

ENVISAT

PAYLOAD DATA SEGMENT

THALES

INFORMATION SYSTEMS

Archive & Retrieval Facility Reference Manual



THALES
INFORMATION SYSTEMS

ENVISAT PAYLOAD DATA SEGMENT

Ref. : PO-MA-NRS-GS-0003/4

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INSIDE FRONT PAGE



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VOLUME 4 - REFERENCE MANUAL**

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INTRODUCTION

1

Intended Readership

This User Manual has been written for the use of operators of the Envisat Archive & Retrieval Facility software. Envisat ARF operators are hereafter referred to as the 'Operator'.

Applicability

This User Manual is for the use of the Operator. The primary end users of the Envisat ARF are not however the Operators, but the other Envisat facilities, namely:

- ◆ Acquisition Facilities
- ◆ Centre Monitoring and Control
- ◆ Dissemination Facilities
- ◆ Engineering Support Facility
- ◆ Processing Facilities
- ◆ Product Quality Facility
- ◆ User Services Facilities

The use of ARF products at these facilities are outside the scope of this User Manual.

Purpose

The purpose of Volume 4 of this User Guide is to provide a reference manual for the Human Machine Interface and all other aspects of the ARF software which may at some time require Operator intervention.

How To Use This Document

This document provides a reference for the Human Machine Interface, ARF Operations and a complete list of ARF error messages and their associated actions.

In the chapter about the Human Machine Interface all the windows, menus and panes which form the HMI are described in detail, but for details on how to perform ARF Operator tasks the Operator should first consult the User Manual Volume 3 - User Guide.

The chapter about ARF Operations contains descriptions of:

- ◆ Procedures
 - ◆ normal start-up & shut-down
 - ◆ manual shutdown
- ◆ Reading CSF Log Files
- ◆ System Data Tables
 - ◆ system configuration
 - ◆ application reference
 - ◆ operational reference
- ◆ Database Restoration
 - ◆ from backup
 - ◆ from media

Related Documents

The following documents form the full set of User Manuals:

Table 1A

ENVISAT ARF USER MANUAL

Document	Identifier
Envisat ARF User Manual, Volume 1 - Overview	PO-MA-NRS-GS-0003/1
Envisat ARF User Manual, Volume 2 - Installation Guide	PO-MA-NRS-GS-0003/2
Envisat ARF User Manual, Volume 3 - User Guide	PO-MA-NRS-GS-0003/3
Envisat ARF User Manual, Volume 4 - Reference Manual	PO-MA-NRS-GS-0003/4

Other related documents are:

Table 1B

RELATED DOCUMENTS

Document	Identifier
ARF Facility Functional Requirements Specification	PO-RS-CSF-GS-0154
ARF Architectural Design Document	PO-DD-NRS-GS-0001
ARF Detailed Design Document	PO-DD-NRS-GS-0002/1-8
ARF Project History Document	PO-PH-NRS-GS-0001
CSF Software User Manual	PO-MA-SSL-GS-0001

Conventions

The only notations which have been utilised within the set of User Guides are:

- ◆ DIADEM Strategy Diagrams representing the windows based dialogues
- ◆ Yourdon Context Diagram to show the context of the ARF software
- ◆ Yourdon Data Flow Diagrams showing the top-level structure of the ARF software

Problem Reporting

All problems encountered whilst using the Envisat Archive & Retrieval Facility should be reported using the standard reporting procedures e.g SPRs.



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HUMAN MACHINE INTERFACE REFERENCE

2

In this section is described all the functional windows available to the Operator in Operational, Test and Maintenance Mode.

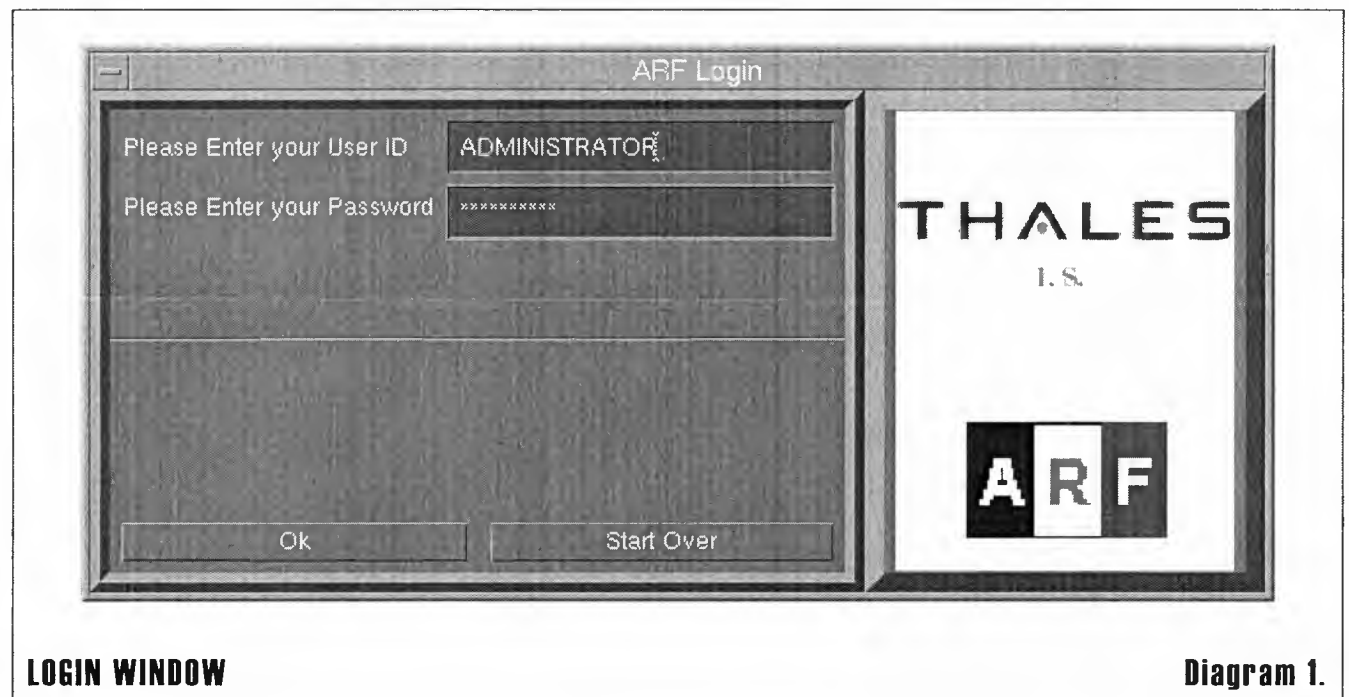
All the facilities are available in Operational and Test Mode as defined by the privileges for the user account utilised. In Maintenance mode non of the main functions are accessible, but the Oracle Browser, Server Management and Database Administration facilities only are available.

