2Z2 AZIMUTH	Azimuth is less than zero or exceeds 360 degrees.
xxx DP FILTER ZONE MESSAGE: INVALID USER DEFINED R2Z2 CENTER LOCATION	Coordinate exceeds display capability.
xxx DP FILTER ZONE MESSAGE: INVALID USER DEFINED R2Z2 RANGE	Range is less than zero or greater than 64 nautical miles.
xxx DP FILTER ZONE MESSAGE: POLYPOINT X,Y COORDINATE TOO LARGE	Coordinate exceeds display capability.
xxx DP FILTER ZONE MESSAGE: UNDEFINED REGION TYPE	Region geometry is undefined.
xxx DP FILTER ZONE MESSAGE: UNDEFINED ZONE STATUS	Filter zone status is unknown.
xxx DP INITIALIZE MESSAGE: DISPLAY CENTER OUT OF RANGE	Coordinate exceeds display capability on transition to mosaic mode.
xxx DP INITIALIZE MESSAGE: DISPLAY OFFSET OUT OF RANGE	Display offset coordinate exceeds range on transition to mosaic mode.
xxx DP INITIALIZE MESSAGE: FDB SYMBOL OUT OF RANGE	FDB symbol is invalid.
xxx DP INITIALIZE MESSAGE: FILTER LIMIT OUT OF RANGE	Filter limit is out of range.
xxx DP INITIALIZE MESSAGE: GI SELECTION OUT OF RANGE	ATIS/GI selection is out of range.
xxx DP INITIALIZE MESSAGE: ILLOGICAL RDBM RANGE VALUES	RDBM range values are out of range or illogical.

Format	Description
xxx DP INITIALIZE MESSAGE: KEYBOARD FUNCTION ID ERROR	Keyboard function identifier is invalid.
xxx DP INITIALIZE MESSAGE: LEADER LENGTH OUT OF RANGE	Leader length is out of range.
xxx DP INITIALIZE MESSAGE: MODE-C DISPLAY COUNT ERROR	Mode C display count is out of range.
xxx DP INITIALIZE MESSAGE: PAIRED KEYBOARD OUT OF RANGE	Paired keyboard number is invalid.
xxx DP INITIALIZE MESSAGE: QLOOK KEYBOARD OUT OF RANGE	Quicklook keyboard is invalid.
xxx DP INITIALIZE MESSAGE: RDBM OFFSET OUT OF RANGE	RDBM offset coordinates are out of range.
xxx DP INITIALIZE MESSAGE: SCRATCHPAD DISPLAY COUNT ERROR	Scratch pad count is out of range.
xxx DP INITIALIZE MESSAGE: TRACKBALL SYMBOL OUT OF RANGE	Trackball symbol is invalid.
xxx DP SITE DATA MESSAGE: CLUTTER ALTITUDE FLOOR ERROR	Message clutter altitude floor is out of range.
xxx DP SITE DATA MESSAGE: CLUTTER KEYBOARD ERROR	Message clutter keyboard number is out of range.
xxx DP SITE DATA MESSAGE: ETA STORE STATUS TIME LIMIT ERROR	Message ETA store status time limit is out of range.
xxx DP SITE DATA MESSAGE: IFR CHARACTER ERROR	Message IFR character is invalid.
xxx DP SITE DATA MESSAGE: KEYBOARD SYMBOL ERROR	Message keyboard symbol is invalid.
xxx DP SITE DATA MESSAGE: LAST IFR CODE ERROR	Message last IFR code number is out of range.
xxx DP SITE DATA MESSAGE: LAST VFR CODE ERROR	Message last VFR code number is out of range.
xxx DP SITE DATA MESSAGE: NBR OF ALT RESTRICTN AREAS ERROR	Message number of altitude restriction areas is out of range.
xxx DP SITE DATA MESSAGE: NUMBER OF AUTO IFR CODES ERROR	Message number of auto IFR codes is out of range.
xxx DP SITE DATA MESSAGE: NUMBER OF AUTO VFR CODES ERROR	Message number of auto VFR codes is out of range.
xxx DP SITE DATA MESSAGE: NUMBER OF FLIGHT PLANS ERROR	Message number of flight plans is out of range.

Format	Description
xxx DP SITE DATA MESSAGE: NUMBER OF KEYBOARDS ERROR	Message number of keyboards is out of range.
xxx DP SITE DATA MESSAGE: NUMBER OF SENSORS ERROR	Message number of sensors is out of range.
xxx DP SITE DATA MESSAGE: PTD STORE STATUS TIME LIMIT ERROR	Message PTD store status time limit is out of range.
xxx DP SITE DATA MESSAGE: TOWER DSPLY ARRIVAL STATUS ERROR	Message tower display arrival status is invalid.
xxx DP SITE DATA MESSAGE: VFR CHARACTER ERROR	Message VFR character is invalid.
xxx DRF_TRK: ILLOGICAL TRACK STATUS	Message track status is invalid.
xxx ETG TARGET NUMBER DATA MSG: SENSOR ERROR	Message sensor number is different than display sensor number.
xxx FDAD disp_nbr: TARGET OUT OF RANGE	Message target coordinates positioned beyond the range of the FDAD.
xxx FDP TOGGLE: UNEXPECTED TRACK STATUS FOR TOGGLE DATA	Track Record Table contains toggle data with an invalid track status.
xxx FLIGHT PLAN MAINT MSG: acid- AIRCRAFT ID ERROR	Message aircraft ID is invalid.
xxx FLIGHT PLAN MAINT MSG: acid- ARRIVAL/DEPARTURE STATUS ERROR	Message arrival/departure status is invalid.
xxx FLIGHT PLAN MAINT MSG: acid- ASSIGNED BEACON CODE STATUS ERROR	Message assigned beacon code is invalid.
xxx FLIGHT PLAN MAINT MSG: acid- CONTROLLER ERROR	Message controller number is out of range.
xxx FLIGHT PLAN MAINT MSG: acid- FLIGHT PLAN STATUS ERROR	Message flight plan status is invalid.
xxx FLIGHT PLAN MAINT MSG: acid- FLT PLAN NBR ERR fdf_nbr	Message flight data file number is out of range.
xxx FLIGHT PLAN MAINT MSG: acid- HANDOFF STATUS ERROR	Message handoff status is invalid.
xxx FLIGHT PLAN MAINT MSG: acid- SUBSYSTEM ERROR	Message sensor number is out of range.
xxx FLIGHT PLAN MAINT MSG: acid- TAB LINE ID ERROR	Message tabular line ID is invalid.
xxx FLIGHT PLAN MAINT MSG: acid- TRACK NUMBER ERROR trk_nbr	Message track number is out of range.

Format	Description
xxx FLIGHT PLAN MAINT MSG: acid-TRACK STATUS ERROR	Message track status is invalid.
xxx FORMAT SUSPEND DATA BLOCKS: ACTIVE TAB TRACK, BUT NOT A SUSPENDTRK	Flight Data File store/suspend status is invalid.
xxx FRONT PANEL MESSAGE: ILLEGAL SENSOR CODE	Message sensor number is out of range.
xxx FRONT PANEL MESSAGE: INVALID RANGE	Message range scale is out of range.
xxx GRAPHIC CONTROL MESSAGE: INVALID FUNCTION	Message function is invalid.
xxx GRAPHIC CONTROL MESSAGE: INVALID GRAPHICAL OBJECT TYPE	Message object type index is invalid.
xxx GRAPHIC CONTROL MESSAGE: INVALID OBJECT TO COMPLETE	Message object to be completed doesn't exist
xxx GRAPHIC CONTROL MESSAGE: INVALID OBJECT TO DELETE	Message object to be deleted doesn't exist
xxx GRAPHIC CONTROL MESSAGE: MULTIPLE FIRST PRIMITIVES	Message indicates first primitive when first primitive already exists.
xxx GRAPHIC POINT/TEXT MESSAGE: MULTIPLE FIRST PRIMITIVES	Message indicates first primitive when first primitive already exists.
xxx GRAPHIC POINT/TEXT MESSAGE: OBJECT RECEIVED/ALREADY COMPLETE	Message object received is already complete.
xxx GRAPHIC POINT/TEXT MESSAGE: OBJECT RECEIVED/NO FIRST PRIMITIVE	Message object received but no first primitive.
xxx GRAPHIC POINTS PRIMITIVE MESSAGE: INVALID GRAPHICAL OBJECT TYPE	Message object type index is invalid.
xxx GRAPHIC POINTS PRIMITIVE MESSAGE: INVALID PRIMITIVE COUNT	Mismatch between message number of points and message length.
xxx GRAPHIC POINTS PRIMITIVE MESSAGE: OBJECT OUT OF RANGE	Message point coordinate is out of range.
xxx GRAPHIC PRIMITIVE MESSAGE: INVALID GRAPHICAL OBJECT TYPE	Message object type index is invalid.
xxx GRAPHIC PRIMITIVE MESSAGE: INVALID LINE STYLE	Message line style is invalid.
xxx GRAPHIC PRIMITIVE MESSAGE: INVALID PRIMITIVE COUNT	Mismatch between message number of primitives and message length

Format	Description
xxx GRAPHIC PRIMITIVE MESSAGE: MULTIPLE FIRST PRIMITIVES	Message indicates first primitive when first primitive already exists.
xxx GRAPHIC PRIMITIVE MESSAGE: OBJECT OUT OF RANGE	Message object coordinate is out of range.
xxx GRAPHIC TEXT PRIMITIVE MESSAGE: INVALID GRAPHICAL OBJECT TYPE	Message object type index is invalid.
xxx GRAPHIC TEXT PRIMITIVE MESSAGE: OBJECT OUT OF RANGE	Message text coordinate is out of range.
xxx GRAPHICAL OBJECT CURRENTLY DISPLAYED	Object specified by message is currently displayed.
xxx GRAPHICAL OBJECT NOT CURRENTLY DISPLAYED	Attempt to delete a non-displayed object.
xxx GRAPHICAL OBJECT obj_type_idx/disp_obj_idx NOT AVAILABLE	Message function requested object data not available to CP
xxx ILLOGICAL MESSAGE NOTIFICATION MESSAGE: ERROR TYPE ERROR	Message error type is invalid.
xxx INVALID GRAPHICAL OBJECT TYPE	Message object type index is invalid.
xxx INVALID RDBM SERIAL BOARD ADAPTED	RDBM serial board number is invalid.
xxx INVALID RDBM SERIAL PORT ADAPTED	RDBM serial port number is invalid.
xxx INVALID TP HEARTBEAT MESSAGE FIELD: DAY	TP heartbeat message validate the day of the year in the message
xxx INVALID TP HEARTBEAT MESSAGE FIELD: YEAR	TP heartbeat message validate the year in the message
xxx KDC Input Processing: Open Device Failed	Open device failed.
xxx KDC Input Processing: Read Device Failed	Read device failed.
xxx KDC STATUS:ERROR NUMBER OUT OF RANGE	KDC status contains an unknown value
xxx KDC STATUS:KEYBOARD NUMBER OUT OF RANGE	Keyboard number in KDC status contains an unknown value
xxx KEYBOARD CONFIGURATION MSG : KEYBOARD OUT OF RANGE	Message keyboard number is invalid.
xxx LEADER DIRECTION MESSAGE: FLIGHT PLAN NUMBER ERROR fdf nbr	Message flight plan number is out of range.

Format	Description
xxx LEADER DIRECTION MESSAGE: INVALID DIRECTION ERROR	Message leader direction is invalid.
xxx LINK MAINTENANCE MESSAGE: DST INACTIVE dd SENSOR ss	Message Displayed Sensor Track dd is inactive, sensor ss.
xxx LINK MAINTENANCE MESSAGE: DST SENSOR ERROR ss	Message Displayed Sensor Track sensor ss is invalid.
xxx LINK MAINTENANCE MESSAGE: LINK NBR ERR nn SENSOR ss	Message linked track number nn is invalid from sensor ss.
xxx LINK MAINTENANCE MESSAGE: SYSTEM TRACK NBR ERR nn	Message system track number nn is invalid.
xxx MEMORY READOUT RESPONSE MSG: NOT EXPECTING RESPONSE	Received a Memory Readout Response message when one was not expected.
xxx MEMORY READOUT RESPONSE MSG: SOURCE NOT EQUAL RECEIVER	Received a Memory Readout Response message with a source different from the one expected.
xxx MEMORY READOUT RESPONSE MSG: STATUS OUT OF RANGE	Message status is invalid.
xxx MISSING REPLY ERROR - KEYBOARD d	Missing reply error received for keyboard d
xxx MODIFY ARRIVE/DEPART LINE: TRACK fdf_nbr NOT IN KEYBOARD kbd nbr A/D LIST	Specified track number not found in specified arrival/departure list.
xxx MODIFY COAST/SUSPEND LINE: TRACK trk_nbr NOT IN KEYBOARD kbd_nbr C/S LIST	Specified track number not found in specified coast/suspend list.
xxx MONITOR INITIALIZATION: aaaa MSG NOT RECEIVED	Site message identified by aaaa not received during initialization
xxx MONITOR MAP DOWNLOADING: CA MAP TRANSFER TIMEOUT	Failed to receive all conflict alert maps before timeout period elapsed
xxx MONITOR MAP DOWNLOADING: GEO MAP TRANSFER TIMEOUT	Failed to receive all geographic maps before timeout period elapsed
xxx MONITOR MAP DOWNLOADING: LDDT MAP TRANSFER TIMEOUT	Failed to receive all LDDT patterns before timeout period elapsed
xxx MOSAIC TARGET MSG: INVALID SENSOR	Message sensor number is invalid.
xxx MOSAIC TARGET MSG: INVALID TARGET TYPE	Message target type is neither beacon-only, radar-only, nor radar reinforced beacon.
xxx MOSAIC TARGET MSG: TARGET OVERFLOW	Target overflow condition has been detected.

Format	Description
xxx NO MEMORY FOR GRAPHICAL OBJECT region-name	Object specified by message caused a memory error.
xxx OPERATOR INPUT REQUEST PREVIEW CHARS EXCEEDS MAX LENGTH	Message number of preview characters exceeds maximum number of preview characters.
xxx PROCESS PEM MOVEMENT MESSAGE FOR UNCONFIGURED PEM	Keyboard specified by message keyboard number is not enabled.
xxx PROCESS SIA ERROR REPORT INVALID SIA/SDC ERROR REPORT	Message indicates SIA/SDC error report is invalid.
xxx RADS CONFIGURE KEYBOARD: KEYBOARD NUMBER OUT OF RANGE	Message keyboard number is invalid.
xxx RADS FUNCTION KEY: INVALID FUNCTION F8	Function key F8 is invalid.
xxx RADS GRAPHICS DISPLAY: DISPLAY DATA BUFFER OVERFLOW	Display data buffer overflow.
xxx RADS GRAPHICS DISPLAY: MULTIPLE FIRST PRIMITIVES	Same first primitive number received for graphical object
xxx RADS KEYBOARD STROKES: INVALID KEY CODE	Message key code is invalid.
xxx RADS SECTOR OUTPUT DISPLAY DATA BUFFER OVERFLOW	Display data buffer overflow.
xxx RADS SEND TABLIST: DISPLAY DATA BUFFER OVERFLOW	Display data buffer overflow.
xxx RADS TABULAR DATA: RADS INTERFACE IS NOT INITIALIZED	Message received before initialization complete.
xxx RADS TABULAR LIST LINE LENGTH EXCEEDS MAXIMUM	Message text exceeds maximum number of characters allowed in a line of the specified tabular list.
xxx RADS TABULAR LIST LINE NUMBER EXCEEDS MAXIMUM	Message number of lines exceeds the maximum number of lines in the tabular list.
xxx RADS TABULAR LIST NO MEMORY	No more memory available in chassis for tab list data
xxx RADS TABULAR LIST RADS INTERFACE IS NOT INITIALIZED	RADS interface is not initialized.
xxx RADS TABULAR LIST TAB LIST NOT ADAPTED	Tabular list specified by message tabular list number not adapted.
xxx RADS TABULAR LIST TAB LIST NUMBER OUT OF RANGE	Message tabular list number is out of range.

Format	Description
xxx RADS TARGET FORMATTER: INVALID TARGET COUNT	Message length not consistent with number of targets
xxx RADS TARGET FORMATTER: TARGET OUT OF RANGE	Primitive located outside of displayable area.
xxx RADS TARGET FORMATTER: UNEXPECTED WEDGE NUMBER	Mismatch between message wedge number and expected wedge number.
xxx RADS TARGET FORMATTER: WEDGE NUMBER OUT OF RANGE	Message wedge number is out of range.
xxx RADS TYPE I CONVERT X IS OUT OF RANGE	X-coordinate is out of range.
xxx RADS TYPE I CONVERT Y IS OUT OF RANGE	Y-coordinate is out of range.
xxx RADS TYPE II CONVERT X IS OUT OF RANGE	X-coordinate is out of range.
xxx RADS TYPE II CONVERT Y IS OUT OF RANGE	Y-coordinate is out of range.
xxx RDBM GETMSG FAILED - RETURN result / ERRNO errno	Debug information when getmsg fails and the serial device is open.
xxx RDBM I-CLOSE IOCTL FAILED: ERRNO errno	Debug information when serial port ioctl on close function fails.
xxx RDBM I-FLUSH IOCTL FAILED: ERRNO errno	Debug information when serial port ioctl on flush function fails.
xxx RDBM PREVIEW MESSAGE: FUNCTION NUMBER ERROR	Message function is invalid.
xxx RDBM PREVIEW MESSAGE: KEYBOARD NUMBER ERROR	Message keyboard number is invalid.
xxx RDBM PREVIEW MESSAGE: LENGTH ERROR	Message length is invalid.
xxx RDBM PUTMSG FAILED - RETURN result / ERRNO errno	Debug information when getmsg fails and the serial device is open.
xxx RDBM QUICKLOOK MESSAGE: LENGTH ERROR	Message length is invalid.
xxx RDBM RESTART MESSAGE: LENGTH ERROR	Message length is invalid.
xxx RDBM RESTART MESSAGE: RANGE ERROR	Message range is out of range.
xxx RDBM RETRANSMIT/ACKNOWLEDGE MESSAGE: LENGTH ERROR	Message length is invalid.