Login Window

When the ARF is run for the first time (see ARF User Manual Volume 2 - Installation Guide), the login window is displayed before the ARF Main Window is visible. Thereafter the Login Window is displayed when the Operator selects the menu option **Operator - Logon/Logoff**.

In order to start the Human Machine Interface, the Operator must enter a valid user account name and the current password for that account. Once the account and password have been checked, then the HMI is activated. All passwords are held in an encoded format using the encryption algorithm supplied with the ARF software.

Only one current Operator can be logged in for each instance of the HMI (i.e. on each workstation). The current Operator is automatically logged out when the next Operator logs on.



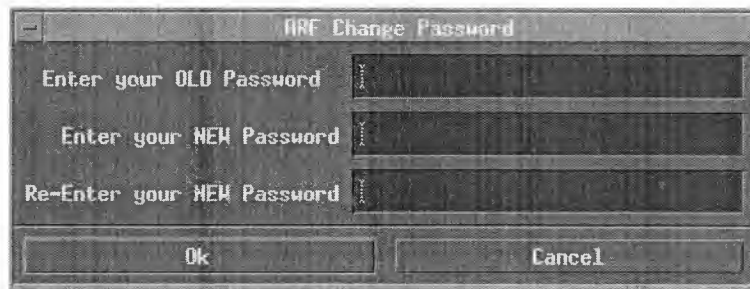
LOGIN WINDOW

Diagram 1.

Change Password Window

The Change Password Window allows each Operator to change their password whilst logged into the HMI. The Operator is prompted to enter their current password and to enter the new password twice. This ensures that only the current Operator can change the password even if the workstation is left unattended.

Valid passwords can be made up of any combination of alphanumeric characters and the password must be between 8 and 20 characters long. The password is NOT case sensitive.



CHANGE PASSWORD WINDOW

Diagram 2.

Main Window

Menu

The ARF menu is implemented as a menu bar with pull down sub-options for each menu bar option. Whenever a further level of selection is required, the pull down menu sub-option displays two or more slide-off sub-options. The structure of the menu is as follows:

Table 2A

ARF MENU

MENU BAR OPTION

PULL-DOWN SUB-OPTION

SLIDE-OFF SUB-OPTION

Media Operation

Retrieve Unformatted File

None

Media Operation

Ingest Media

Formatted

Media Operation

Ingest Media

Unformatted

Media Operation

Load Blank Media

None

Media Operation

Load New Media

None

Media Operation

Load Circulation Set

None

Media Operation

Unload Circulation Set

None

Media Operation

Format Media

None

Maintenance

Maintain Archive Media

None

Maintenance

Change Device Availability

None

Maintenance

Start Browser

None

Maintenance

Start Server Manager

None

Maintenance

Start Db Administration

None

Raw Tapes

Manage Raw Tapes

None

Operator

Logon/Logoff

None

Operator

Change Password

None

Operator

User Administration

None

Operator

User Options

None

Help

About ARF

None

HMI Access according to operator privilege

Menu options are available according to the privilege given to the user. The following tables show the available options for "OPERATOR" and "ADMINISTRATOR".

Table 2B

ARF MENU OPTIONS-OPERATOR PRIVILEGE

MENU BAR OPTION	PULL-DOWN SUB-OPTION	Availability (Y/N)
Media Operation	Retrieve Unformatted File	Y
Media Operation	Ingest Media	Y
Media Operation	Ingest Media	Y
Media Operation	Load Circulation Set	Y
Media Operation	Format Media	Y
Maintenance	Maintain Archive Media	N
Maintenance	Change Device Availability	N
Maintenance	Start Browser	N
Maintenance	Start Server Manager	N
Maintenance	Start Db Administration	N
Maintenance	Db Recovery from tapes	Y
Raw Tapes	Manage Raw Tapes	Y
Operator	Logon/Logoff	Y
Operator	Change Password	Y
Operator	User Administration	N
Operator	User Options	Y
Help	About ARF	Y

Table 2C

ARF MENU OPTIONS-ADMINISTRATOR PRIVILEGE

MENU BAR OPTION	PULL-DOWN SUB-OPTION	Availability (Y/N)
Media Operation	Retrieve Unformatted File	Y
Media Operation	Ingest Media	Y
Media Operation	Ingest Media	Y
Media Operation	Load Circulation Set	Y
Media Operation	Format Media	Y
Maintenance	Maintain Archive Media	Y
Maintenance	Change Device Availability	Y
Maintenance	Start Browser	Y
Maintenance	Start Server Manager	N
Maintenance	Start Db Administration	N
Maintenance	Db Recovery from tapes	Y
Raw Tapes	Manage Raw Tapes	Y
Operator	Logon/Logoff	Y
Operator	Change Password	Y
Operator	User Administration	Y
Operator	User Options	Y
Help	About ARF	Y

Status Pane

The Status Pane is located at the top of the body of the ARF Main Menu and contains information about the current status of the ARF. The Status Pane displays the following system information:

- ◆ **ARF Status**
 - ◆ **ARF Name:** the identity of this version of the ARF
 - ◆ **Centre:** the location of the ARF
 - ◆ **Device Maintenance Alarm:** a visible indication that at least one ARF device needs maintenance
- ◆ **Operator Details**
 - ◆ **Operator:** the name of the Operator currently logged on to the ARF
 - ◆ **Time:** the current time defined by the system clock
 - ◆ **Mode:** one of Operational, Test or Maintenance
- ◆ **ARF Processing**
 - ◆ **Ingested Files:** the number of files which have been ingested in the current session
 - ◆ **Disseminated Files:** the number of files which have been disseminated in the current session
 - ◆ **Archived Files:** the number of files which have been archived in the current session
- ◆ **Tape Library**
 - ◆ **Used Tapes:** the number of tapes in the near-line archive which contain one or more products
 - ◆ **Free Tapes:** the number of tapes in the near-line archive which contain no products
 - ◆ **Empty Slots:** the number of slots in the near-line archive which are currently empty

There are no controls or other Operator interactions which can be performed in the Status Pane.

ARF Status		Operator Details	
ARF Name	POHSE	Operator	ADMINISTRATOR
Centre	arf1	Time	Tue Dec. 2 09:49:00 1997
<input checked="" type="radio"/> Device Maintenance Status		Mode	OPERATIONAL
ARF Processing		Tape Library	
Ingested Files	0	Used Tapes	0
Disseminated Files	0	Free Tapes	0
Archived Files	0	Empty Slots	0

MAIN WINDOW - STATUS PANE

Diagram 3.

Manage NTP Archive Pane

The Manage NTP Archive Pane consists of:

- ◆ NTP Display Pane
- ◆ Operation options and status indicators
- ◆ Control Buttons
 - ◆ Print List
 - ◆ Start
 - ◆ Stop
- ◆ Status and prompt line

The information displayed in the NTP Display Pane changes depending on the selected operation option as shown below:

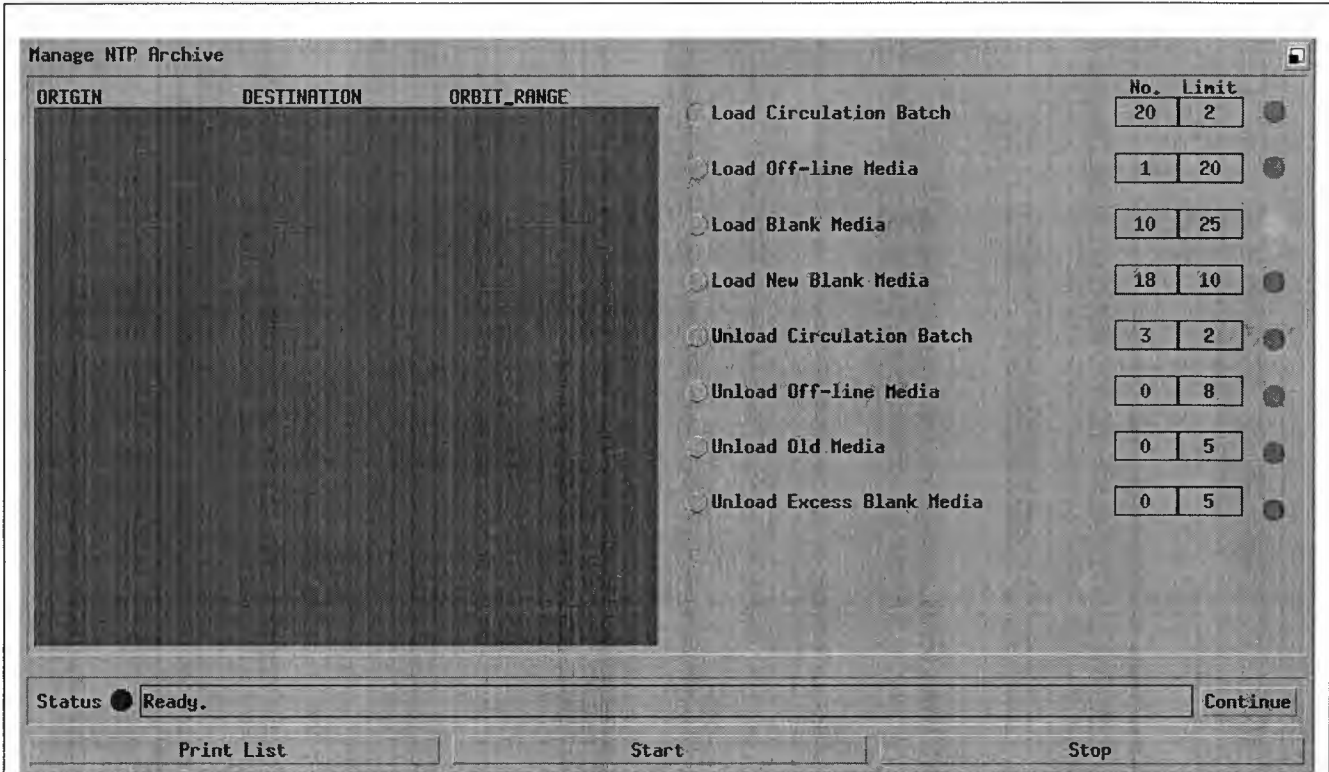
Table 2D

NTP INFORMATION

Option	Operation	Information Displayed
1	Load Circulation Batch	Tape Batch, Origin, Destination, First Orbit, Last Orbit
2	Load Off-Line Media	Origin, Destination, Orbit Range
3	Load Blank Media	None
4	Load New Media	None
5	Unload Circulation Batch	Tape Batch, Origin, Destination, First Orbit, Last Orbit
6	Unload Off-Line Batch	None
7	Unload Old Media	None
8	Unload Excess Blank Media	None

The number of items requiring attention are displayed next to each option and are monitored against the set of predefined maximum or minimum limits shown. When there are no items requiring attention of each type, its indicator is set to Green. When there are items ready for action, but the limit has not been reached, the indicator is set to Amber, and when the number of items reaches the limit the indicator is set to Red.

The limits can be changed for the current session by the Operator by selecting the Set Session Warning Limits window.