Format	Description
xxx RDBM SERIAL BOARD NOT ADAPTED	RDBM serial board number is not adapted.
xxx RDBM SERIAL PORT CLOSE FAILED: ERRNO errno	Debug information when serial port close fails.
xxx RDBM SERIAL PORT NOT ADAPTED	RDBM serial port number is not adapted.
xxx RDBM SERIAL PORT OPEN FAILED: ERRNO errno	RDBM serial port open failed.
xxx RDBM STATUS MESSAGE: LENGTH ERROR	Message length is invalid.
xxx RDBM TRACKBALL MESSAGE: FUNCTION NUMBER ERROR	Message function is invalid.
xxx RDBM TRACKBALL MESSAGE: KEYBOARD NUMBER ERROR	Message keyboard number is invalid.
xxx RDBM TRACKBALL MESSAGE: LENGTH ERROR	Message length is invalid.
xxx RDBM TRACKBALL/PREVIEW MESSAGE: FUNCTION NUMBER ERROR	Message function is invalid.
xxx RDBM TRACKBALL/PREVIEW MESSAGE: KEYBOARD NUMBER ERROR	Message keyboard number is invalid.
xxx RDBM TRACKBALL/PREVIEW MESSAGE: LENGTH ERROR	Message length is invalid.
xxx READOUT ARRAY MSG : EXCESSIVE CHARS IN LINE line-nbr	Message text line exceeds maximum length of text line.
xxx READOUT ARRAY MSG : EXCESSIVE NUMBER OF LINES	Message number of lines exceeds maximum number of lines.
xxx READOUT ARRAY MSG : INVALID KEYBOARD NBR	Message keyboard number is invalid.
xxx REPOSITION TAB LIST LIST NUMBER OUT OF RANGE	Tabular list number is out of range.
xxx REPOSITION TAB LIST LIST OUT OF RANGE FOR ENABLE/INHIBIT	Tabular list number is out of range.
xxx REPOSITION TAB LIST: PREV LIST OUT OF RANGE	Tabular list number is out of range.
xxx RETURN TAB LINE ID: ILLEGAL LINE ID SPECIFIED	Specified tabular line ID is invalid.
xxx ASR9 WEATHER MESSAGE: SENSOR NUMBER ERROR	Sensor number in message does not match current sensor selection.
xxx ASR9 WEATHER MESSAGE: SENSOR NUMBER OUT OF RANGE	Sensor number in message is out of range.

Format	Description
xxx BEACON REPORT MESSAGE: SENSOR NUMBER ERROR	Sensor number in message does not match current sensor selection.
xxx BEACON REPORT MESSAGE: SENSOR NUMBER OUT OF RANGE	Sensor number in message is out of range.
xxx RADAR REPORT MESSAGE: SENSOR NUMBER ERROR	Sensor number in message does not match current sensor selection.
xxx RADAR REPORT MESSAGE: SENSOR NUMBER OUT OF RANGE	Sensor number in message is out of range.
xxx RGW MODE: LDB CAPACITY EXCEEDED	RGW LDB capacity exceeded at display in RGW mode.
xxx SECTOR MARK REPORT MESSAGE: SENSOR NUMBER ERROR	Sensor number in message does not match current sensor selection.
xxx SECTOR MARK REPORT MESSAGE: SENSOR NUMBER OUT OF RANGE	Sensor number in message is out of range.
xxx SUBSYSTEM STATUS RPT REQ MSG: INVALID SSR IDENTIFIER	Invalid subsystem status requested.
xxx SDC HEARTBEAT MESSAGE: ARTS MODE CHANGE	Mismatch between message ARTS mode and display ARTS mode.
xxx SYSTEM WEATHER MESSAGE: CELL NUMBER ERROR ccc	Message weather cell number is greater than number of columns in system weather grid.
xxx SYSTEM WEATHER MESSAGE: NUMBER OF SLATS ERROR nn	Message slat number nn is greater than allowed.
xxx SYSTEM WEATHER MESSAGE: ROW NUMBER ERROR rrr	Message row number is greater than number of rows in system weather grid.
xxx SYSTEM WEATHER MESSAGE: SLAT LENGTH ERROR nn	Message contains slat length greater than number of columns in system weather grid.
xxx SDC HEARTBEAT MESSAGE: HIGH VOLTAGE PS OVERHEAT	Message indicates high voltage PS overheat.
xxx SDC HEARTBEAT MESSAGE: MAINTENANCE TEST SWITCH CHANGE	Mismatch between message maintenance test switch and display test switch.
xxx SDC HEARTBEAT MESSAGE: PEC OVERHEAT	Message indicates PEC overheat.
xxx SDC HEARTBEAT MESSAGE: X-AXIS DEF AMP OVERHEAT	Message indicates X-axis def amp overheat.
xxx SDC HEARTBEAT MESSAGE: Y-AXIS DEF AMP OVERHEAT	Message indicates Y-axis def amp overheat.
xxx SDC LOOPBACK RESPONSE MESSAGE: DATA DOES NOT MATCH	Message test pattern does not match transmitted test pattern.

Format	Description
xxx SDC MEMORY READOUT DATA MESSAGE: ILLEGAL ADDRESS	Message micro-memory readout address is invalid.-
xxx SDC TO FDP KEYBOARD MESSAGE: ILLEGAL CHARACTER COUNT	Message number of characters exceeds maximum number of preview characters.
xxx SDC TO FDP KEYBOARD MESSAGE: ILLEGAL FUNCTION CODE	Message function is invalid.
xxx SDC TO FDP KEYBOARD MESSAGE: ILLEGAL KEYBOARD NUMBER	Message keyboard number is invalid.
xxx SDC TO FDP KEYBOARD MESSAGE: ILLEGAL NUMBER OF TRACKBALLS	Message number of trackballs is invalid.
xxx SDC TO FDP KEYBOARD MESSAGE: ILLEGAL PERIOD POSITION	Message period position exceeds maximum number of preview characters.
xxx SDC TO FDP KEYBOARD MESSAGE: ILLEGAL TI CODE	Message C-words contains invalid TI code.
xxx SENSOR TEST INIT MESSAGE: INVALID DISPLAY NUMBER	Display number is either zero or exceeds MAX-NUMDQ
xxx SIA DETECTED: FRAME NOT ACCEPTED BY SDC	Message indicates SIA/SDC did not accept a frame.
xxx SIC INPUT ERROR - CTRL TYPE wan-type / COMMAND wan-command	Debug information when a message is received but it is not a data message from the RDBM.
xxx SITE DATA MESSAGE: INVALID LENGTH	Invalid length site data.
xxx SITE VFR DATA MESSAGE: INVALID LENGTH	Invalid length site VFR data.
xxx SUBSYS REPORT REQUEST: ILLEGAL SUBSYSTEM ID	Invalid subsystem ID requested for SIA subsystem
xxx TAB LIST UPDATE MESSAGE : EXCEED LIST MAX LINE COUNT	Message number of lines exceeds the maximum number of lines in the tabular list.
xxx TAB LIST UPDATE MESSAGE : EXCEED LIST MAX LINE LENGTH	Message text exceeds maximum number of characters allowed in a line of the specified tabular list.
xxx TAB LIST UPDATE MESSAGE : ILLOGICAL RUN DOWN FUNCTION	Message attempts to modify and insert/delete a line at the same time.
xxx TAB LIST UPDATE MESSAGE : LINE COUNT MISMATCH	Mismatch between message number of lines and message line count.
xxx TAB LIST UPDATE MESSAGE : NO LIST MEMORY AVAILABLE	No memory available for allocation to tab lists

Format	Description
xxx TAB LIST UPDATE MESSAGE : TAB LINE OUT OF RANGE	Message tabular line number to insert/delete is out of range.
xxx TAB LIST UPDATE MESSAGE : TAB LIST NOT ADAPTED	Tabular list specified by message tabular list number not adapted.
xxx TAB LIST UPDATE MESSAGE : TAB LIST NOT MAPPED IN RDBM	Tabular list specified by message tabular list number not mapped in RDBM refresh memory.
xxx TAB LIST UPDATE MESSAGE : TAB LIST OUT OF RANGE	Message tabular list number is out of range.
xxx TAB SET MESSAGE: INVALID KEYBOARD	Message keyboard number is invalid.
xxx TABULAR LINE UPDATE MESSAGE : ILLEGAL LINE NUMBER	Message tabular line number is out of range.
xxx TABULAR LINE UPDATE MESSAGE : ILLEGAL SLEW FUNCTION	Message slew function is invalid.
xxx TABULAR LINE UPDATE MESSAGE : ILLEGAL TAB FUNCTION	Message function is invalid.
xxx TABULAR LINE UPDATE MESSAGE : NUMBER CHARS OUT OF RANGE	Message text exceeds maximum number of characters allowed.
xxx TABULAR LINE UPDATE MESSAGE : TAB LINE OUT OF RANGE	Message tabular line number is out of range.
xxx TABULAR LINE UPDATE MESSAGE : TAB LIST NOT ADAPTED	Tabular list specified by message tabular list number not adapted.
xxx TABULAR LINE UPDATE MESSAGE : TAB LIST OUT OF RANGE	Message tabular list number is out of range.
xxx TABULAR LINE UPDATE MESSAGE : TABULAR LIST IS FULL	No insert possible, tabular list is full.
xxx TABULAR LINE UPDATE MESSAGE: NUMBER CHARS OUT OF RANGE	Message text exceeds maximum number of preview characters.
xxx TARGET DISPLAY MESSAGE: INVALID TARGET COUNT	Number of targets in message does not equal message size
xxx TARGET DISPLAY MESSAGE: INVALID TARGET RANGE	Target position is outside of displayed area.
xxx TARGET DISPLAY MESSAGE: UNEXPECTED WEDGE RECEIVED	Wedge number received out of sequence
xxx TARGET DISPLAY MESSAGE: WEDGE NUMBER OUT OF RANGE	Target display wedge number exceeds maximum
xxx THRUPUT TEST MSG: INVALID BEACON CODE	Invalid beacon code in thruput test.

Format	Description
xxx TRANSFER MAP DATA MESSAGE: INVALID BLOCK ID	Message block ID is invalid.
xxx TRANSFER MAP DATA MESSAGE: LDDT MAP TRANSFER TIMEOUT	Timeout has occurred in the receipt of one of the Transfer Map Data messages that are providing LDDT test pattern data to the LBP.
xxx TRANSFER MAP DATA MESSAGE: LDDT PA-I-TERN NUMBER OUT OF RANGE	Message block number is out of range.
xxx TRANSFER MAP DATA MESSAGE: LDDT PA-I-TERN OUT OF SEQUENCE	Mismatch between message block description and expected block description.
xxx TRANSFER MAP DATA MESSAGE: INVALID DATA TYPE	Message block ID is invalid.
xxx TRANSFER MAP DATA MESSAGE: INVALID MTRANSFER MESSAGE LENGTH	Message length is invalid.
xxx TRANSFER MAP DATA MESSAGE: LDDT PA-I-TERN NUMBER OUT OF RANGE	Message block description is out of range.
xxx TRANSFER MAP DATA MESSAGE: PREVIOUS LDDT TEST PA-I-I-ERN IS STILL IN USE	Message LDDT test pattern number is still in use.
xxx TRANSFER MAP DATA MESSAGE: TOO MANY MAP SEGMENTS	Number of map segments exceeds maximum number of map segments per map set.
xxx UPDATE VFR LIST TRACK fdf_nbr NOT IN VFR LIST	Specified track number not found in VFR list.
xxx VALIDATE PREFS: ILLEGAL MOSAIC MODE ACTIVE FLAG FIELD	User preference set Mosaic Mode Active Flag is neither true nor false.

H.23 REAL TIME QUALITY CONTROL (RTQC) SMC PRINTOUTS

H.23.1 RTQC Status Report

The RTQC status printout is generated by the F11,R keyboard entry. It gives a complete current status for all sensors and consists of a sensor summary and a sensor pair summary. Following is an example of the status printout.

RTQC Sensor Summary
JFK, Calculated R= x.xxx, A=xx.xx, Applied R= x.xxx, A= xx.xx
EWR, Calculated R= x.xxx, A=xx.xx, AUTO
LAG, Calculated None, AUTO
TEB, Calculated R= x.xxx, A=xx.xx, Applied R= xxx, A= xx.xx
BDR, Calculated R= x.xxx, A=xx.xx, AUTO
HVN, Calculated None, AUTO
MMU, Calculated None, Applied R= x.xxx A= xx.xx

RTQC Sensor Pair Summary

JFK, MMU Sample Size =xxx, Current Sample Counts =xxx,xxx
BDR, LAG Sample Size =xxx, Current Sample Counts =xxx,xxx
HVN, TEB Sample Size =xxx, Current Sample Counts =xxx,xxx
TEB, EWR Sample Size =xxx, Current Sample Counts =xxx,xxx

The sensor summary contains the RTQC data for each sensor. There is a line of data for each sensor in the system, even if a sensor has never been processed by RTQC. The printout includes:

- The three character sensor identifier.
- The word 'Calculated' refers to the most recent Range and Azimuth biases calculated.
- The most recent calculated range [R] and azimuth (A) biases in NM and ACP's. If no biases have been calculated for this sensor, these biases are replaced by the word "None".
- The word 'Applied' if this sensor is in the Manual Mode.
- The Applied range [R] and azimuth (A) corrections currently being used by the TP.
- The word 'AUTO' if this sensor is in the Automatic Mode. In this case, the 'Calculated' biases are the Applied corrections.

If in the manual mode, the Calculated biases include the Applied corrections. For example, if the Calculated Azimuth bias is 8 ACP's, and the Applied correction is 5 ACP's, 5 ACP's is being applied by the sensor input program and an additional 3 ACP bias was calculated by the last sample.

The sensor pair summary specifies the sensor pairs and the sample sizes of each sensor pair being processed.

- A three character sensor identifier for each sensor of the pair.
- The sample size for this pair. This is the number of tracks that must be found in each of the two areas for this sensor pair to complete a sample.
- The current sample count for each of the two areas for this sensor pair. When both of these values reach the sample size, corrections will be calculated for this sensor pair.

H.23.2 RTQC Sample Complete printout

The sample complete printout consists of one line and occurs when a sample for a sensor pair completes. It consists of the range and azimuth biases for each sensor of a sensor pair. These biases include the manual corrections if the sensor is in the manual mode.

Following is an example of the sample complete printout for sensor pair JFK, EWR.

RTQC Sample, JFK R=x.xxx A=xx.xx, EWR R=x.xxx A=xx.xx

To prevent this printout from occurring too frequently, it will occur only if any of the four calculated biases differ from the previously printed calculated biases by more than a parameter value. These parameter values are:

Azimuth = 2 ACP's
Range = .0625 NM

For example, assume a sample complete printout last occurred for sensors JFK and EWR indicating an azimuth bias of 11 ACP's for sensor JFK. If the next five samples for JFK, EWR indicated a 12 ACP bias for JFK, no printout would occur. If a sample indicated a 14 ACP bias, the printout would occur and no subsequent printout would occur until the ACP bias was less than 12 or greater than 16 ACP's.

H.23.3 RTQC SAMPLE TIMEOUT PRINTOUT

If a sample for a sensor pair does not complete within one hour, the sample is reinitialized and a printout occurs. Following is an example of this printout for sensor pair JFK, EWR.

RTQC TIMEOUT SENSOR PAIR JFK, EWR

H.24 RADAR GATEWAY NETWORK MESSAGES

These messages are generated by chassis on the Radar Gateway Network and are currently only generated by the Radar Gateway chassis (RGWs). An ACD operating as the ACD messenger transports these messages from the Radar Gateway Network (LANs C & D) to the ARTS IIIE Network (LANs A & B). This same ACD messenger prepends the sending chassis name and logical number to messages as it is transported. The SMC transports these messages to the SMC PC. The format of printed messages is:

MM/DD/YY HH:MM:SS XX RGWn: message

MM/DD/YY	SMC adds the current date.
HH:MM:SS	SMC adds the current time of day.
x x	SMC adds the NID, in hexadecimal, of the chassis (ACD messenger) that sent this message to the SMC.
RGWn:	Chassis name and logical number added by the ACD messenger.
message	Original message placed on the RGW Network.

In addition to the following table, many of the Serial Sensor messages in Section H.l also occur.