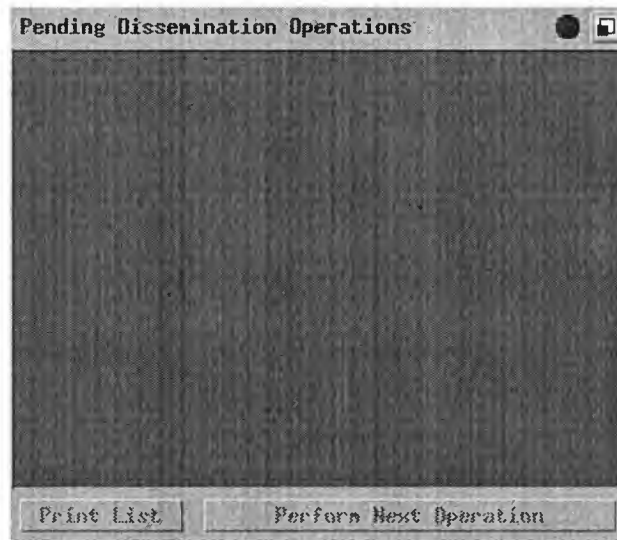
MAIN WINDOW - MANAGE NTP PANE

Diagram 4.

When an operation option is selected for action, the operator is guided through the operation by a sequence of sub-windows and dialogue windows displayed on top of the Main window.

Disseminate Data Pane

The Disseminate Data Pane is automatically updated, and displays the organisation and address of those organisations to which disseminations are ready to be actioned. A scroll bar is provided to allow the full field to be seen.


MAIN WINDOW - DISSEMINATE DATA PANE
Diagram 5.

Two control buttons are provided:

- ◆ **Print List:** allows the Operator to print a full list of pending operations
- ◆ **Perform Next Operation:** opens the Perform Dissemination window for the selected pending operation

Raw Tape Retrieval Pane

The Raw Tape Retrieval pane is automatically updated, and displays a list of raw tape sets which the Operator is required to retrieve.

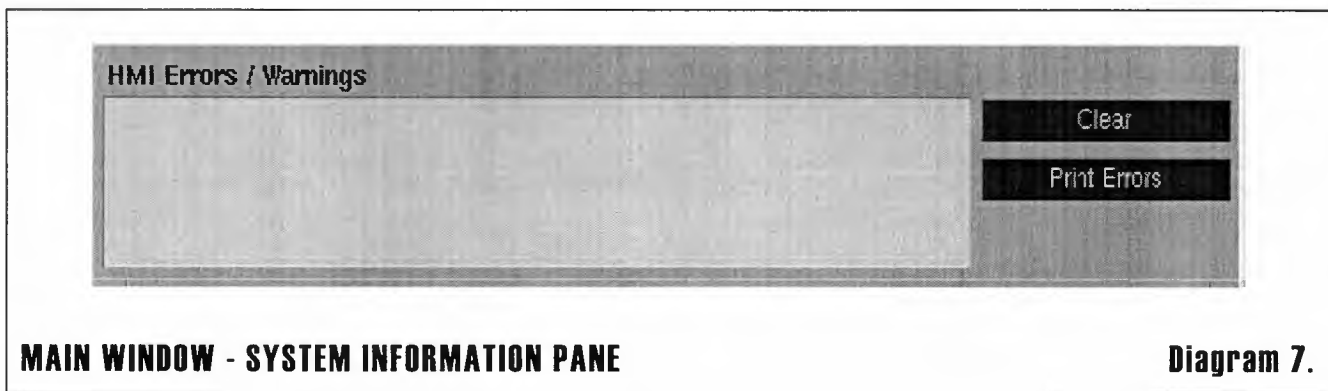

MAIN WINDOW - RAW TAPE RETRIEVAL PANE
Diagram 6.

Two control buttons are provided:

- ◆ **Print List:** allows the Operator to print a full list of pending retrievals
- ◆ **Retrieve Selected Tapes:** opens the Retrieve Raw Tape Operation window for the pre-selected retrieval operation

System Information Pane

The System Information Pane displays a selection of HMI errors, warnings and information messages. The Operator may select a message from the display area. The information is displayed until the Operator acknowledges the message by activating the OK control button or the message is more than 24 hours old, whichever occurs first.



MAIN WINDOW - SYSTEM INFORMATION PANE

Diagram 7.

The last five messages are normally displayed, but the Operator can review other messages by using the scroll bar on the right hand side of the display area.

The Operator has two control buttons which cause the ARF to perform the following functions:

- ◆ **Clear:** causes all the messages to be removed from the display
- ◆ **Print Errors:** causes all the messages to be printed.

Errors / Warnings List

Status	Message	Description
NOTICE	Disk Space Warning: <number>% full (PURGE at <number>%)	Sent when disk space is starting to fill up
NOTICE	Some files were not transcribed from tape <tape label>. Please try again later.	Sent when full transcription of a tape was not possible.
WARNING	Disk Space NEAR FULL: <number>% space used	Sent when disk space is almost full
WARNING	Not enough space to place file on volume <volume>	Sent when a file could not be read to a volume due to lack of space
WARNING	Purged online buffer to gain disk space	Sent when online buffer purged
ERROR	A&R MAIN PROCESS HAS DIED	Sent when the A&R main process dies unexpectedly.



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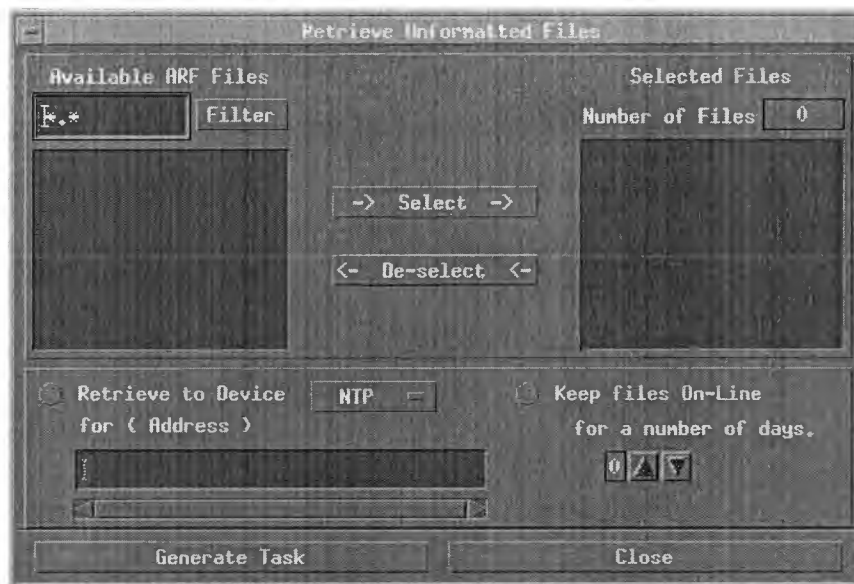
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Status	Message	Description
ERROR	D&D MAIN PROCESS HAS DIED	Sent when the D&D main process dies unexpectedly.
ERROR	Disk Space 100% FULL !	Sent when no more disk space is available
ERROR	File of type: <file type> failed ingestion, copied to: <directory>	Sent when a file fails ingestion
ERROR	INGEST MAIN PROCESS HAS DIED	Sent when the Ingest main process dies unexpectedly.
ERROR	INGEST MANAGE INVENTORY PROCESS HAS DIED	Sent when the Ingest Manage Inventory process dies unexpectedly.

Retrieve Unformatted Files Window

The Retrieve Unformatted Files window consists of the following constructs:

- ◆ **Filter control button and filter field:** allows the Operator to reduce the number of files displayed using the match specified in the filter field text entered
- ◆ **Available Files Display field:** shows the list of available files filtered to the Operators requirements. The Operator should select files from this area to be displayed in the Selected Files area.
- ◆ **Select control button:** causes the selected files to be displayed in the Selected Files area.
- ◆ **De-select control button:** causes the selected files to be removed from the Selected Files area.
- ◆ **Retrieve To Device radio button:** selects the operation required
- ◆ **Keep Files On-Line radio button:** selects the operation required
- ◆ **Media pull down selection list:** with which the Operator can select the appropriate media type for the current retrieve to device operation.
- ◆ **Number Of Days field:** by using the associated up/down controls, the Operator can specify the value of this parameter for files kept on-line.
- ◆ **Generate Task control button:** starts the selected operation on the files currently displayed in the Selected Files area.
- ◆ **Close control button:** causes the window to be shutdown and the action to be transferred back to the ARF Main window



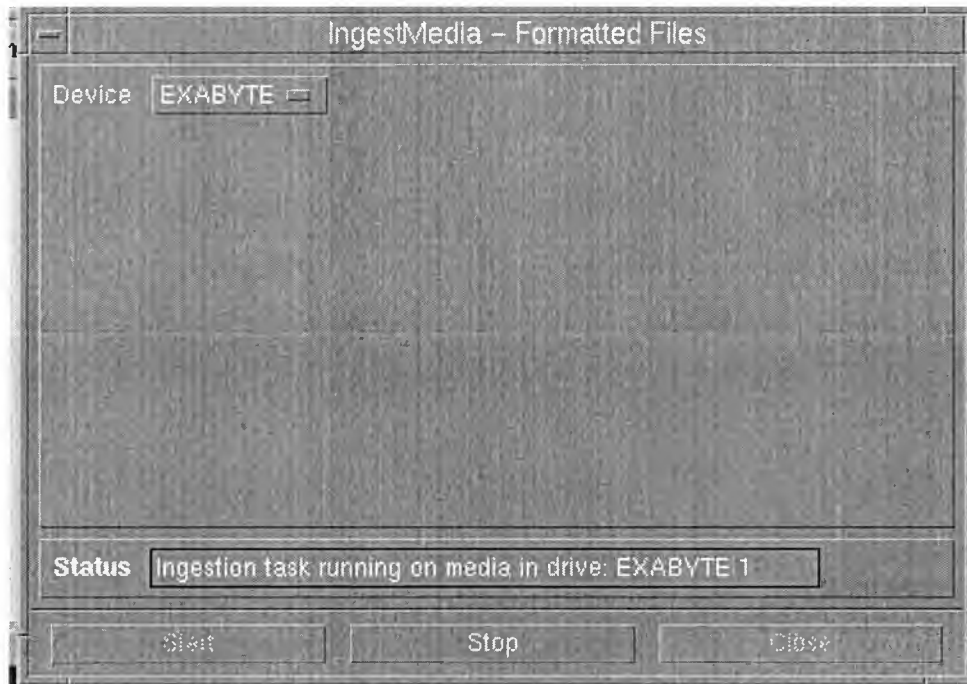
RETRIEVE UNFORMATTED FILES WINDOW

Diagram 8.

Ingest Formatted Media Window

The Ingest Formatted Media window consists of the following constructs:

- ◆ **Filter control button and filter field:** cannot be used.
- ◆ **Available Files Display field:** is not populated.
- ◆ **Select control button:** cannot be used.
- ◆ **De-select control button:** cannot be used.
- ◆ **Selected Files Display field:** shows the list of available files for ingestion
- ◆ **Status Indicator:** indicates that an action is required of the Operator
- ◆ **Prompt display:** informs the Operator what it is required to do
- ◆ **Continue control button:** allows the Operator to specify when he is ready to perform the next action
- ◆ **Start control button:** starts the selected operation on the files currently displayed in the Selected Files area.
- ◆ **Stop control button:** causes ingestion to stop on completion of the current file ingestion
- ◆ **Close control button:** causes the window to be shutdown and the action to be transferred back to the ARF Main window



INGEST FORMATTED MEDIA WINDOW

Diagram 9.