Class	Format	Description
OPER	xxxx VERSION n.nn.nn BUILT mmm dd yyyy hh:mm:ss	Program has started xxxx = program, n.nn.nn = revision, mmm dd yyyy hh:mm:ss = build date and time). Note: This message may occur twice on system startup or system reset.
FORCED	INV MSG S=Ox(nid) ID=Ox(msg) LNG=(l)	Invalid message msg from NID nid with length l.
OPER	invalid RGW NID/RGW Number check site data; got Ox(n)/RGW(r)	Receive RGW heartbeat message from nid n not in site adaptation or RGW number r is greater than or equal to MAX_RGW.
DEBUG	RGW is sending heartbeats	Initial heartbeat received from an RGW
SENSOR	Sensor (s) path (p) is sending SIFS heartbeats	SIFS heartbeats have started on indicated sensor s path p.
OPER	Ox(n) is ACTIVE	The identified chassis NID n is now active.
OPER	Ox(n) is STANDBY	The identified chassis NID n is now standby.
DEBUG	RGW heartbeat timeout	An RGW heartbeat timeout has occurred.
SENSOR	Sensor (s) path (p) SIFS heartbeat timeout	A SIFS heartbeat timeout has occurred on sensor s path p.
SENSOR	Sensor (s) sector mark timeout	A sector mark timeout has occurred on sensor s.
OPER	RGW NETWORK – MSGS LOST FROM NID Ox(n): (d) THRESHOLD: (t)	This chassis has lost d messages from NID n, which exceeds the threshold of t.

Class	Format	Description
DEBUG	RGW NETWORK – Rcv'd Application msg for queue (q) from invalid NID (x)	A message was received with the source NID field invalid x for queue q.
DEBUG	RGW NETWORK – Rcv'd Application msg from NID (d) for invalid queue: (q)	An invalid multiqueue q was referenced in message from NID d.
DEBUG	RGWn Heartbeat: y/n Sector Mark: xx Port: xx LAN: x	Printed for each RGW on chassis state change; n = RGW number (0 or 1); y/n = Yes or No; xx = number of sensors with good sector marks or good port status; x = number of good RGW LANs.

Appendix I

CONFIGURATION AND STATUS REQUEST MESSAGES

1.1 PI AND P2 CONFIGURATION STATUS REQUEST MESSAGES

The Configuration Status Request messages have the lowest priority and give information about the configuration of the system. A message of this type occurs when there are no Alphanumeric Keyboard Request messages or Internal Alarm messages in the output queue. There are two types of Configuration Status Request messages that can be requested through actions on the display keyboard. Each gives a set of information about the current status of all controller positions in the system.

The messages consist of a header followed by a list of pertinent data about each of the controller positions. A new line of data is printed for each position until all the controller positions are accounted for. Since the configuration messages have the lowest priority, the lines of a message may be interspersed with the Alphanumeric Keyboard Request or Internal Alarm messages. A summary of the data output in the first (P1) and second (P2) Configuration Status messages follows. These result from an F7,C,P1 /P2 keyboard entry (see Section 5, Keyboard Entries).

KEYBOARD (PI) CONFIGURATION STATUS REQUEST MESSAGE

Content	Description
(time) CFG1 (k) (sc)	Configuration P1 request header.
(kc) (di) (id) (ks) (sk)(s) (q . . .)	Information for first position.
. . . . . .	information for second position.
. . . . . .	Information for third position.
. . . . . .	Information for fourth position.

LEGEND

di	=	Display Identifier (number)
id	=	Sector ID to which keyboard belongs id = N)
k	=	Entering Keyboard Identifier (2 alphanumerics, subset and controller)
kc	=	Keyboard Identifier (subset and controller)
ks	=	Keyboard Status (C=Controller, M=Maintenance, P=Paired)
q	=	Quicklook position (up to a total of 5, including subset number)
s	=	Subsystem number (1 -n) (n=NSENSQ) (SV))
sk	=	Subset and Keyboard identifiers of the keyboards (up to 2) that the subject keyboard is paired with when ks = P (paired). When ks = C or M, this field is blank.
SC	=	Sector ID and current configuration number for each of the adapted sectors. Example: N3 S1.

ENTRY/EXIT FIX (P2) CONFIGURATION STATUS REQUEST MESSAGE

Content	Description
(time) CFG2 (k) (sc)	Configuration P2 request header.
(os)(n)(en)*(ex) (pc) (ac) (fs) (s) (PC1) (PC2) . . . (PCn)	Information for first fix pair.
. . . . .	Information for second fix pair.
. . . . .	Information for third fix pair.
. . . . .	Information for fourth fix pair.

LEGEND

ac	=	Active Controller Identifier (if different from PC) (2 alphanumerics including subset)
en	=	Entry fix
ex	=	Exit fix
fs	=	Flight status ("ARR", "DEP" or "OVR")
k	=	Entering Keyboard Identifier (2 alphanumerics including subset)
n	=	Current Configuration Number
os	=	Operational Sector ID Character
PC	=	Primary Controller Identifier (2 alphanumerics including subset)
Pcn	=	Primary Controller Identifier (2 alphanumerics including subset) for configurations 1 through n (n = NO_CFG_ITM)
s	=	Sensor Number
sc	=	Sector ID and current configuration number for each of the adapted sectors. Example: N3 S1

1.2 MSAW ENABLED GTM INHIBIT REGIONS

The following message is generated as a result of a clicking on the "MSAW Inhibit Region Report" icon in the Report Group on the SMC PC:

(time) ENABLED MSAW GTM INHIBIT REGIONS

NONE	If there are currently no MSAW GTM inhibits, or;
aa bb cc dd	Where letter pairs represent inhibited region numbers.

1.3 CA ENABLED MCI INHIBIT REGIONS

The following message is generated as a result of a clicking on the "MCI Inhibit Region Report" icon in the Report Group on the SMC PC.

(time) ENABLED MCI INHIBIT REGIONS

NONE	If there are currently no MCI inhibits, or;
CID (1) aa bb cc dd	Where CID is the controller ID, and letter pairs represent inhibited region numbers.
CID (2) hh ii jj kk II	

Appendix J

SYSTEM MONITOR STATION MESSAGES

J.l MENU AND DISPLAY MESSAGES

Each menu entry made at the SMS PC by the operator or each keyboard entry made on a display by a controller is responded to by the operating system. These messages keep the operator informed of system status in direct response to a preceding request. The format of these messages is as follows:

date time nid response pnnn ccc...c

where:

date	=	mm/dd/yy
time	=	hh:mm:ss
nid	=	Network identification
response	=	9 characters, may be filled with spaces
p	=	PC number
nnn	=	Line number
ccc...c	=	Echo of operator entry.

Note: PC number and Line number (pnnn) contain "****" when the SMS PC keyboard entry is made from a scenario.

Format	Description
OK pnnn ccc...c	A controller keyboard entry or PC keyboard entry is legal.
FORMAT pnnn ccc...c	A controller keyboard entry or PC keyboard entry has an illegal format.
CAPACITY pnnn ccc...c	A controller keyboard entry or PC keyboard entry violates a capacity limit.
NO SLEW pnnn ccc...c	A controller keyboard entry or PC keyboard entry contains no required slew entry.
ILL TRK pnnn ccc...c	A controller keyboard entry or PC keyboard entry has specified an illegal track.
ILL POS pnnn ccc...c	A controller keyboard entry or PC keyboard entry has been ordered from an illegal position.
ILL LINE pnnn ccc...c	A controller keyboard entry or PC keyboard entry has specified an illegal line number.

Format	Description
ILL FNCT pnnn ccc...c	A controller keyboard entry or PC keyboard entry has specified an illegal function.
IF WAIT pnnn ccc...c	An IF output message is pending for this track in response to a controller keyboard entry or PC keyboard entry.
DUP BCN pnnn ccc...c	A controller keyboard entry or PC keyboard entry has entered a duplicate DBC.
DUP ID pnnn ccc...c	A controller keyboard entry or PC keyboard entry has entered a duplicate aircraft ID.
IF INHIB pnnn ccc...c	The ARTCC interface does not exist or is not enabled in response to a controller keyboard entry or PC keyboard entry.
OPRND ERR pnnn ccc...c	A bad operand has been entered through a PC keyboard request.
FUNCT ERR pnnn ccc...c	A bad function has been requested through a PC keyboard request.
CP DOWN pnnn ccc...c	The PC keyboard request cannot be processed since the CP is not available.
TP DOWN pnnn ccc...c	The PC keyboard request cannot be processed since the TP is not available.
WWVB DOWN pnnn ccc...c	The PC keyboard request cannot be processed since the WWVB is not available.
ILL REQ pnnn ccc...c	An illegal request has been entered through a PC keyboard request.
????????? pnnn ccc...c	An unknown error status was returned from a supervisory entry.
INPUT INHIBITED	Indicates that the keyboard has been inhibited.
NOT ADAPTED	Requested operation not adapted.
NO RESP	No response from message sent to another CSCI.
UNEXPTD RESP	Response from another CSCI was not expected.

Appendix K

CDR EDITOR PRINTOUTS

```
                    C D R   E D I T O R   L I S T I N G

                X ------------(OPERATOR ENTERED COMMENTS)-------------

                                DATA SELECTED

                        XX XX XX XX  -- -- -- -- XX


                                    FILTERS

                        TIME: MM/DD/YY HH:MM:SS - MM/DD/YY HH:MM:SS
                CONTROLLER:XY----XY
ALTITUDE: 999-999   ACID: XXXXXXX XXXXXXX XXXXXXX XXXXXXX XXXXXXX      SUBSYSTEM: 99 99 99 99 99 99 99 99 99 99 99 99 99 99 99
                BEACON CODE: 7777 7777 7777 7777 7777  7777-7777x 7777-7777x 7777-7777x 7777-7777x 7777-7777x
                RANGE: 999-999        AZIMUTH:                    SYS X: 999-999     SYS Y: 999-999
                LIVE: X   ETG: X       INTERFACILITY: XX XX XX XX ---------------------- XX                NON-CONFLICT: X
```

FIGURE K-1. HEADER PAGE FORMAT

Automatic Functions - Data Type AF

AUTOMATIC FUNCTIONS

TIME	ACID	ABC	FUNCTION	REGION	ALTIMETER	X	Y	DDEG	DRAN	C	SYS	FC	REC
a	b	c	d	e	f	g	h	i	j	k	l	m	n
H:MM:SS.mmm	XXXXXXX	7777	XXXXXXXXXXXXX	AAA	99.99	+999.99	+999.99	999	999.99	XX	99	xx	9A

a)Time of Extraction
b)Aircraft ID
c)Assigned Beacon Code
d)Function - TERMINATE, ACQUIRE, TABULAR COAST, HANDOFF COAST,
SUSPEND COAST, INITIATE, GHOST INTIATE, GHOST DROP,
AUTO HANDOFF, ASSIGN BEACON, BLIND COAST,
AUTO SUSPEND, AUTO DISASSOC, DASI ALT, INTRA AHI
e)Region ID
f)Altimeter Setting
g)Displayed X Coordinate in NM
h)Displayed Y Coordinate in NM
i)Displayed Azimuth in degrees
j)Displayed Range in NM
k)Controller subset and symbol
l)Subsystem
m)Ghost Drop Fail Code
0 - Normal
1 - Beacon Match
2 - Runway Score
3 - Heading Tolerance
4 - Inner/Outer Boundaries
5 - Side Boundaries
6 - Unresolvable Ambiguities
n)INTRA AHO Handoff Receiver's Controller Symbol

FIGURE K-2. AUTOMATIC FUNCTIONS — DATA TYPE AF

Active Track Data - Data Type TP

TRACKING DATA

a	b	c	d	e	f	g	h	i	j			
TIME	TRACK NUMBER	AIRCRAFT ID/LINK	SENSOR NUMBER	----BEACON ASSIGNED	CODE--- REPORTED	CONTROLLER KEYBOARD	VELOCITY X KNOTS	VELOCITY Y KNOTS	SUBORD SENSOR	LIVE/SIMULATED:	AAA	bb
HH:MM:SS.mmm	9999	xxxxxxx	99	7777	7777	9A	+999	+999	99	ARR/DEP/OVERFLIGHT:	AAA	cc
										RADAR-ONLY:	AAA	dd
	k	1	m	n	o	p	q	r	s	FIRMNESS:	99	ee
	DISPLAY X NM	DISPLAY Y NM	DISPLAY AZI DEG	DISPLAY RANGE NM	PRED_AZIM ACP DEG	PREDICTED RANGE NM	SYSTEM X NM	SYSTEM Y NM	SPEED KNOTS	ALTITUDE FIRMNESS:	99A	ff
	+999.99	+999.99	9 9 9	999.99	9999 999	999.99	9999.99	9999.99	999	VALID ALTITUDE:	AAA	gg
										INHIBIT MSAW PROCESS:	AAA	hh
	t	u	v	w	x	y	z	aa		INHIBIT MSAW DISPLAY:	AAA	ii
	HEADING DEGREES	REPORTED ALT FEET	UNCORRECTED ALT FEET	SMOOTHED ALT FEET	PREDICTED ALT FEET	VELOCITY Z FT/SEC	ACCELERATION Z FT/SEC/SEC	ALT SLID WINDOW		RSB RANK:	9	kk
	999	+99999	+99999	+99999	+99999	+9999	999	11111				

jj

```
0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 4090 0000 0000 0000 4094 a000
0000 0000 40b0 0000 0000 0000 40b0 0000 0000 0000 40d0 0000 0000 0000 40d0 0000
0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0001 02b4 4a95
0000 0000 0000 09f5 0000 0000 0000 0000 0000 0000 0000 0000 0003 0002 0023 0102
0000 0000 0000 0000 0100 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000
0000 0000 4070 0000 0000 0000 40b0 0000 0000 0000 4088 0000 0000 0000 4084 0000
0000 0000 40a3 2400 0000 0000 4090 0000 0000 0000 0000 0000 0000 0000 0000 0000
000f 1300 0000 0000 0000 0001 0000 0000 0100 0000 0000 0000 0000 0000 0000 0000
0000 0000 0000 0000
```

a) Time of extraction
b) Track Number
c) Aircraft ID/Link
d) Sensor Number
e) Assigned Beacon Code if Present
f) Reported Beacon Code if Present
g) Controller Keyboard
h) X-Velocity Knots
i) Y-Velocity Knots
j) Subordinate Sensor if Present
k) Displayed X Coordinate in NM
1) Displayed Y Coordinate in NM
m) Displayed Azimuth in Degrees
n) Displayed Range in NM
o) Predicted Azimuth in ACPs and Degrees
p) Predicted Range in NM
q) System X Coordinate in NM
r) System Y Coordinate in NM
s) Speed in Knots
t) Heading in Degrees
u) Reported Altitude in Feet
or CST if coasting
or CST-dev if deviation coast
v) Uncorrected Altitude in Feet
or CST if coasting
or CST-dev if deviation coast
w) Smoothed Altitude in Feet
x) Predicted Altitude in Feet
y) Vertical Velocity in Feet/Sec
z) Vertical Acceleration in Feet/Sec/Sec
aa) Altitude Sliding Window
bb) 'ETG' if ETG Track
cc) 'ARR' = Arrival, 'DEP' = Departure,
'OVR' = Overflight, 'UNK' = Other/illegal
dd) 'YES' or 'NO'
ee) Firmness
ff) Altitude Firmness and Type,
where type 'P'= pilot reported altitude,
'M' = Mode C, 'V' = void
gg) 'YES' or 'NO'
hh) 'YES' or 'NO'
ii) 'YES' or 'NO'
jj) Hexadecimal Dump of ATF
kk) RSB rank (1 = highest, N = not in sort box)

FIGURE K-3. ACTIVE TRACK DATA — DATA TYPE TP

Beacon Replies - Data Type BR

BEACON REPLY

TIME	SENSOR	SECTOR	ACP	DEG	HWD ALARMS	RANGE	BCN	ALT	ALARMS
a	b	c	d	e	f	g	h	i	j
HH:MM:SS.mmm	99	99	9999	999	R S A O M D	999.999	7777	+999	X I G

a) Time of Extraction
b) Subsystem (sensor number)
c) Sector Number at time of extraction
d) Azimuth in ACPs
e) Azimuth in Degrees
f) Hardware Alarms
   'R' if Range Alarm
   'S' if Sensor Alarm
   'A' if Azimuth Alarm
   'O' if DAS Overload Condition
   'M' if Minimum Range
   'D' if ADC Alarm
   '*' if No Alarms
g) Range in NM
h) Beacon Code
i) Altitude in 100s of Feet
j) Reply Alarms
   'X' if X Pulse (unmanned)
   'I' if Identify
   'G' if Garble