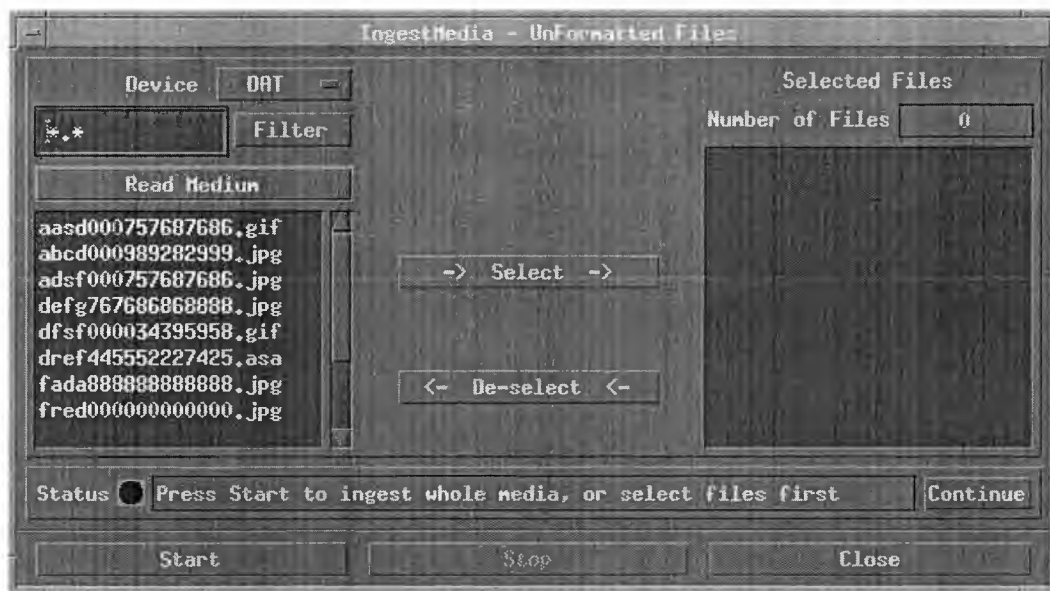
The status messages will change to the following:

- Ingestion task running on media in drive: EXABYTE 1
- All files have been Ingested successfully

Ingest Unformatted Media Window

The Ingest Unformatted Media window consists of the following constructs:

- ◆ **Filter control button and filter field:** allows the Operator to reduce the number of files displayed using the match specified in the filter field text entered
- ◆ **Available Files Display field:** shows the list of available files filtered to the Operators requirements. The Operator should select files from this area to be displayed in the Selected Files area.
- ◆ **Select control button:** causes the selected files to be displayed in the Selected Files area
- ◆ **De-select control button:** causes the selected files to be removed from the Selected Files area.
- ◆ **Selected Files Display field:** shows the list of files selected by the Operator for ingestion
- ◆ **Status Indicator:** indicates that an action is required of the Operator
- ◆ **Prompt display:** informs the Operator what it is required to do
- ◆ **Continue control button:** allows the Operator to specify when he is ready to perform the next action
- ◆ **Start control button:** starts the selected operation on the files currently displayed in the Selected Files area.
- ◆ **Stop control button:** causes ingestion to stop on completion of the current file ingestion
- ◆ **Close control button:** causes the window to be shutdown and the action to be transferred back to the ARF Main window



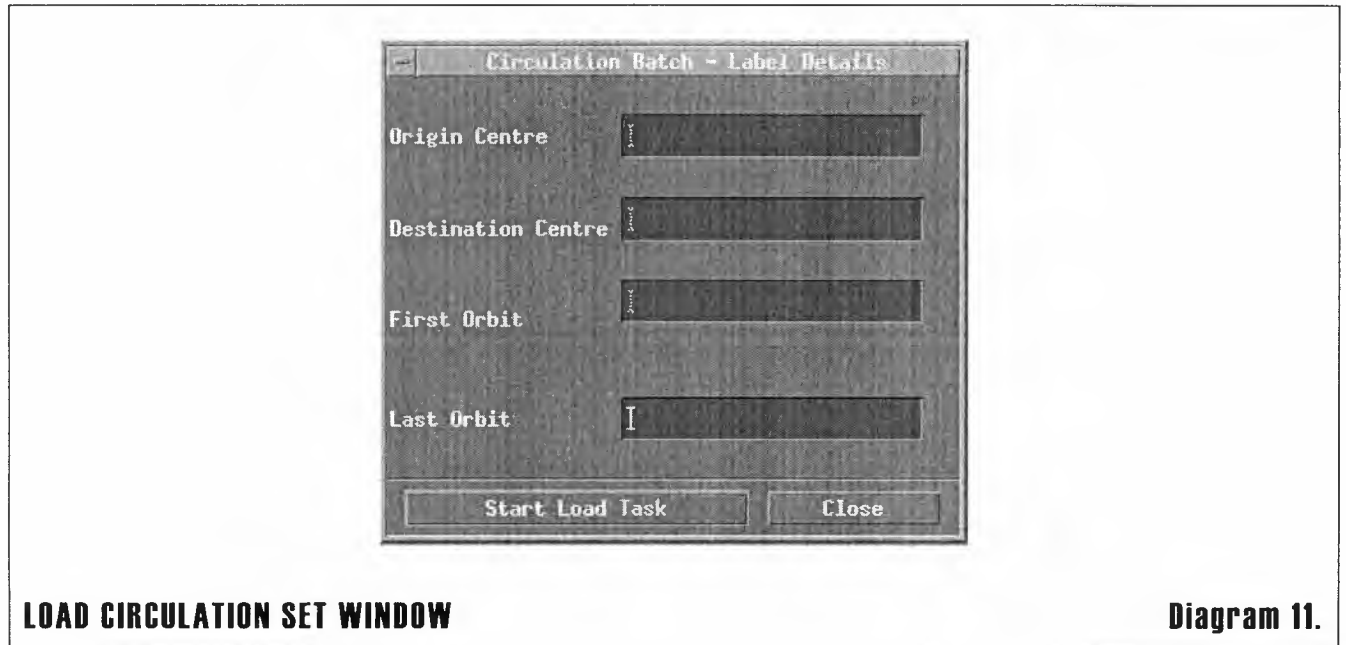
INGEST UNFORMATTED MEDIA WINDOW

Diagram 10.