FIGURE K-4. BEACON REPLIES — DATA TYPE BR

Target Reports - Data Type BT

BEACON STIME	TARGET SN	REPORTS RANGE NM	ACP	DEG	QUA	BEACON	ALT	COR ALT	SYSTEM X NM	SYSTEM Y NM	PS	STR	RSM	RL	BHC	AQ	TQ	TC	TE	TYP	SYS	RSB RNK
HH:MM:SS.mmm	99	999.99	9999	999	9	7777-9	+9999-9	+9999	9999.99	9999.99	9	ETG EM ID B25	99	999	999	9	9	9	9	BT	99	99
a	b	c	d	e	f	g	h	i	j	k	l	m n o p q	r	s	t	u	v	w	x	y	z	aa

a) Sector Time (first report of sector only)
b) Sector Number (first report of sector only)
c) Range in nautical miles
d) Azimuth in ACPs
e) Azimuth in degrees
f) Computed Tracking Quality
g) Beacon Code and Validity
h) Reported Altitude in 100's of feet and validity
i) Corrected altitude in 100's of feet
j) System X coordinate in nautical miles
k) System Y coordinate in nautical miles
l) Processing status where:
   0 = Report Not Discarded
   1 = Target out of System Range
   2 = Discarded Due to TRS Overflow
   3 = Discarded Due to OSP
   4 = Discarded - Sensor Not In Sync
   5 = Discarded Due to Sensor Masking
   6 = Discarded Due to Correlated Radar
   7 = Discarded due to Pseudo Sensor
   8 = Discarded Due to Sensor Tracking Disabled

m) 'W' for weak and 'S' for strong beacon report
n) 'ETG' if ETG report
o) 'EM' if Emergency or 'RF' if Radio Failure
p) 'ID' if SPI is set
q) Bit 25 is set
r) Remote System Monitor number (blank if not an RSM)
s) Beacon Run Length in ACPs
t) Beacon hit count
u) ARTS3A Quality
v) N/A
w) N/A
x) N/A
y) Type of report: BT
z) Subsystem
aa) RSB rank (1 = highest, N = not in sort box)

FIGURE K-5. TARGET REPORTS — DATA TYPE BT

Conflict Alert Data - Data Type CA

CONFLICT ALERT

a	b	c!	d	e	f	g	h	i	j	k	1	m	n	o	P
ACID	TIME	CONT	SUB	X	Y	Z	XDOT	YDOT	ZDOT	SPEED	HDG	TRN	FIRM	ARPT	CLS/LMD
xxxxxxx	HH:MM:SS.mmm	PA	99	+999.999	+999.999	99999	+999.99	+999.99	+9999.9	999	999	x	99 9	99 99R	+99.999
xxxxxxx		PA	99	+999.999	+999.999	99999	+999.99	+999.99	+9999.9	999	999	X	99 9	99 99R	+99.999

q	r	s	t	u	v	w	x	Y	z	aa
REL/CNV	TOL/TOM	DZ/DOT	TAV/TOC	LAT1/2	AL1/2	TOV/TYP	WINDOWS	ALOUT	PLMD	MISC
+999.99	+999.9	+9999.9	+999.9	+999.9	+999.9	+999.9	999 999	99	99.999	9 99
+999.99	+999.9	+9999.9	+999.9	+999.9	+999.9	9	999 999			99

a) Aircraft ID for both aircraft
b) Time of extraction
c) Controller symbols
d) Subsystem indicator
e) X Coordinate in NM
f) Y Coordinate in NM
g) Altitude in Feet
h) X-Velocity Knots
i) Y-Velocity Knots
j) Altitude Velocity in Feet/Min
k) Speed in Knots
1) Heading in Degrees
m) Turn Indicator. L or R, blank if no turn
n) Ground Plane Firmness
o) Consists of **four** fields. First field is the airport type, second is the airport number. Third field is the APAT slot number and the 'R' indicates a reflected type 2 area. If the airport type is 3, all other fields will be blank.
p) Current Lateral Separation and Lateral Miss Distance in NM
q) Relative Speed and Convergence in Knots
r) Times of Lateral Violation and Minimum Approach in Seconds
s) Difference in Altitude in Feet and Difference in Altitude Velocity in Feet/Min
t) Times of Altitude Violation when Converging and Co-altitude, Seconds
u) Starting and Ending Times of Lateral Conflict Interval in Seconds
v) Starting and Ending Times of Altitude Conflict Interval in Seconds
w) Time of Violation in Seconds and Combined Airport Type for the Pair
x) Top row, LINCOLN and MFMANS Sliding Windows
Bottom Row, PROCON and POPL Sliding Windows.
y) Algorithm Output. Bit encoded from this scan. Bit 0 = LINCON, Bit 1 = MFMAMS, Bit 2 = PROCON, Bit 3 = POPL. Bit 4 = IMMINENT
z) POPL Lateral Miss Distance.
aa) This field consists of three octal numbers specifying additional data about this pair of aircraft. The first field will be 1 if this pair was classified as parallel and 2 if this conflict has been determined by LINCON to be imminent. The second field is the B field of the Conflict Table. The field is bit encoded by conflict type and indicates which type of conflict the track pair is currently in : **bit 0 =** LINCON, **bit 1** = MFMAMS, bit 2 **=** PROCON, **bit** 3 = POPL. This data is from the previous scan. The third field specifies why LINCON found this pair not be in conflict. The octal values are as follows:
00 = Tracks are in conflict
01 = LOW track firmness or old data
02 = Slow closing but far apart in altitude
03 = Beginning conflict interval > 40 seconds away
04 = Altitude conflict has ended
05 = Relative speed < 60 knots and CLS > 1.2 nm
06 = TOLV discriminant < 0
07 = Time of minimum approach is large
10 = Lateral conflict has ended
11 = Altitude and lateral conflict interval don't intersect
12 = TOV > LKAQ
13 = Parallel conflicts are inhibited in this type 2 area

FIGURE K-6. CONFLICT ALERT DATA — DATA TYPE CA

```
System Monitor Console  - Data Type CO

ASCII STATUS
     a          b             c
HH:MM:SS.mmm  XX X----------------------        ----------X

  a) Time of Extraction
  b) Source NID
  c) ASCII Message
```

FIGURE K-7. SYSTEM MONITOR CONSOLE — DATA TYPE CO

CDR recorded Message Dumps - Data Type CR

```
CDR RECORDED MESSAGE DUMPS
    TIME                 SUBMESSAGES                              CONTENTS
 HH:MM:SS.mmm   aaaaaaaaaaaaaaaaaaaaaaaaaaaaaa    ffff ffff ffff ffff ffff ffff ffff ffff ffff ffff ffff ffff ffff ffff ffff
      a                     b                                                  c
```

a) Time of recorded message
b) Name of submessage
c) Contents of submessage in hexadecimal format

FIGURE K-8. CDR RECORDED MESSAGE DUMPS DATA TYPE CR

Central Track Store Data - Data Type CP

CTS TIME a	RECORDS ACID b	ABC c	RBC d	FRM e	RALT f	X g	Y h	DDEG i	DRAN j	xv k	YV 1	HDG m	SPD n	MI 0	DI p	ADS q	C	SYS rstu
HH:MM:SS.mmm	xxxxxxx-9999	7777	7777	99	+99999	t999.99	+999.99	999	999.99	+999	+999	999	999	I	D	XXX	XX ETG	RO 99

v

```
00000000  0040575d 002d1150 000000cd 00000800 00000000 00000000 7ffdf000 00000824 00000000 0000001c 002d1130 0012ff08 004053be
00000800  00000002 0041bc84 00000086 00000000 00000000 7ffdf000 002d0300 0012ff30 00405361 00000800 00000000 00000002 0041bc84
00000086  00000000 00000000 7ffdf000 0012ff60 000157c8 00000800 41574e02 34333231 000a0000 00000000 00000000 7ffdf000 002d1150
```

a) Time of Extraction
b) Aircraft ID - System Track Number
c) Assigned Beacon Code if present (or TABC)
d) Reported Beacon Code if present
e) Firmness
f) Reported Altitude in Feet (or CST)
g) Displayed X Coordinate in NM
h) Displayed Y Coordinate in NM
i) Displayed Azimuth in degrees
j) Displayed Range in NM
k) X-Velocity Component in Knots
1) Y-Velocity Component in Knots
m) Heading in degrees
n) Speed in Knots
0) 'I' if MSAW inhibited
p) 'D' if display inhibited
q) 'ARR' = Arrival, 'DEP' = Departure, 'OVR' = Overflight, 'UNK' = Unknown or illegal
r) Controller Symbol and Subset Number
s) 'ETG' if ETG Track
t) 'RO' if radar only
u) Subsystem
v) Hexadecimal Dump of FDF, CACTS, GDF, ADF data

FIGURE K-9. CENTRAL TRACK STORE DATA — DATA TYPE CP

```
Data Delete/Resume Format  - All Applicable Output

     a                    b        c
HH:MM:SS.mmm  DATA     XXXXXX     XX

  a) Time of Extraction
  b) 'DELETE' or 'RESUME'
  c) Data Class Code (RT, BT, etc.)
```

FIGURE K-10. DATA DELETE/RESUME FORMAT

Duplicate Beacon Target Reports - Data Type DB

DUPLICATE STIME	BEACON SN	TARGET RANGE NM	ACP	DEG	QUA	BEACON	ALT	COR ALT	SYSTEM X NM	SYSTEM Y NM	PS	STR	RSM	RL	BHC	AQ	TQ	TC	TE	TYP	SYS	RSB RNK
HH:MM:SS.mmm	99	999.99	9999	999	9	7777-9	+9999-9	+9999	9999.99	9999.99	9	ETG	EM	ID	B25	99	999	999	9	9	9	9	BT	99	99
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	aa

a) Sector Time (first report of sector only)
b) Sector Number (first report of sector only)
c) Range in nautical miles
d) Azimuth in ACPs
e) Azimuth in degrees
f) Computed Tracking Quality
g) Beacon Code and validity
h) Reported Altitude in 100's of feet and validity
i) Corrected altitude in 100's of feet
j) *System* X coordinate *in* nautical *miles*
k) System Y coordinate in nautical miles
1) Processing status where:
   0 = Report Not Discarded
   1 = Target out of System Range
   2 = Discarded Due to TRS Overflow
   3 = Discarded Due to OSP
   4 = Discarded - Sensor Not In Sync
   5 = Discarded Due to Sensor Masking
   6 = Discarded Due to Correlated Radar
   7 = Discarded Due to Pseudo Sensor
   8 = Discarded Due to Sensor Tracking Disabled

m) 'W' for weak and 'S' for strong beacon report
n) 'ETG' if ETG report
o) 'EM' if Emergency or 'RF' if Radio Failure
p) 'ID' if SPI is set
q) Bit 25 is set
r) Remote System Monitor number (blank if not an RSM)
s) Beacon Run Length in ACPs
t) Beacon hit count
u) ARTS3A Quality
v) N/A
w) N/A
x) N/A
y) Type of report: BT or RB
z) Subsystem
aa) RSB rank (1 = highest, N = not in sort box)

FIGURE K-l 1. DUPLICATE BEACON TARGET REPORTS — DATA TYPE DB

```
Data Loss Format  - All Output

     a                    b
HH:MM:SS.mmm  DATA LOSS 999

  a) Time of Extraction
  b) Number of Messages Lost
```

FIGURE K-12. DATA LOSS FORMAT

Ghost Data Report – Data Type GD

GHOST DATA REPORTS

TIME	ACID	STN	SPD	ACC	C	AID	RID	RWY	ETG	BCN	X	Y	DDEG	DRNG	DELX	DELY	SYS	FAIL
a	b	c	d	e		fg	h	i	j	k	1	m	n	o	p	q	r	s
HH:MM:SS.mmm	xxxxxxx	999	999	x	xx	x	X	xxx	xxx	9999	+99.99	+99.99	999	999.99	+9.99	+9.99	99	99

a) Time of Extraction
b) Aircraft ID
c) Flight Plan Number (Track Projecting Ghost)
d) Speed in Knots (or 'CST')
e) Aircraft Condition Code
'H' for Heavy
'T' for TCAS
'B' for Heavy and TCAS
A space when none of these conditions exist.
f) Controller Symbol and Subset Number of STN track
g) Airport Identification (Ghost Data Block)
h) Runway Identification (Ghost Data Block)
i) Runway Number (Ghost Data Block)
j) 'ETG' if Training Track
k) Beacon Code
l) GDB Displayed X Coordinate in Controlling Sensor (SYS)
m) GDB Displayed Y Coordinate in Controlling Sensor (SYS)
n) GDB Displayed Azimuth in Degrees
o) GDB Displayed Range in NM
p) Delta X (Associated Track X minus GDB X) in NM
q) Delta Y (Associated Track Y minus GDB Y) in NM
r) Sensor Number of Associated Track
s) Qualification Failure Count

FIGURE K-l 3. GHOST DATA REPORT — DATA TYPE GD

Interfacility Message - Data Types IF, II, IO

```
INTERFACILITY MESSAGE
    TIME      DIR  MESSAGE
      a        b      c
HH:MM:SS.mmm XXX X----------------------X
```

a) Time of Extraction
b) INP for Input, OUT for Output
c) Message Contents where
    ; = LRC
    : = EOM
    ? = Clear Weather Symbol

A typical flight plan (FP) message would appear as :
03:05:41.632 OUT ZCN0102001 ;FP 12BAPP1 1 0022 SAT A0103 010 JFK ;:

FIGURE K-14. INTERFACILITY MESSAGE — DATA TYPES IF, II, IO

```
Initialization   Format  - All Output

     a            b                                  c
HH:MM:SS.mmm  MM/DD/YY CDR INITIALIZED    SITE : XXX

  a) Time of Extraction
  b) Date
  c) Site ID
```

FIGURE K-I 5. INITIALIZATION FORMAT

Keyboard Entry Data - Data Type KF

KEYBOARD FUNCTIONS

TIME a	ACID b	IMP c	FCN d	ENTRY e	XT f	YT g	TDEG h	TRAN i	C j	ERROR k	SYS 1
HH:MM:SS.mmm	xxxxxxx	I	99	X----------X	+999.99	+999.99	999	999.99	xx	xxxxxxxxxxxxxxx	xx
					m	n	o	p			
					+999.99	+999.99	999	999.99			

a) Time of Extraction
b) Aircraft ID
c) 'I' if Implied Function
d) Function Number Entered
e) Entry Contents
f) Slew Entry Device X if entered *
g) Slew Entry Device Y if entered *
h) Slew Entry Device Degrees if entered **
i) Slew Entry Device Range if entered **
j) Controller Subset and Controller
k) Error Indication (FORMAT, NO SLEW, etc)
1) Subsystem or M if display is in mosaic mode
m) 2nd Slew Entry Device X if entered *
n) 2nd Slew Entry Device Y if entered *
o) 2nd Slew Entry Device Degrees if entered **
p) 2nd Slew Entry Device Range if entered **

* In single-sensor mode coordinates are relative to sensor origin.
In mosaic mode coordinates are relative to system origin.
** TDEG and TRAN are only applicable in single-sensor mode.

FIGURE K-l 6. KEYBOARD ENTRY DATA — DATA TYPE KF

MSAW Alarm Data - Data Type MA

MSAW ALARMS

TIME	ACID	X	Y	DDEG	DRAN	SALT	F	TYP	XB	YB	VALT	APT	RWY		DSP	C	SYS
a	b	c	d	e	f	g		h	i	j	k	l	m	n	0	p	4
HH:MM:SS.mmm	xxxxxxx-999	+999.99	+999.99	999	999.99	99999-99		xxx	99	99	99999	99	99	xxx	99	xx	99

a) Time of Extraction
b) Aircraft ID - Track Number
c) Displayed X Coordinate in NM
d) Displayed Y Coordinate in NM
e) Displayed Degrees
f) Displayed Range in NM
g) Smoothed Altitude - Firmness
h) Alarm Type, 'APW' if Approach Warning
'GTW' if General Terrain Warning
i) X-Bin number if GTW
j) Y-Bin number if GTW
k) Track Predicted altitude at the time of violation, Feet
1) Airport Number if APW
m) Runway Number if APW
n) 'CUR' if current alarm, 'PRE' if predicted, 'PRO' if projected
o) Display Number
p) Controller and Subset
q) Subsystem

FIGURE K-i 7. MSAW ALARM DATA — DATA TYPE MA

Target Reports - Data Type RB

RADAR STIME	REINFORCED SN	TARGET RANGE NM	REPORTS ACP	DEG	QUA	BEACON	ALT	COR ALT	SYSTEM X NM	SYSTEM Y NM	PS	STR					RSM	RL	BHC	AQ	TQ	TC	TE	TYP	SYS	RSB RNK
HH:MM:SS.mmm	99	999.99	9999	999	9	7777-9	+9999-9	+9999	9999.99	9999.99	9		ETG	EM	ID	B25	99	999	999	9	9	9	9	BT	99	99
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	aa

a) Sector Time (first report of sector only)
b) Sector Number (first report of sector only)
c) Range in nautical miles
d) Azimuth in ACPs
e) Azimuth in degrees
f) Computed Tracking Quality
g) Beacon Code and Validity
h) Reported Altitude in 100's of feet and validity
i) Corrected altitude in 100's of feet
j) System X coordinate in nautical miles
k) System Y coordinate in nautical miles
l) Processing status where:
   0 = Report Not Discarded
   1 = Target out of System Range
   2 = Discarded Due to TRS Overflow
   3 = Discarded Due to OSP
   4 = Discarded - Sensor Not In Sync
   5 = Discarded Due to Sensor Masking
   6 = Discarded Due to Correlated Radar
   7 = Discarded Due to Pseudo Sensor
   8 = Discarded Due to Sensor Tracking Disabled

m) 'W' for weak and 'S' for strong beacon report
n) 'ETG' if ETG report
o) 'EM' if Emergency or 'RF' if Radio Failure
p) 'ID' if SPI is Set
q) Bit 25 is set
r) Remote System Monitor number (blank if not an RSM)
s) Beacon Run Length in ACPs
t) Beacon hit count
u) ARTS3A Quality
v) N/A
w) N/A
x) N/A
y) Type of report: RB
z) Subsystem
aa) RSB rank (1 = highest, N = not in sort box)

FIGURE K-I 8. TARGET REPORTS — DATA TYPE RB

Radar Data Loss - Data Types RT, RB, TG, TA, TU and TP

a		b		c	d
HH:MM:SS.mmm	SECTOR NUMBER:	99	RADAR DATA LOSS:	999	99

a) Time of Extraction
b) Sector Number
c) Number of Messages Lost
d) Subsystem

TOTAL	9999	9999	99.9

FIGURE K-19. RADAR DATA LOSS — DATA TYPES RT, RB, TG, TA, TU AND TP

SMC Keyboard Entry Data - Data Type SF

KEYBOARD FUNCTIONS

TIME	ACID	IMP	FCN	ENTRY	XT	YT	TDEG	TRAN	C	ERROR	SYS
a	b	c	d	e	f	g	h	i	j	k	l
HH:MM:SS.mmm			99	X----------- ----X					XX	XXXXXXXXXXXXXXX	

a) Time of Extraction
b) N/A
c) N/A
d) Function Number Entered
e) Entry Contents
f) N/A
g) N/A
h) N/A
i) N/A
j) PC ID
k) Error Indication
l) N/A

FIGURE K-20. SMC KEYBOARD ENTRY DATA DATA TYPE SF

Plot Separation - Data Type SP

PLOT SEPARATION DATA

	TRACK XY POSITION									TRACK SEPARATION					
	a			b			c			d		e		f	
	xxxxxxx			xxxxxxx			xxxxxxx			xxxxxxx-xxxxxxx		xxxxxxx-xxxxxxx		xxxxxxx-xxxxxxx	
g	h	i	j	k	1	m	n	o	P	q	r	s	t	u	v
TIME	X	Y	ALT	X	Y	ALT	X	Y	ALT	LATERAL	ALT	LATERAL	ALT	LATERAL	ALT
HH:SS:MM	+999.99	+999.99	999	+999.99	+999.99	999	+999.99	+999.99	999	99.99	999	99.99	999	99.99	999

a) Track 1 ID (Aircraft ID or Beacon Code)
b) Track 2 ID (Aircraft ID or Beacon Code) if present
c) Track 3 ID (Aircraft ID or Beacon Code) if present
d) Track 1 and Track 2 ID if Track 2 is present
e) Track 1 and Track 3 ID if Track 3 is present
f) Track 2 and Track 3 ID if Track 3 is present
g) Time of Extraction for Track 1
h) Track 1 X-Coordinate in NM
i) Track 1 Y-Coordinate in NM
j) Track 1 Altitude in 100s of Feet
k) Track 2 X-Coordinate in NM if track present
1) Track 2 Y-Coordinate in NM if track present
m) Track 2 Altitude in 100's of Feet if track present
n) Track 3 X-Coordinate in NM if track present
o) Track 3 Y-Coordinate in NM if track present
p) Track 3 Altitude in 100's of Feet if track present
q) Lateral Separation between track 1 and track 2 in NM
r) Altitude Separation between track 1 and track 2 in 100s of ft
s) Lateral Separation between track 1 and track 3 in NM
t) Altitude Separation between track 1 and track 3 in 100s of ft
u) Lateral Separation between track 2 and track 3 in NM
v) Altitude Separation between track 2 and track 3 in 100s of ft

FIGURE K-21. PLOT SEPARATION — DATA TYPE SP

Tracking Data - Data Type TA or TU

TRACKING DATA

a	b	c	d	e	f	g	h	i	j		
TIME	TRACK NUMBER	AIRCRAFT ID/LINK	SENSOR NUMBER	----BEACON ASSIGNED	CODE--- REPORTED	CONTROLLER KEYBOARD	VELOCITY X KNOTS	VELOCITY Y KNOTS	SUBORD SENSOR	LIVE/SIMULATED:	AAA bb
HH:MM:SS.mmm	9999	xxxxxxx	99	7777	7777	9A	+999	+999	99	ARR/DEP/OVERFLIGHT:	AAA cc
										RADAR-ONLY:	AAA dd
	k	l	m	n	o	p	q	r	s	FIRMNESS:	99 ee
	DISPLAY X NM	DISPLAY Y NM	DISPLAY AZI DEG	DISPLAY RANGE NM	PRED AZIM ACP-DEG	PREDICTED RANGE NM	SYSTEM X NM	SYSTEM Y NM	SPEED KNOTS	ALTITUDE FIRMNESS:	99A ff
	+999.99	+999.99	999	999.99	9999 999	999.99	9999.99	9999.99	999	VALID ALTITUDE:	AAA gg
										INHIBIT MSAW PROCESS:	AAA hh
	t	u	v	w	x	y	z		aa	INHIBIT MSAW DISPLAY:	AAA ii
	HEADING DEGREES	REPORTED ALT FEET	UNCORRECTED ALT FEET	SMOOTHED ALT FEET	PREDICTED ALT FEET	VELOCITY Z FT/SEC	ACCELERATION Z FT/SEC/SEC	ALT WINDOW	SLID	RSB RANK:	9 jj
	999	+99999	+99999	+99999	+99999	+9999	+999	11111			

a) Time of extraction
b) Track Number
c) Aircraft ID/Link if associated
d) Sensor Number
e) Assigned Beacon Code if Present
f) Reported Beacon Code if Present
g) Controller Keyboard if associated
h) X-Velocity Knots
i) Y-Velocity Knots
j) Subordinate Sensor (header and data)if Present
k) Displayed X Coordinate in NM
l) Displayed Y Coordinate in NM
m) Displayed Azimuth in Degrees
n) Displayed Range in NM
o) Predicted Azimuth in ACPs and Degrees
p) Predicted Range in NM
q) System X Coordinate in NM
r) System Y Coordinate in NM
s) Speed in Knots
t) Heading in Degrees
u) Reported Corrected Altitude in Feet or CST if coasting or CST-dev if deviation coast
v) Reported Uncorrected Altitude in Feet or CST if coasting or CST-dev if deviation coast
w) Smoothed Uncorrected Altitude in Feet
x) Predicted Uncorrected Altitude in Feet
y) Vertical Velocity in Feet/Sec
z) Vertical Acceleration in Feet/Sec/Sec
aa) Altitude Sliding Window
bb) 'ETG' if ETG Track (in Training mode only)
cc) 'ARR' = Arrival, 'DEP' = Departure, 'OVR' = Overflight, 'UNK' = Other/illegal if associated
dd) 'YES' or 'NO'
ee) Firmness
ff) Altitude Firmness and Type, where type 'P' = pilot reported altitude, 'M' = Mode C, 'V' = void
gg) 'YES' or 'NO'
hh) 'YES' or 'NO' if associated
ii) 'YES' or 'NO' if associated
jj) RSB rank (1 = highest, N = not in sort box)

FIGURE K-22. TRACKING DATA — DATA TYPE TA OR TU

```
Termination   Format  -  All  Output

      a
HH:MM:SS.mmm  CDR   TERMINATED

  a)  Time  of  Extraction
```

FIGURE K-23. TERMINATION FORMAT

Target Reports - Data Type TG

```
TARGET   REPORTS
  STIME         SN  RANGE    ACP  DEG  QUA  BEACON  ALT    COR   SYSTEM  SYSTEM  PS  STR              RSM RL BHC AQ TQ TC TE TYP SYS RSB
                     NM                                    ALT   X    NM   Y   NM                                                          RNK
HH:MM:SS.mmm  99  999.99   9999  999   9   7777-9  +9999-9 +9999 9999.99  9999.99  9     ETG EM ID B25 99 999 999 9  9  9  9  xx   99  99
          a    b    c       d     e    f     g       h              j       k    l  m  n   o  p  q    r  s    t  u  v  w  x    y    z  aa
```

a) Sector Time (first report of sector only)
b) Sector Number (first report of sector only)
c) Range in nautical miles
d) Azimuth in ACPs
e) Azimuth in degrees
f) Computed Tracking Quality
g) Beacon Code and Validity
h) Reported Altitude in 100's of feet and validity
i) Corrected altitude in 100's of feet
j) System X coordinate in nautical miles
k) System Y coordinate in nautical miles
l) Processing status where:
   0 = Report Not Discarded
   1 = Target out of System Range
   2 = Discarded Due to TRS Overflow
   3 = Discarded Due to OSP
   4 = Discarded - Sensor Not In Sync
   5 = Discarded Due to Sensor Masking
   6 = Discarded Due to Correlated Radar
   7 = Discarded Due to Pseudo Sensor
   8 = Discarded Due to Sensor Tracking Disabled
m) 'W' for weak and 'S' for strong beacon report (blank for radar report)
n) 'ETG' if ETG report
o) 'EM' if Emergency or 'RF' if Radio Failure
p) 'ID' if SPI is set
q) Bit 25 is set
r) Remote System Monitor number (blank if not an RSM)
s) Beacon Run Length in ACPs
t) Beacon hit count
u) ARTS3A Quality
v) Target Quality
w) Target Confidence
x) Track Eligibility
y) Type of report: RB, RT, BT
z) Subsystem
aa) RSB rank (1 = highest, N = not in sort box)

FIGURE K-24. TARGET REPORTS — DATA TYPE TG

Target Reports - Data Type RT

RADAR STIME	ONLY SN	TARGET REPORTS RANGE NM	ACP	DEG	QUA	BEACON	ALT	COR ALT	SYSTEM X NM	SYSTEM Y NM	PS		RSM	RL	BHC	AQ	TQ	TC	TE	TYP	SYS	RSE! RNK
HH:MM:SS.mmm	99	999.99	9999	999	9	7777-9	+9999-9	+9999	9999.99	9999.99	9	ETG EM ID B25	99	99	999	9	9	9	9	RT	99	99
a	b	c	d	e	f	g	h		j	k	l	m n o p q	r	s	t	u	v	w	x	y	z	aa

a) Sector Time (first report of sector only)
b) Sector Number (first report of sector only)
c) Range in nautical miles
d) Azimuth in ACPs
e) Azimuth in degrees
f) Computed Tracking Quality
g) N/A
h) N/A
i) N/A
j) System X coordinate in nautical miles
k) System Y coordinate in nautical miles
l) Processing status where:
   0 = Report Not Discarded
   1 = Target out of System Range
   2 = Discarded Due to TRS Overflow
   3 = Discarded Due to OSP
   4 = Discarded - Sensor Not In Sync
   5 = Discarded Due to Sensor Masking
   6 = Discarded Due to Correlated Radar
   7 = Discarded Due to Pseudo Sensor
   8 = Discarded Due to Sensor Tracking Disabled

m) Blank for radar report
n) 'ETG' if ETG report
o) 'EM' if Emergency or 'RF' if Radio Failure
p) 'ID' if SPI is set
q) Bit 25 is set
r) Remote System Monitor number (blank if not an RSM)
s) Beacon Run Length in ACPs
t) N/A
u) ARTS3A Quality
v) Target Quality
w) Target Confidence
x) Track Eligibility
y) Type of report: RT
z) Subsystem
aa) RSB rank (1 = highest, N = not in sort box)

FIGURE K-25. TARGET REPORTS — DATA TYPE RT

```
CP/TP Failure/Recovery - All Output

     a                          b
HH:MM:SS.mmm CP/TP STATUS XXXXXXXXXXXX
  a) Time of Extraction
  b) Status Type: 'CP FAILED', 'CP RECOVERED', 'TP FAILED', 'TP RECOVERED'
```

FIGURE K-26. CP/TP FAILURE/RECOVERY — ALL OUTPUT

Plot Data - Data Type PL

There is no specific CDR Editor printout for this data type. For each track plotted 4 files (XXXXXX.COL, XXXXXX.DAT, XXXXXX.LAB, and plot_trk.dat) are created for the COTS plot software tool GNUPLOT.

FIGURE K-27. PLOT DATA — DATA TYPE PL

```
ATMIS Data Report - Data Type AT

ATMIS DATA
    TIME      ACID     ECID SPD ALT LAT   LONG
      a         b        c   d   e   f      g
HH:MM:SS.mmm XXXXXXX  XXX XXX XXX XXXXX XXXXX

  a) Time of Extraction
  b) Aircraft ID
  c) Enroute ID
  d) Speed
  e) Altitude
  f) Latitude
  g) Longitude
```

FIGURE K-28. ATMIS DATA REPORT DATA TYPE AT

```
Scan End Statistic  - Data Types RT, BT, DB, RB, TG, TA and TU

   END TIME     START TIME          TARGET REPORTS: LIVE SIMULATED     VALID MODE-C:       9999
HH:MM:SS.mmm HH:MM:SS.mmm               RADAR-ONLY  9999   9999                         999.9%1
SENSOR =  99                            BEACON-ONLY 9999   9999
                                     RADAR & BEACON  9999   9999        VALID MODE-3/A:     9999
                                              TOTAL  9999   9999                         999.9%1

1  Range of this value is 00.0% to 100.0%.
```

FIGURE K-29. SCAN END STATISTIC — DATA TYPES RT, BT, DB, RB, TG, TA, AND TU

CDR FAST Advisory Data - Data Type FS

CDR FAST Advisory Data

a	b	c	d	e	f
TIME	ACID	VF1	BUFFER 1	VF2	BUFFER 2
HH:MM:SS.mmm	xxxxxxx	1	xxxxxxxxxx	1	xxxxxxxxxx

a) Time of extraction
b) Aircraft ID
c) Buffer 1 validity flaq
d) Buffer 1 characters
e) Buffer 2 validity flaq
f) Buffer 2 characters

FIGURE K-30. CDR FAST ADVISORY DATA — DATA TYPE FS

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```
Inter-Sensor  Linking - Data  Type  IL

INTER-SENSOR   LINKING                                                          k . . .
    TIME       STATUS SYS TRACK ID  STF   SST  SEN  DST  SEN RANK XXX XXX . . . XXX
      a          b               c    d     e    f      g      hi    j  .  .  .
HH:MM:SS.mmm  xxxxx          xxxxxxx 9999 999 xxx 999  xxx  9   999 999 . . . 999

  a) Time Of Extraction
  b) Link Status - PER (Periodic Link Maintenance Msg), INIT, BREAK, DSTC (Displayed Sensor Track Change),
                   SSTC (Supporting Sensor Track Change), TERM (Terminate System Track)
  c) ACID, Reported Beacon Code , or RDR
  d) System track number
  e) Supporting sensor track number
  f) Sensor of the supporting sensor track
  g) Displayed sensor track number
  h) Sensor of the displayed sensor track
  i) RSB rank of displayed sensor (1 = highest, N = not in RSB)
  j) Link sensor track number (variable in length)
  k) Header containing sensor name of the link sensor track (variable in length)
```

FIGURE K-31. INTER-SENSOR LINKING — DATA TYPE IL

ASR-9 Weather Report - Data Type WX