Load Circulation Set Window

When selected, Load Circulation Batch consists of a series of simple dialogue windows and the Circulation Batch - Label Details window.

Initially the Operator is asked to specify the media type being inserted. Then the Circulation Batch - Label Details window is displayed.



LOAD CIRCULATION SET WINDOW

Diagram 11.

The Circulation Batch - Label Details window consists of the following constructs:

- ◆ **Origin Centre:** the identity of the centre where the data originally came from.
- ◆ **Destination Centre:** the identity of the centre where the circulation batch is to be sent
- ◆ **First Orbit:** the reference of the first orbit for which the data is required.
- ◆ **Last Orbit :** the reference of the last orbit for which the data is required.
- ◆ **Start Load Task control button:** starts the circulation task
- ◆ **Close control button:** closes the window when the task is complete.

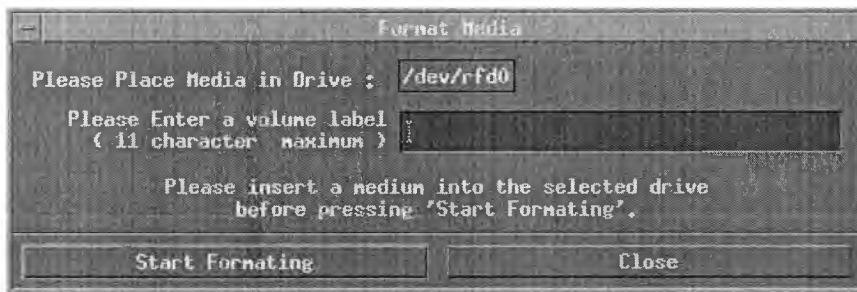
The Operator is then prompted to load the tapes into the near-line archive and verify when this has been done.

The ARF will then notify the Operator how many tapes were accepted and ejected.

Format Media Window

The Format Media window consists of the following constructs:

- ◆ **Media Drive:** automatically allocated by the ARF system.
- ◆ **Volume Label:** a free text field of up to 11 characters used to identify the floppy disk
- ◆ **Start Formatting control button:** starts the formatting task
- ◆ **Close control button:** closes the window when the task is complete.



FORMAT MEDIA WINDOW

Diagram 12.

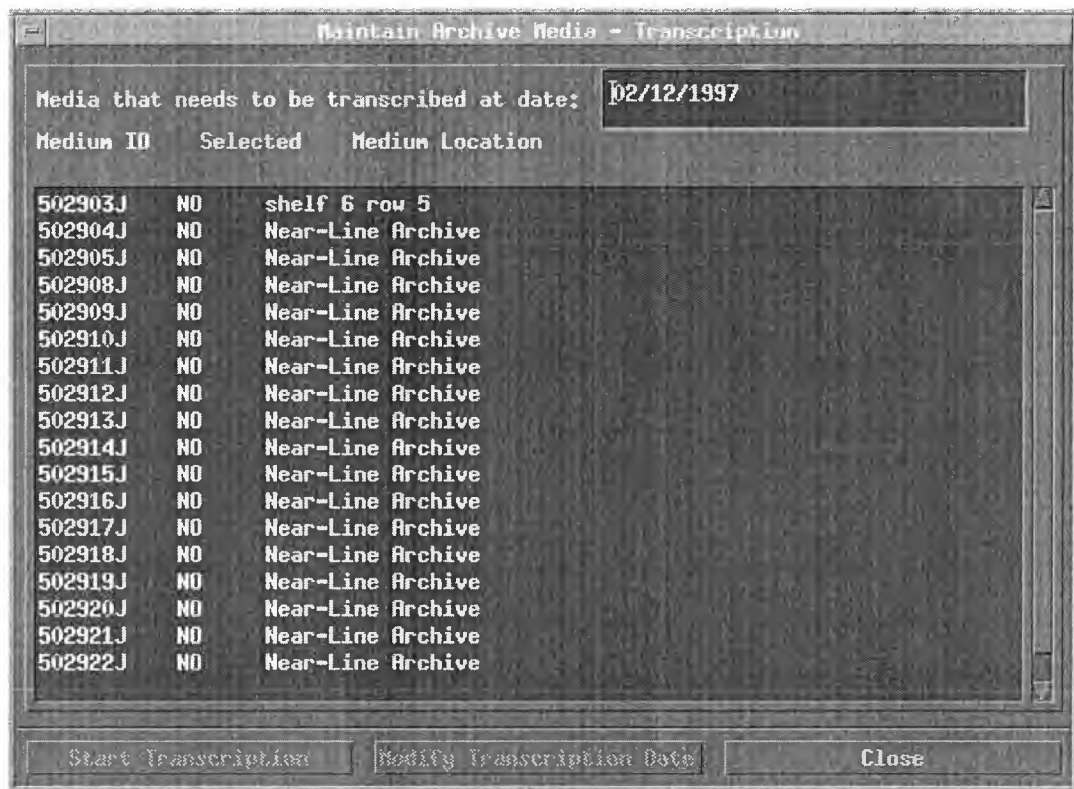
When the task has been completed, the Operator is prompted to see if he or she wants to format another floppy.

Maintain Archive Media Windows

Maintain Archive Media consists of two windows:

- ◆ Maintain Archive Media - Transcription
- ◆ Maintain Archive Media - Re-Tension

The Transcription window is used to copy files from old media which have reached the end of their safe operational life onto new media.



MAINTAIN ARCHIVE MEDIA - TRANSCRIPTION WINDOW

Diagram 13.

The window consists of the following constructs:

- ◆ **Media Transcription Date:** specifies the date against which the ARF searches for media which have or will reach their expiry date.
- ◆ **Media Display area:** shows the list of all media which match the set parameter and allows the Operator to select one or more media.
- ◆ **Start Transcription control button:** starts the media transcription for all media selected from the Media Display area.
- ◆ **Modify Transcription Date control button:** allows the Operator to change the date on which the selected media will expire.
- ◆ **Close control button:** closes the window when all tasks have been completed.