```
ASR-9 WEATHER DATA
      a          b          c           d           e
    TIME       SENS     WX-SECTOR  WX-LEVEL    INTENSITY
HH:MM:SS.mmm    sss        255         6        0-29.5 NM: 11111 11111 11111 11111 22222 22222 22222 22222 33333 33333 33333 33333
                                               30-59.5 NM  44444 44444 44444 44444 55555 55555 55555 55555 66666 66666 66666 66666
```

a) Time of Extraction
b) Sensor Name
c) Wedge (sector) number (0-255), one wedge = 16 ACPs
d) Weather level (2 or 6)
e) ASR9 Weather Intensity Values (1– 6) per 1/ 2 NM increments

FIGURE K-32. ASR-9 WEATHER REPORT — DATA TYPE WX

Variable Map Report - Data Type WX

VARIABLE MAP DATA

a	b	c	d	e	f
TIME	SENS	ST RNG	END RNG	AZIMUTH	TYPE
HH:MM:SS.mmm	sss	99.99	99.99	9999 999	6

a) Time of Extraction
b) Sensor Name
c) Starting Range (NM)
d) Ending Range (NM)
e) Azimuth in ACPs and degrees of the right (clockwise) edge of the sector as seen from the sensor
f) Type of Weather (6 = light, 5 = heavy, 0 = medium)

FIGURE K-33. VARIABLE MAP REPORT — DATA TYPE WX

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Appendix L

CDR EDITOR SOFTWARE (CDRES) STATUS AND ERROR MESSAGES

L.I CDRES STATUS MESSAGES

Message	Description
NO DATA FOUND ON FIRST INPUT DEVICE	No CDR data was found on the first input device.
NO DATA FOUND ON SECOND INPUT DEVICE	No CDR data was found on the second input device.
EDITING COMPLETED — END OF DATA	The end of the requested data has been reached.
ABORT — OUTPUT ERROR	An error has been encountered writing to the output device.
ABORT — MAX AFPMS EXCEEDED	The CDR data contains more than the maximum allowed distinct Flight Plan Maintenance messages.
ABORT — BAD MSG LENGTH IN RECORDED MSG	A message with an invalid message length was found in the CDR data.
ABORT — READ ERROR ENCOUNTERED	An error was encountered reading the CDR data from the input device.
ERROR IN OPENING THE OUTPUT FILE	An error was encountered opening the output file.
ERROR IN OPENING **ONE OF THE CDR** FILES	An error was encountered opening one of the three CDR files.
EDITING COMPLETED — STOPPED BY OPERATOR	CDR editing session was manually stopped by the operator.
ABORT — PLOT FILE CREATION ERROR	The plot file was unable to be created on the specified directory.
ABORT — PLOT FILE WRITE ERROR	An error was encountered writing to the selected plot file.
ABORT — PLOT FILE READ ERROR	An error was encountered reading from the plot file.
ABORT — TRACS FILE OPEN OR WRITE ERROR	An error was encountered opening or writing to the TRACS file.
ABORT — NO OR TOO MANY PLOT SENSORS	No or more than one sensor filter has been selected for the SP and/or PL data classes.

Message	Description
ABORT — NO OUTPUT DIRECTOR ENTERED	No directory for the CDR output file has been selected.
ABORT — NO PLOT DIRECTOR ENTERED	PL data class has been selected and no directory for the plot file has been selected.
EDITING HAS STARTED	CDR editing has started on the selected input device.
BAD MSG Ox7777 at DD/MM/YY HH:MM:SS.mmm	An invalid message code has been found in the CDR extracted data at the listed date and time.
Processing msg at DD/MM/YY HH:MM:SS.mmm	Editing is in session and the message at specified date/time is being processed.

L.2 CDRES OPERATOR INPUT ERROR MESSAGES

L.2.1 ACID Filter Input Errors

Message	Description
Too many IF ACIDs entered, only 1 is allowed	An attempt to enter more than one Inter-facility ACID has been made.
Invalid entry — FP inter-facility type is not enabled	An Interfacility ACID has been entered and the FP Inter-facility type is not enabled.
Too many ACIDs entered, only 5 are allowed	More than five ACIDs have been entered.
ACID at line X contains too many characters	ACID at line X has more than seven characters.
ACID at line X contains less than two characters	ACID at line X has only one character.
First character of ACID at line X is not an alpha	ACID at line X does not have a leading alpha character.
Second character of ACID at line X is not a digit	The second character of a two character ACID is not a digit.
Character Y of ACID at line X is not alphanumeric	The character at position Y of an ACID is not alphanumeric.
Invalid entry — an IF type other than FP is enabled	An Inter-facility ACID has been entered and an Inter-facility type besides FP has been entered.

L.2.2 Altitude Filter Input Errors

Message	Description
Altitude at line X has too many characters	Altitude at line X has more than three characters. Leading zeroes are not counted.
Altitude on line X is not a valid positive integer	Altitude at line X is not a positive integer.
End altitude is less than or equal to start altitude	

L.2.3 Azimuth Filter Input Errors

Message	Description
Azimuth at line X has too many characters	Azimuth at line X has more than three characters. Leading zeroes are not counted.
Azimuth on line X is out of the range 0 to 360	
Azimuth on line X is not a valid positive integer	Altitude at line X is not a positive integer.

L.2.4 Beacon Code Filter Input Errors

Message	Description
Too many beacon codes starting at line X	A sixth beacon code has been entered at line X.
Beacon code on line X is not octal	
Too many beacon blocks starting at line X	A sixth beacon code block has been entered at line X.
Invalid beacon block at line X	More than four characters entered for a beacon code block at line X.
Beacon start code on line X is not octal	
Beacon end code on line X is not octal	
Beacon block invalid, end less than start on line X	The beacon code start is less than the beacon code end in a beacon block at line X.
Beacon block invalid, end equals start on line X	The beacon code start is equal to the beacon code end in a beacon block at line X.
Block discrete character invalid on line X	Discrete character for a beacon block is not an N,D or blank.
Invalid nbr of beacon characters entered on line X	More than four characters entered for a beacon code at line X.

L.2.5 Controller Filter Input Errors

Message	Description
Too many controllers entered, only 30 allowed	More than 30 controllers have been entered.
Controller at line X does not have two characters	
Controller subset at line X is not a digit	
Controller symbol at line X is not alphanumeric	

L.2.6 Date and Time Filter Input Errors

Message	Description
Invalid year entry, start year greater than end year	
Invalid date entry, start date after end date	
invalid time entry, stat-t time after end time	
Invalid time entry, start time equals end time	

L.2.7 Disk Address Filter Input Errors

Messaae	Description
Address at line X has too many characters	More than six characters entered for an address.
Too many addresses entered	More than two addresses entered.
Address on line X is greater than CDR file maximum	
Address on line X is not a valid positive integer	Altitude at line X is not a positive integer.
Start address is greater than or equal to end address	

L.2.8 Plot Interval Filter Input Errors

Messaae	Description
Plot interval not valid, valid range is 1 thru 15	

L.2.9 Range Filter Input Errors

Message	Description
Range at line X has too many characters	Range at line X has more than three characters. Leading zeroes are not counted.
Range on line X is out of the range 0 to 256	
Range on line X is not a valid positive integer	Range at line X is not a positive integer.
End range is less than or equal to start range	

L.2.10 Data Class Input Error

Message	Description
TRACS Data is mutually exclusive	TR data class has been selected when another data class has already been selected.

L.2.11 System Plane Filter Errors

Message	Description
Coordinate X has too many characters	Coordinate X has more than 3 characters.
Coordinate X is out of the range 0 to MAX_SYS_XY	Coordinate is out of the system plane.
Coordinate X is not a valid positive integer	Coordinate is not a positive integer.
Not all coordinates entered	Exactly 4 coordinates were not entered.
Max coordinate less than or equal to min coordinate	Maximum coordinates for both x and y have to be greater than minimum coordinates for x and y.

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Appendix M

PERFORMANCE DATA RECORDING

Performance Data (PD) for the following functions are recorded for later analysis:

a. Automated Traffic Count

b. Performance Monitor Printout

c. Facility Sign-On/Sign-Off Log

d. CDR Data

e. Track Amplify Data

f. CQARS Data.

Each type of performance data is recorded in DOS format in a file on the SMC PC or PD PC (ARTS IIIE only) hard disk. New files are created after a change in system date. The file naming convention is as follows:

a. Automated Traffic Count = TRAFICdd.PDR

b. Performance Monitor Printout = PERFORdd.PDR

c. Facility Sign-On/Sign-Off Log = SIGNONdd.PDR

d. CDR Data = CDRdd.PDR

e. Track Amplify Data = AMPTRKdd.PDR

f. CQARS Data = CQARSdd.PDR.

dd = day of the month

AUTOMATED TRAFFIC COUNT

The following message is recorded as performance data of traffic count information when any of three conditions occur: 1) Automatic acquisition of a track with departure status, 2) Automatic or manual termination of a track with arrival or overflight status, or 3) Reacquisition of an arrival after entering an autodrop area, if it again meets the autodrop qualification.

T=hh:mm:ss X=+/-xx.xxx Y=+/-yy.yyy BCN=aaaa BCNSTAT=bb ADESTAT=ccc SN=ss SP=pppp DB7&8=ddd ACID=abcdefgh AT=ttttt

where:

T	=	Time
X	=	Displayed Position X-coordinate
Y	=	Displayed Position Y-coordinate
BCN	=	Beacon Code
BCNSTAT	=	Beacon Code Status
ADESTAT	=	Arrival/Departure/En route Status
SN	=	Sensor Number
SP	=	Scratch Pad
DB7&8	=	Data Block
ACID	=	Aircraft ID
AT	=	Aircraft Type

CQARS DATA

See Section 6.4.5, CQARS Status Report.

PERFORMANCE MONITOR PRINTOUT

Performance Monitor printouts are recorded as performance data in the same format as the printer format. Refer to Figures 6-10 through 6-24 for the formats of each printout.

FACILITY SIGN-ON/SIGN-OFF LOG

Sign-on, sign-off keyboard entries permit controllers to record their time at a position. These keyboard entries are recorded as part of performance data recording processing. Time at a position differentiates between actual control time, training time (instructor), and trainee time. When the Sign-On keyboard or non-keyboard message has been entered, the following message output occurs:

(TIME) (STATUS) (ID) (Cl) (l-l) (CO) (EVENT TIME) (SK)

TIME = Hours, minutes and seconds.

STATUS:

SO = Sign On
SI = Instructor
SE = Evaluator
SC = Certifier
CO = Position Combined (closed).

ID	=	One or two alphanumerics identifying position.
Cl	=	Initials (2 alphas). Controller, Instructor, Evaluator, or Certifier as defined by STATUS.
TI	=	Optional field. TI = Developmentals initials (2 alphas), present only if STATUS is SI, SE, or SC.
co	=	Optional field. One or two alphanumerics identifying the position with which this position ID is combined. STATUS must be CO.
EVENT TIME	=	Hours and minutes. (System Time unless otherwise entered by controller.)
SK	=	Subset and keyboard identifier of entering position.

CDR DATA

Reference NAS-MD-642, Section 3.5.

TRACK AMPLIFY DATA

Reference NAS-MD-642, Section 3.16.

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Appendix N

LIST OF ACRONYMS AND ABBREVIATIONS

This is a master list of acronyms and abbreviations. This book may not contain all acronyms addressed herein.

AACU	Aural Alarm Control Unit
AADC	Aural Alarm Device Controller
AAS	Advanced Automation System
ABC	Assigned Beacon Code
AC	Alternating Current
ACC	Aircraft Condition Code
ACD	ARTS Color Display
ACE	Ada Command Environment
ACG	Analog Circle Generator
ACID	Aircraft Identification
ACO	Administrative Contracting Officer
ACP	Azimuth Change Pulse
ACSN	Advanced Change/Study Notice
ACWP	Actual Cost of Work Performed
A/D	Arrival/Departure
ADBA	Advanced Dialog-Based Applications
ADC	Azimuth Data Converter
ADF	Active Data File
ADP	Automatic Data Processing
ADPT	ADF Pointer Table
ADRP	Alphanumeric Display Refresh Processing
ADU	Azimuth Distribution Unit
AF	Automatic Function Data
AFR	Automatic Failure Recovery
AFRMT	Airway Facilities Requirements Management Team
AHI	Automatic Handoff Initiation
AHOP	Automatic Hand-off Processing
AI	Action Item
ALAN	Auxiliary LAN
ALT	Altitude
ALTRKR	Altitude Tracker
ALU	Arithmetic Logic Unit
AM	Amendment Message; Address Modifier
A/N	Alphanumeric
ANC	Analog Channel RADS CCA
ANCTK	Ancillary Task
ANSI	American National Standards Institute
APC	Acquisition Processing Cabinet

APES	ARTS Peripheral Emulation Subsystem
APG	Azimuth Pulse Generator
API	Application Programming Interface
APM	Approach Path Monitor; Approach Monitor
APS	Acquisition and Processing Subsystem
AQ	Already Qualified
AR	Acceptance Review
ARO	After Receipt of Order; Airport Reservations Office
ARP	Azimuth Reference Pulse
ARR	Arrival
ARSA	Airport Radar Service Area
ARSR	Air Route Surveillance Radar
ARTCC	Air Route Traffic Control Center
ARTCID	ARTCC Site ID
ARTG	Azimuth Range and Timing Group
ARTS	Automated Radar Terminal System
ARTS IIA	Automated Radar Terminal System IIA
ARTS IIE	Automated Radar Terminal System IIE
ASAP	As Soon As Possible
ASC	Acquisition Signal Conditioner
ASCII	American Standard Code for Information Interchange
ASIC	Application Specific Integrated Circuit
ASLD	Addressing Section Load Directive
ASM	Assembler
ASR	Airport Surveillance Radar
ASR-9	Airport Surveillance Radar, Type 9
ASV	Airspace Violator
AT	Air Traffic
ATC	Air Traffic Control
ATCBI	Air Traffic Control Beacon Interrogator
ATCRBS	Air Traffic Control Radar Beacon System
ATCSD	Air Traffic Control Systems Division
ATCT	Air Traffic Control Tower
ATE	Automatic Test Equipment
ATIS	Automated Terminal Information Service
ATM	Air Traffic Management
ATMIS	ARTS Traffic Management Interface Subsystem
ATR	Acceptance Test Review
AUI	Attachment Unit Interface
AUS	Automation Specialist; Automatic Unit Specialist
AUT	Automatic Offset
AVICS	Advanced VMEbus Interface Chip Set
BANS	BRITE Alphanumeric Subsystem
Baud	Bits per Second
BBSY	Bus Busy
BCD	Binary-Coded Decimal
BCIDT	Beacon Code Identification Table

BCW	Buffer Control Word
BCWP	Budgeted Cost of Work Performed
BCWS	Budgeted Cost of Work Scheduled
BDAS	Beacon Data Acquisition Subsystem
BDFM	Beam Data Formatter Module
BEX	Beacon Extractor
BFDAD	Basic Full Digital ARTS Display
BI	Board Isolation
BIOS	Basic Input/Output System
BIT	Built-In Test
BITE	Built-In Test Equipment
BL	Baseline
BMC	Beacon Micro-Controller
BNC	Bifurcated Nipple Connector
BOC	Baseline Offset Corrector; Beacon Offset Corrector
BOE	Basis of Estimate
BOP	Baseline Operation Program
BOT	Beginning of Tape; Beacon-Only Table
BPS	Bits Per Second
BR	Beacon Replies
BRATS	Beacon Reports And Tracking Summary
BR/BG	Bus Request/Bus Grant
BRG	Beacon Reply Group
BRITE	Bright Radar Indicator Tower Equipment
BROPM	Beacon/Radar On-line Performance Monitor
BSAS	Beacon Sequential Access Store
BT	Beacon Transponder
BTP	Beacon Target Processor
BUF1	Buffer Board
BUP	Builder Utility Program
BVC	Beacon Video Conditioner
BWM	Byte-Wide Memory
CA	Conflict Alert; Computer Automation
CACCB	Common ARTS Configuration Control Board
CACTS	Conflict Alert Central Track Store
CA/DOS	Computer Automation/Disk Operating System
CAGE	Commercial and Government Entity Code
CALERT	Conflict Alert
CALTQ	Conflict Alert Site Parameters
CAM	Cost Account Manager
CAPAR	Conflict Alert Parameters
CAR	Corrective Action Request
CARF	Central Altitude Reservation Facility
CART	Conflict Alert Table
CAS	Cost Accounting Standards; Corrective Action System; Commercially Available Software
CATRK	CA Ground Plane Tracking

CA-I-T	Conflict Alert Type Table
CATU	Conflict Alert Table Update
CBBS	Channel Back-to-Back Switch
CBD	Change Board Directive
CBIL	Common and Bulk Items List
CBUF	Continuous Data Recording Buffers
CCA	Circuit Card Assembly
CCB	Configuration Control Board; Console Control Board
CCCB	Configuration Change Control Board; Contract Change Control Board
CD	Collision Detection
CDAT	Conflict Alert Data
CDF	Component Development File; Component Development Folder
CDR	Continuous Data Recording; Critical Design Review; Critical Data Recording; Console Data Register
CD-ROM	Compact Disk-Read Only Memory
CDRED	Continuous Data Recording Editor
CDRES	Continuous Data Recording Editor Software
CDRL	Contract Data Requirements List
CDRS	Continuous Data Recording Subsystem
CDT	Console Data Terminal
CE	Cognizant Engineer
CENRAP	Center Radar ARTS Presentation
CEPS	Cost Estimating and Pricing System
CF	Case File
CFE	Customer-Furnished Equipment
CFI	Customer-Furnished Information
CFM	Cubic Feet per Minute
CFR	Code of Federal Regulations
CG	Character Generator
CHI	Computer Human Interface
CI	Configuration Item
CIB	Change implementation Board
CID	Controller Identification
CIDIN	Common ICAO Data Interchange Network
CIDR	Configuration Item Development Board
CIDS	Critical Item Development Specification
CII	Configuration Item Index
CIL	Computer Inventory List
CIM	Completion Indicator Mode
CISC	Complex Instruction Set Computer
CLD	Card-Level Diagnostic
CLIN	Contract Line Item Number
CM	Configuration Management; Corrective Maintenance
CMA	Central Memory Access
CMC	Communications Multiplexer Controller
CMOS	Complementary Metal Oxide Semiconductor
CMP	Configuration Management Plan
CNFGD	Configuration Data

CNTBL	Conflict Table
COMS	Common Subroutines
CONINT	CA Pairwise Inhibit Table
COR	Performance Monitor Correlated Report
CORRECTB	Track Smoothing and Correction Subroutine
CORVEL	Update Coordinates and Velocity
COSMOS	Cost/Schedule Management-Oriented System
COTS	Commercial Off -The-Shelf
CP	Common Processor
CPC	Common Processor Complex
CPFF	Cost Plus Fixed Fee
CPFS	Computer Program Functional Specification
CPPM	CP Performance Monitoring
cps	characters per second
CPS	CP Subsystem; Common Processing Software; Control Position Symbol
CPU	Central Processing Unit
CQARS	Common ARTS Quick Analysis of Radar Sites
CR	Card Reader; Carriage Return
CRA	Card Reader Adapter; Communications Receiver Adapter
CRC	Card Reader Controller; Cyclic Redundancy Code
CRDA	Converging Runway Display Aid
CRIT	Critical Data
CRITD	Critical Data Recording Tables
CRT	Cathode Ray Tube
c s	Coding Specification
CSA	Configuration Status Accounting
CSAR	Configuration Status Accounting Report
CSB	Code Select Box
c s c	Computer Software Component
CSCI	Computer Software Configuration Item
c/scsc	Cost/Schedule Control System Criteria
CSD	Computer Systems Division
CSDM	Computer System Diagnostic Manual
CSLOG	Configuration Status Log (Manufacturing)
CSMA	Carrier Sense Multiple Access
CSMA/CD	Carrier Sense Multiple Access with Collision Standard, Detection
CSOM	Computer System Operator's Manual
CSQPP	Computer Software Quality Program Plan
c s s	Central Software Support
C/SSR	Cost/Schedule Status Report
c s u	Computer Software Unit
CT	Console Typewriter; Central Track Store Data
CTA	Console Typewriter Adapter; Communications Transmitter Adapter
CTAS	Center TRACON Automation System
CTC	Certification of Test Completion; Connecticut Technology Corporation
CTG	CENRAP Trigger Generator
CTIP	Console Typewriter Input Processing
CTP	Console Typewriter Processing

CTS	Central Track Store; CENRAP Trigger Simulator
CUDI	Control Unit Disk Interface
CUT	Code and Unit Test
CWBS	Contract Work Breakdown Structure
c x	Cancellation Message
DA	Data Accepted; DNIP Adapter
DAC	Days After Contract award; Data Base Control
DADCP	Data Acquisition Device Controller Processor
DADCPS	Data Acquisition Device Controller Processor Software
DARPA	Defense Advanced Research Program Agency
DAS	Data Acquisition Subsystem
DASI	Digital Altimeter Setting Indicator
DAT	Data Base
DBANS	Digital Bright Alphanumeric Subsystem
DBAT	Discrete Beacon Association Table
DBATCOM	Test TI/Beacon Code/ABC Request
DBATHASH	Calculate DBAT Hashed Index Location
DBATM	DBAT Maintenance
DBATSTKD	Push DBAT Deleted Entry onto the DBAT Processing Stack
DBATSTKI	Push DBAT Insert Entry onto the DBAT Processing Stack
DBC	Discrete Beacon Code
DBLD	Data Base Load Directive
DBM	Data Base Manager; Display Buffer Memory
DBRITE	Digital Bright Radar indicator Tower Equipment
DBU	Data Backup Unit
DC	Direct Current
DCC	Design Change Coordination
DCG	Digital Circle Generator
DCI	Device Controller Interface
DCL	Document Control Library
DCN	Design Change Notice
DCP	Display Control Processor; Display Control Panel
DCU	Disk Control Unit
DDAS	Decoding Data Acquisition System
DDCP	Display Device Controller Processor
DDCPS	Display Device Controller Processor Software
DDE	Dynamic Data Exchange
DDO	Detailed Design Overview, Document Design Overview
DDTSUB	Sensor Mode of Operation Subroutine
DDU	Disk Drive Unit
DE	Data Extraction
DED	Data Entry Device
DEDS	Data Entry and Display Subsystem
DEDU	Drive Exerciser Diagnostics Unit
Demo	Demonstration
DES	Data Entry Subsystem
DFTF	Display Find Targets and Format

DFW	Dallas/Ft. Worth
DIA	Denver International Airport
DID	Data Item Description
DiskAccess	Allows Operator to Access Hard Drive and Flash Disk
DM	Data Management; Departure Message
DMA	Direct Memory Access
DMAC	Direct Memory Access Controller
DMP	Data Management Plan
DNIP	Display and Network Interface Processor
DOD	Department Of Defense
DOM	Display Output Message
DOP	Display Output Processing
DOS	Disk Operating System
DOT	Department Of Transportation
DP	Display Processor; Dual Processor
DP/DS	Dual Processor/Dual Sensor
DPS	Display Processing Software; Display Processing Subsystem; Data Processing Subsystem
DP/SS	Dual Processor/Single Sensor
DPT	Days Prior To; Deployment Phase Testing
DPU	Disk Power Unit
DQT	Design Qualification Test
DR	Discrepancy Report; Data Recovery
DRAA	Data Reduction and Analysis
DR&A	Data Reduction and Analysis
DRAM	Dynamic Random Access Memory
DRL	Document Review Log
DRT	Diagnostic Results Table
DS	Deflection Summer; Dual Sensor
DSRP	Dual-Sensor Redundant Processor
DSG	Digital Sweep Generator
DSS	Data System Specialist; Data Storage Subsystem
DT	Disk to Disk Transfer
DT&E	Development Test and Evaluation
DTB	Data Transfer Bus
DTE	Data Terminal Equipment
DTM	Digital Terrain Map
DTOD	Disk to Disk Transfer
DTU	Data Transfer Unit
DUKI	Dual Keyboard Interface
DVG	Display Video Generator
D/W	Deviation/Waiver
EAC	Estimate at Completion
EAEC	Eagan Engineering Center
EARTS	En route Automated Radar Tracking System
ECC	Error Checking and Correction
ECEC	Environmental Compatibility Engineering Center

ECID	En route Computer Identification
ECIDT	En route Computer Identification Table
ECM	Electronic Counter Measure
ECN	Engineering Change Notice
ECO	Engineering Change Order
ECP	Engineering Change Proposal
ECR	Engineering Change Request
EDC	Early Discrete Correlation
EEM	Electronic Equipment Modification
EEPROM	Electrically Erasable Programmable Read-Only Memory
EES	Engineering Environment Software
EF	External Function
EFA	External Function Acknowledge
EFD	External Function Decode
EFR	External Function Request
EGA	Enhanced Graphics Adapter
EIA	Electronics Industry Association
EIE	External Interrupt Enable
EIR	Engineering Information Release; External Interrupt Request
EMI	Electra-Magnetic Interference
EMR	Equipment Malfunction Report
EN	Engineering Notice
ENB	Enable
E-NET	Ethernet
ENR	En route
EOM	End of Message
EOT	End of Tape
EP	Expansion Processor
EPM	Enhanced Performance Monitoring
EPROM	Erasable Programmable Read-Only Memory; Electronically Programmable Read-Only Memory
E&R	Exchange and Repair
ERB	Engineering Review Board
ESD	Electrostatic Discharge
ESG	Enhanced Scenario Generator
ESI	Externally Specified Index
ESR	Executive Service Request
ETA	Estimated Time of Arrival
ETA/ETD	Estimated Time of Arrival/Estimated Time of Departure
ETG	Enhanced Target Generator
EVED	Event Editor
EX	Executive
FAA	Federal Aviation Administration
FAAAC	FAA Academy
FAALC	Federal Aviation Administration Logistic Center
FACT	Factory Acceptance Test
FAR	Federal Acquisition Regulation

FAS	Factory Assembly Shop
FAST	Final Approach Spacing Tool
FAT	Factory Acceptance Test
FCA	Functional Configuration Audit
FCO	Field Change Order
FCS	Frame Check Sequence
FD	Floppy Drive
FDAD	Full Digital ARTS Display
FDB	Full Data Block
FDF	Flight Data File
FDIO	Flight Data Input Output
FDP	FDAD Display Processor; Flight Data Processing
FDPT	FDF Pointer Table
FDR	Formal Design Review; Functional Design Review
FDS	FMA Display Software
FE	Field Engineer
FFP	Firm-Fixed Price
FIFO	First-In/First-Out
FMA	Final Monitor Aid
FMAD	FMA Display
FN	Factory Notice
F.O.	Fiber Optic
FOM	Format Board RADS CCA
FP	Flight Plan
FPDU	Flight Plan Disk Update
FPE	Flight Plan Editor
FPMH	Failures Per Million Hours
FPU	Floating Point Unit
FRACAS	Failure Reporting Analysis and Corrective Action System
FRDP	Formal Review Data Package
FSS	Flight Service Station
FST	Factory System Test
FSTP	Factory System Test Plan
FSTR	Factory System Test Report
GCTS	Ghost Central Track Store
GDB	Ghost Data Block
GDF	Ghost Data File
GETALINK	Get a Linked Track
GETCTSD	Get CTS Address for Deviation Track
GETCTSG	Get CTS Address for Ghost Track
GETCTSP	Get CTS Address for Parent Track
GF	Government-Furnished
GFE	Government-Furnished Equipment
GFI	Government-Furnished Item/Information
GFP	Government-Furnished Property
GFS	Government-Furnished Software
G/G	Ground-to-Ground

GIDEP	Government Industry Data Exchange Program
GKS	Graphic Kernel System
GMP	Graphics/Monitor Processor
GP	Graphics Processor
GPS	Global Positioning System
GSA	General Services Administration
GTM	General Terrain Map; General Terrain Monitor
GTRT	Ghost Track Record Table
GUI	Graphical User Interface
HD	Hard Drive
HDD	Hardware Design Documentation
HDDD	Hardware Detailed Design Document
HDR	Hardware Discrepancy Report
HOL	High Order Language
HRS	Hardware Requirements Specification
HSK	Heat Sink RADS CCA
HSP	High-Speed Printer
HSR	Hardware Specification Review
HSTB	Hot System Test Bed
HSTX	Hughes STX Corporation
HTLDD	Hardware Top-Level Design Document
H/W	Hardware
HWCI	Hardware Configuration Item
Hz	Hertz
I&A	Initiation and Authorization
IACK	Interrupt Acknowledge
IAW	In Accordance With
IBAG	Interface Buffer Adapter and Generator
IC	Integrated Circuit
ICA	Interfacility Communications Adapter
ICD	Interface Control Document
ICDLS	Interim Contractor Depot Level Support
ICRA	Interfacility Communications Receiver Adapter
ICRS	Interim Contractor Repair Services
ICS	Interim Contractor Support; Integration Control System
ICTA	Inter-facility Communications Transmitter Adapter
ICWG	Interface Control Working Group
ID	Identification
IDD	Interface Design Document; Interface Description Document
IDISP	Initiate Display Buffer Memory
IDR	Input Data Request
IDS	Information Display System
IEE	Integrated Engineering Environment
IEEE	Institute of Electrical and Electronics Engineers, Inc.
I/F	Interface
IF	Inter-facility; Instrument Flight

IFDC	Inter-facility Device Controller
IFDS	Interfacility Data Set
IFI	Inter-facility Input
IFO	Inter-facility Output
IFP	Initiate Flight Plan
IFR	Instrument Flight Rules
IFS	IOP FMA Software
I FTEST	Inter-facility Communications Test Subprogram
ILS	Integrated Logistics Support; Instrument Landing System
IMP	Integrated Multiprotocol Processor
IMT	Integral Magnetic Tape
INCO	Installation and Check Out; Installation and Cutover
INH	Inhibit
INIA	IOPB/Network Interface Adapter
INTI	Interfacility Input Adapter
INTO	Inter-facility Output Adapter
I/O	Input/Output
IOA	Input/Output Adapter; I/O Adapter
IOC	Initial Operability Capability
IOP	Input/Output Processor
IOPB	Input/Output Processor Modification B
IP	Interface Processing (IP) subsystem; Interface Processor; Internet Protocol
IPDS	Integrated Product Definition System
IPI	Interprocessor Interrupt
IPR	Internal Problem Report; Interim Performance Review
IRAM	Instruction Random Access Memory
IRIG	Inter-Range Instrumentation Group
IRS	Interface Requirements Specification
ISC	Intelligent Serial Controller
ISI	Integrated System Incorporated
ISIL	Interim Support Items List
ISL	Intersensor Linking
ISM	Instructor and Student Materials; Interface Switch Module
ISO	International Standards Organization
ISP	Interim Support Plan; Interrupt Service Procedures; Interim Support Program
ITDL	Initial Terminal Data Link
IV&V	independent Validation and Verification
JTA	Job Task Analysis
KB	Keyboard; Kilobyte
KDC	Keyboard Device Controller
KF	Keyboard Function Data
KIP	Keyboard Input Processor/Processing
KOF	Keyboard Operational Function
KVA	KiloVolt Amperes
Kw	Kilowatt

LA	Low Altitude
LAA	Link Adapter Assembly
LA/CA	Low Altitude/Conflict Alert
LAN	Local Area Network
LANC	Local Area Network Controller
LANCE	Local Area Network Controller for Ethernet
LAND	Local Area Network Test
LAT	Lattice
LBm	Lambert meters
LBP	Local (Bright A/N (BANS) Processor
LCA	Line Compensation Amplifier
LCN	Logistics Control Number
LDB	Limited Data Block
LDD	Load
LDDT	Limited Display Diagnostic Test
LDF	Leader Direction Field
LDR	Leader
LED	Light Emitting Diode
LIFO	Last-In/First-Out
LINCON	Linear Conflict Detection
LLC	Logical Link Control
LLCSC	Low-Level Computer Software Component
LLTIL	Long Lead Time Items List
LMC	Load-and-enable Monitor Clock (instruction)
LMD	Lateral Miss Distance
LOB	Line of Business
LOL	Limit of Liability
LPI	Language Processors, Inc.
LRC	Longitudinal Redundancy Check
LRI	Line Replaceable Item; Lowest Replaceable Item
LRR	Long Range Radar
LRSC	Lowest Replaceable Software Component
LRU	Level of Repair Unit: Line Replaceable Unit; Lowest Replaceable Unit
LSA	Logistics Support Analysis
LSAP	Logistics Support Analysis Plan
LSAR	Logistics Support Analysis Record; Logistics Support Analysis Requirements
LSB	Least Significant Bit
LSI 2/40	Computer Automation CPU in ARTS II
MAC	Months After Contract; Media Access Control
MACA	Months After Contract Award
MAINT	Maintenance; Maintenance Software
MALA	Mode S/ASR-9 Line Adapter
MAPPER	Maintaining, Preparing, Producing, Executive Reports (System Software for 1100)
MARS	Magnavox Manufacturing Automated Reject System
MAT	Monitor Associated Tracks
MAU	Medium Attachment Unit
MB	MegaByte

MCAP	Magnavox Computer Aided Processes
MCC	Maintenance Control Center
MCI	Mode C Intruder
MCP	Micro Common Processor
MCPS	Micro Common Processor Subsystem
MDB	Master Data Base
MDBM	Multiplexed Display Buffer Memory
MDPS	Multiprocessor Data Processing Subsystem; Micro Display Processor Subsystem
MDT	Mean Down Time
MECA	Unisys Program Management Tool
MEL	Machine Equipment List
MFMAMS	Maneuvering Conflict Detection
MHz	Megahertz
MI	Manufacturing Information
MIL-STD	Military Standard
MIPS	Millions of Instructions Per Second
MIT	Massachusetts Institute of Technology
MLO	Memory Lockout
MM	Memory Module
MMP	Manufacturing Management Plan
MMU	Memory Management Unit
MOD	Modem
MODEM	Modulator/Demodulator
MOP	Digital Map Output Processing; Manufacturing Operating Procedure
MPE	Multiprocessor Executive
MRB	Material Review Board
MRNOTE	Memory Readout & Suicide Note Entries
MRSA	Material Readiness Support Activity
MS	Millisecond
MSAW	Minimum Safe Altitude Warning
MSAWD	MSAW Data
MSB	Most Significant Bit
MSDOS	Microsoft Disk Operating System
msec	millisecond
MSP	Micro System Processor; Minneapolis/St. Paul
MSPC	Medium-Speed Printer Console
MSPPRT	Medium-Speed Printer Memory Print Program
MSPS	Micro System Processor Subsystem
MSS	Micro Support Software
MSU	Mass Storage Unit
MT	Magnetic Tape
MTA	Magnetic Tape Adapter
MTBF	Mean Time Between Failures
MTBI	Mean Time Between Integration
MTD	Moving Target Detection
MTI	Moving Target Indicator
MTLS	Materials
MTP	Master Test Plan

MTRS	Mean Time To Restore System
MTS	Magnetic Tape Subsystem
MTT	Magnetic Tape Transport
MTTR	Mean Time To Repair
MTU	Magnetic Tape Unit
MTUC	Magnetic Tape Unit Controller
MUT	Mean Up Time
MUTEX	Mutual Exclusion Synchronization Variable
MUX	Multiplexer
N/A	Nonapplicable
NAILS	National Airspace Integrated Logistics Support
NAS	National Airspace System
NAT	Not ARTS Tracked
NAVAID	Navigational Aid
NC	Non-Conflict
NCP	NAS Change Proposal
NDI	Non-Development Item
NDR	New Document Requirement
NDRO	Nondestructive Readout; Nondestructive Read-Only
NETO	Network Output Control
NEZ	Navigation Error Zone
NFDC	National Flight Data Center
NFS	Network File System
NIA	Network Interface Adapter
NID	Network Identification
NIST	National Institute of Standards and Technology
NM	nautical mile
NMCC	National Maintenance Control Center
nmi	nautical mile
NOAA	National Oceanic and Atmospheric Administration
NOR	Notices of Revision
NOZ	Normal Operating Zone
NRE	Non-Recurring Engineering
NRZI	Non-Return Zero Inverted
ns	nanosecond
NSA	National Security Agency
NSPAR	Nonstandard Part Approval Request
NTDS	Naval Tactical Data System
NTZ	No Transgression Zone
NUMKQ	Number of Keyboards
NVRAM	Nonvolatile Read and Write Memory
NWIS	North West Instrument Systems
NYT	New York TRACON
OA	Output Acknowledge
OCPD	Overall Computer Program Description
ODC	Other Direct Charge

ODR	Output Data Request; Original Document Requirement
ODT	Open Desk Top
OEM	Original Equipment Manufacturer
OJT	On-the-Job Training
OM	Operator's Manual
ONC	On-Call
OP	Operational
OP BL	Operational Baseline
OPS	Operational Software
ORAM	Operational RAM CCA
ORD	Operational Readiness Deployment
OS	Operating System
osc	On-line System Changer
OSD	Operational System Deployment
OSI	Open Systems Interconnect
OTC	On-line Teletype Changer
OT&E	Operational Test and Evaluation
OTS	Off -The-Shelf
PACKLINK	Set Requests for Linked Tracks
PAL	Programmed Array Logic
PAM	Peripheral Adapter Module; Program Authorization Memorandum
PARAM	Parameters
PAT&E	Production Acceptance Test and Evaluation
PAUS	Process Associated and Unassociated Tracks
PC	Personal Computer; Printed Circuit
PCA	Physical Configuration Audit
PCAB	Processor Cabinet
PCB	Printed Circuit Board
PCCB	Program Configuration Control Board
PCD	PC Display; Production Common Digitizer
PCI	Product/Physical Configuration Identification
PCL	Post-Conference List
PCM	Program Control Memory
PC0	Procurement Contracting Officer
PDB	Partial Data Block
PDD	Preliminary Design Documentation
PDL	Program Design Language
PDOP	Periodic Display Output Processing
PD-PC	Performance Data PC
PDQ	Product Delivery Quality
PDR	Preliminary Design Review
PE	Project Engineer
PEC	Peripheral Equipment Cabinet; Processing Electronics Chassis
PEM	Positional Entry Module
PEP	Proposal Evaluation Plan
PET	Proposal Evaluation Team
PFC	Power Factor Corrector

PFM	Prefault Module
PFPD	Pack Flight Plan Data
PG	Processor Group; Position Generator
PI	Program Improvement
PIDS	Prime Item Development Specification
PIM	Parallel Interface Module
PIO	Parallel Input/Output
PIREP	Pilot Report
PIT	Programmable Interval Timer
PIWG	Performance Issues Working Group
PLD	Program Load Disk; Program Load Device
PLDC	Program Load Disk Complex
PLDS	Program Load Disk Software; Program Load Device Software
PM	Preventive Maintenance; Program Manager; Performance Monitor; Periodic Maintenance
PML	Program Maintenance Log
PMO	Program Management Office
PMP	Project Management Plan; Program Management Plan
PMR	Program Management Review
PMTC	Pacific Missile Test Center
P/N	Part Number
POCM	Program Control CCA
POFA	Programmed Operational Functional Appraisal
POLYSWITCH	Fuse
POPL	Proximity Ordinary Predictor
POS	Position
POSIX	Portable Operating System Interface for Computer Environment
PP	Peripheral Processor
PPC	Power PC
PPCBUG	Routine to Enter Power Save Module
PPI	Plan Position Indicator
PPL	Provisioning Parts List
PPLI	Provisioning Parts List Index
PPQ	Product Production Quality
pps	pulses per second
PPSL	Program Parts Selection List
PQM	Program Quality Manager
PR	Performance Requirement; Purchase Requisition
PRA	Pilot Reported Altitude
PRC	Peer Review Coordination
PRE	Preview Area
PRF	Pulse Repetition Frequency
PROCON	Proximity Conflict Detector; Proximity Conflict Alert
PROM	Programmable Read Only Memory
PSD/E	Program Software Development/Enhancement (TSD Program task)
PSE	Project Support Environment
PSL	Program Support Library
PSL/PSA	Problem Statement Language/Problem Statement Analyzer

PSM	Peripheral Switch Module; Power Supply Module
PSR	Pre-Shipment Review
PSRAP	Parallel SRAP
PSS	Primary Sensor System
PTD	Proposed Time of Departure; Provisioning Technical Data/Documentation
PTM	Post-Test Meetings
PTR	Program Technical Report; Program Trouble Report; Problem/Trouble Report
PVD	Plan View Display
PVM	Proposal Volume Manager
PWA	Printed Wiring Assembly
PWB	Printed Wiring Board
QA	Quality Assurance
QAP	Quality Assurance Procedure
QC	Quality Control
QCD	Quality Control Diagnostics
QCSP	Quality Control System Plan
QKLOOK	Quick Look Table
QLOOK	Quick Look
QLSEL	Quicklook Selection
QRO	Quality and Reliability Officer; Quality Review Officer
QUICC	Quad Integrated Communications Controller
Q&W	Quality and Workmanship
R-ACD	Remote-ARTS Color Display
RA	Read Always
RAD	Radar Alphanumeric Display
RADS	Radar Alphanumeric Display Subsystem
RAG	Range Azimuth Gate
RALM	Recovery Alarm; Remote Alarm
RAM	Random Access Memory
RAT	Report Address Table
RBC	Reported Beacon Code
RBP	Remote (Bright A/N BANS) Processor
RBTL	Radar Beacon Tracking Level (system)
RCB	Remote Control Box
RCOMR	RDBM Common Routines
RCS	Revision Control System
RDAS	Radar Data Acquisition Subsystem
RDBM	Remote Display Buffer Memory
RDC	Refresh Data Controller
RDM	Remote Display Multiplexer
RDOP	Remote Display Output Processing
RDP	Radar Data Processing; RFDD Display Processor
RE	Read Executive
READS	Requirements Entry, Allocation, and Decomposition System
REJ	Reject
RERB	Requirements Engineering Review Board

RETRACK	Retrack Processing
REX	Radar Extractor
RF	Request Flight Plan
RFA	Request For Action
RFC	Request For Change
RFDD	Remote Full Digital Display
RFDU	Reconfiguration Fault Detection Unit
RFD/W	Request For Deviation/Waiver
RFP	Request For Proposal
RFTP	Request For Technical Proposal
RGW	ARTS Radar Gateway
RID	Review Item Discrepancy
RIL	Repairable Items List
RIP	Radar Input Processing
RIRF	Risk Issue Response Form
RISC	Reduced Instruction Set Computer
RISF	Risk Issue Submittal Form
RKIP	Remote Keyboard Input Processing
RLF	Reusability Library Framework
RM	Recovery Module
R&M	Reliability and Maintainability
R/M	Reliability/Maintainability
RMA	Reliability, Maintainability, Availability
RMC	Radar Micro-Controller
RML	Radar Microwave Link
RMMS	Remote Maintenance Monitoring System
RMP	Risk Management Panel
RNR	Receive Not Ready
ROCSTK	Range Off-Center Stack Update Table
ROCUP	Range Off -Center Update
ROCUPF	Range Off-Center Update Display Indication
ROM	Read Only Memory
ROR	Release On Request
ROT	Radar Only Table
RP	Radar Processor
RPT	Radar Pretrigger
RQDAT	RTQC Data
RR	Receive Ready
RRB	Risk Review Board
RSB	Radar Sort Box
RSG	Radar Sweep Generator
RSL	Recovery System Library
RSM	Remote System Monitor
RSP	Right Square Parallelepiped
RSS	Relative Sensor System
RSSS	Radar System Selector Switch
RT	Read Task
RTAT	Repair Turnaround Time

RTBADC	Retrieve Binary Fix Value
RTBINC	Retrieve Binary Fix Value
RTC	Real-Time Clock
RTCCS	Remote Tower Cab Control System
RTDOP	Remote Tabular Display Output
RTDS	Remote Tower Display Subsystem
RTEID	Realtime Executive Interface Definition
RTOS	Realtime Operating System
RTQC	Real-Time Quality Control
RTQCPCLR	Clear Paired Primary Sensor
RTQCSCLR	Clear RTQC Sensor Data
RTR	Radar/Beacon Target Report
RU	Range Unit
RVM	Radar Video Mixer
RWA	Read Write Always
RWD	Release When Done
RWE	Read Write Executive
RxC	Receive Synchronous Clock Signal
RxD	Receive Data Signal
SA	Site Adaptation
SAAS	Stand-Alone Assembly System
SAD	Stand-Alone Document
SADS	Site Adaptation Software
SAM	Satellite Airport Monitor
SASS	Stand-Alone Support System
SAT	Site Acceptance Testing
SBC	Single Board Computer
SCAP	Sensor Coverage Analysis Program
SCC	Serial Communications Control
SCCB	Software Configuration Control Board
SCDU	Scenario Disk Update
SCIP	Surveillance and Communications Inter-face Processor
SCM	Software Configuration Management
SCN	Specification Change Notice
SCO	Santa Cruz Operations
S/CS	Subcontracts
scs	System Console Software
SCSI	Small Computer System Interface; Standard Computer System Interface
SCT	Southern California TRACON; System Configuration Table
SCTME	Scratch Pad Timing
SDA	System Data Area
SDB	Small Disadvantaged Business
SDBA	Single Dialog-Based Applications
SDB1	Software Data Base 1
SDB2	Software Data Base 2
SDB3	Software Data Base 3
SDB4	Software Data Base 4

SDC	Stroke Display Controller
SDCS	Stroke Display Controller Software
SDD	Software Design Document
SDDD	Software Detailed Design Document
SDF	Software Development File
SDL	Software Development Library
SDP	Software Development Plan; System Diagnostic Program
SDR	System Design Review
SDRL	Subcontractor's Data Requirements List
SDS	Software Development System; Software Development Station
SDU	Stroke Display Unit
SDWS	Software Development Work Station
SE	Support Equipment
SED	Slew Entry Device
SEE	Software Engineering Environment
SEI	Software Engineering Institute
SEIC	System Engineering and Integration Center
SEMP	System Engineering Management Plan
SERVC	Service Program
SFT	Subsystem Functional Test
SFTP	Subsystem Functional Test Procedure
SFTR	Subsystem Functional Test Report
SG	Sensor Gateway
SIA	Serial Interface Adapter
SIC	Serial Interface Controller
SIF	Secondary Identification Feature
SIFACS	SRAP, Inter-facility and CENRAP Simulator
SIFS	Sensor Interface Software
SIM	Serial Interface Module
SIO	Serial Input/Output
SIP	Site Installation Plan
SIR-CINOS	System Interface Routine-Centralized Input/Output System
SIT	Ship and Install
SI&TP	System Integration and Test Plan
SLD	System-Level Diagnostic
SLEWPOS	Slew Position
SLINK	Intersensor Linking
SLIP	Serial Line Internet Protocol
SLOC	Source Lines of Code
SLOTS	Select Level of Training Set
SM	Subcontract Manager
SMC	System Monitor Console
SMCC	System Monitor Console Complex
SMC-PC	SMC Personal Computer
SMCPCC	System Monitor Console Personal Computer Complex
SMCS	System Monitor Console Software
SMH	System Message Handler
SMON	System Monitoring Software

SMOTH	Track Smoothing
SMS	System Monitor Station
SMT	Subcontract Management Team
S/N	Serial Number
SNOTE	Displays Suicide Notes for the RGW
SOATP	System Onsite Acceptance Test Procedure
SOATR	System Onsite Acceptance Test Report
SOM	System Operator's Manual; Start of Message
SOST	System On-Site Test; Site Operational System Test
sow	Statement Of Work
SP	Standard Practice; System Parameter; System Processor
SPARC	Scalable Process Array RISC Computer
SPEC	St. Paul Engineering Center
SPI	Special Position Indicator
SPM	Software Programmer's Manual
SPS	SP Subsystem; Software Product Specification; System Performance Specialist
SPSS	Single Processor/Single Sensor
SPTD	Supplementary Provisioning Technical Data/Documentation
SQA	Software Quality Assurance
SQOP	Software Quality Operating Procedure
SRAM	Static Random-Access Memory
SRAP	Sensor Receiver and Processor
SRR	System Requirements Review
SRS	Software Requirements Specification; System Requirements Specification
SRTM	System Results Table Map
ss	Single Symbol; Single Symbol Data Block
ssc	System Support Computer
SSDD	System Software Design Document
SSRP	Single-Sensor Redundant Processor
SSF	System Support Facility
SSI	Subsystem Interface; Subsystem Interface Subsystem
SSIC	Subsystem Interface Complex
SSIS	Subsystem Interface Software
SSM	Solid State Memory
SSR	Software Specification Review
sss	System Segment Specification; Subsystem Software
STD	Software Test Description; Standard
STN	Sensor Track Number
StP	Software through Pictures
STP	System Test Procedure; System Test Plan
STR	Software Trouble Report; System Test Report
ST&TE	Special Tools and Test Equipment
SUBS	Sensor Subsystem Tables
SUM	Performance Monitor Summary Report; Software User's Manual
SUP	Supervisor
SUPS	Support Software
SV	Site Variable
SVID	System V Interface Definition

S/W	Software
SWABS	Software Adaptation to Beacon Subsystem
SYS	System Area
TA	Transmission Accepted
TATCA	Terminal Air Traffic Control Automation
TB	Terminate Beacon
TBD	To Be Determined
TCA	Terminal Control Area
TCAS	Terminal Conflict Avoidance System
TCDD	Tower Cab Digital Display
TCE	Terminal Communications Equipment
TCG	Time Code Generator
TCID	Terminal Computer Identification
TCIDT	Terminal Computer Identification Table
TCRSS	Track Cross-Referencing
TCTS	Trial Track Central Track Store
TDA	Task Data Area
TDOP	Tabular Display Output Processing
T&E	Test and Evaluation
TEDC	Track Early Discrete Correlation
TEDCRS	Track Early Discrete Correlation and Cross-Referencing
TEXEC	Tracking Executive
TF	Test Fail
THD	Total Harmonic Distortion
TI	Texas Instruments; Tracking Initial Message
TIDL	Search for CTS File
TIM	Technical Interchange Meeting
TINIT	Track Initial Correlation
TK	Task
TKRCXT	Track Display Cross-Reference Table
TL	Recall Transfer (ARSA) Inter-facility Message; Team Leader
TLCSC	Top-Level Computer Software Component
TLDO	Top-Level Design Overview
TM	Initiate Transfer (ARSA) Inter-facility Message
TMAPi	Terrain Map (for sensor i)
TMP	Temporary Storage
TMS	Traffic Management System
TMU	Traffic Management Unit
TN	Accept Transfer (ARSA) Inter-facility Message
TO	Technical Officer
TOR	Technical On-Site Representative
TP	Track Processing; Track Processor; Transfer Primary Radar Targets; Transmit Primary
TPC	Track Processing Complex
TPM	Technical Performance Measurement
TPR	Test Procedure
TPRED	Track Prediction

TPS	Test Program Sets; Track Processing Software; TP Subsystem
TPSEC	Primary/Secondary Correlation
TPUR	Process Unused Reports
TPX-42	Secondary Radar System Designator
TQM	Total Quality Management
TR	Test Message
TRACAB	Equipment used to provide terminal service from a tower cab
TRACON	Terminal Radar Approach Control; Equipment used to provide terminal service from an IFR room
TRACS	Transportable Radar Analysis Computer System
TRAD	DBM Output and Sublist Maintenance Subroutine for Non-Tabular Track Display
TRCBUG	Trace Debugger
TRDP	Terminal Radar Display Processing
TRKXT	Track Address Table
TROUT	Tracking Output
TRP	Test Report
TRR	Test Readiness Review
TRS	Target Report Store
TRSA	Terminal Radar Service Area
TRST	Target Report Store
TRT	Track Record Table
TS	Transfer Secondary Radar Targets; Transmit Secondary
TSC	Time Share Controller
TSD	Terminal System Development
TSG	Training Scenario Generator
TSUB	Tracking Subroutines
Ts&Cs	Terms and Conditions
T&TE	Tools and Test Equipment
TTEL	Tools and Test Equipment List
TTG	Training Target Generator
TTY	Teletypewriter; Teletype
TU	Track Update
TUD	Thread Update
TUDCA	Thread Update for Conflict Alert
TUDSENSTK	Thread Update Sensor Stack
TxC	Transmit Synchronous Clock Signal
TxD	Transmit Data Signal
TZ	Flow Control Track/Full Data Block Information Message
UCSR	Universal Control and Status Register
UDF	Unit Development File; Unit Development Folder
UDP	User Datagram Protocol
UDS	Universal Data Set
UPS	Uninterruptible Power System
USAF	United States Air Force
USART	Universal Synchronous/Asynchronous Receiver/Transmitter
usec	microsecond

USST	Unit Subsystem Test
UTIL	Utilities
UUT	Unit Under Test
VADS	Verdix Ada Development Group
VAR	Variance Analysis Report; Video Amplifier - RADS; Video Mixer/Amplifier RADS CCA
VC	Video Compression
VDC	Volts DC
VDD	Version Description Document
VECP	Value Engineering Change Proposal
VFEC	Valley Forge Engineering Center
VFR	Visual Flight Rules
VG	Vector Generator
VLSI	Very Large-Scale Integration
VME	Versa Module Eurocard
VRTM	Verification of Requirements Traceability Matrix
VTC	Video Time Compression
VTS	Video Trigger Simulator
VUM	Video Unblock Mixer
WA	Work Authorization
WAN	Wide Area Network
WBS	Work Breakdown Structure
WDPT	Working Days Prior To
WEA	Weather
WJHTC	William J. Hughes Technical Center
WWVB	Radio time reference (call sign)
Xon/Xoff	Flow Control Protocol
XOR	Exclusive OR