The Re-Tension window allows the operator to find the media which need re-tensioning and to either re-tension them or change the date on which they need to be re-tensioned.



MAINTAIN ARCHIVE MEDIA - RE-TENSION WINDOW

Diagram 14.

The window consists of the following constructs:

- ◆ **Media Re-Tension Date:** specifies the date against which the ARF searches for media which have or will reach their re-tension date.
- ◆ **Media Display area:** shows the list of all media which match the set parameter and allows the Operator to select one or more media.
- ◆ **Start Re-Tension control button:** starts the media re-tension for all media selected from the Media Display area.
- ◆ **Modify Re-Tension Date control button:** allows the Operator to change the date on which the selected media require to be re-tensioned.
- ◆ **Close control button:** closes the window when all tasks have been completed.

Change Device Availability Window

The Change Device Availability allows the Operator to check and update the availability of all ARF devices.



CHANGE DEVICE AVAILABILITY WINDOW

Diagram 15.

The window consists of the following constructs:

- ◆ Device display area: lists all the devices defined for the ARF system. The following information is shown for each device:
 - ◆ **Device Name**
 - ◆ **Device Type**
 - ◆ **Status** (available, unavailable, maintenance, fault or manual mode)
 - ◆ **Need To Maintain**
- ◆ Device Status radio field: allows the Operator to select a new status for each device
- ◆ Change Device Status control button: saves the amended device status to the database
- ◆ Close control button: closes the window when all tasks have been completed.

Browser Window

When the Browser window is selected, the ARF system calls ORACLE Discoverer in read only mode.

For further details, please see the Oracle Manual.

Server Management Window

When the Browser window is selected, the ARF system calls ORACLE Server Manager.

For further details, please see the Oracle Manual.

Database Administration Window

When the Browser window is selected, the ARF system calls ORACLE Discoverer in full privilege mode.

For further details, please see the Oracle Manual.

Manage Raw Tapes Window

The Manage Raw Tapes window is used to manage the raw tapes which are held in the archive.



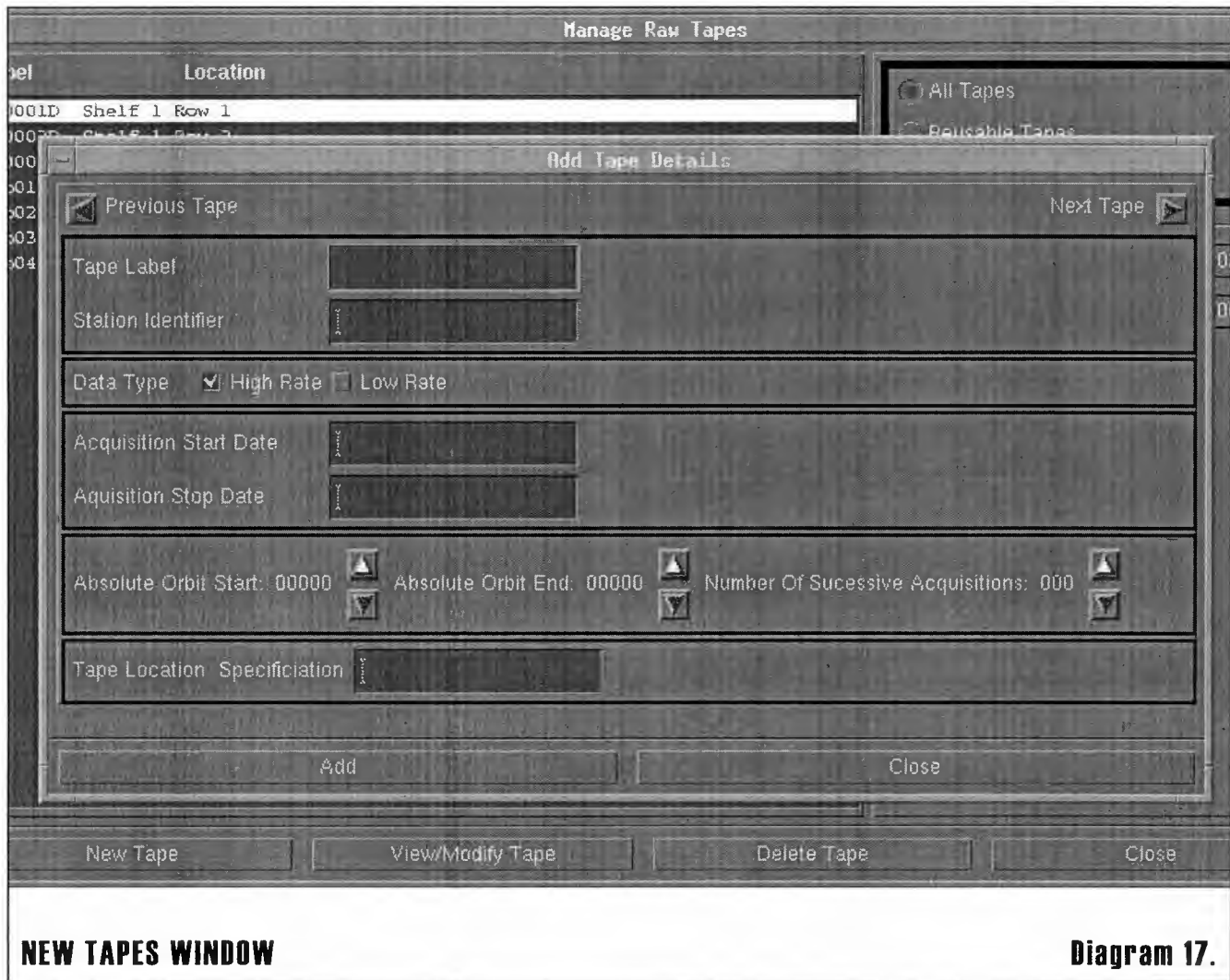
MANAGE RAW TAPES WINDOW

Diagram 16.

The window consists of the following constructs:

- ◆ **Raw Tape display area:** displays a list of all raw tapes in the database from which the Operator can select one to view, modify or delete.
- ◆ **Display Filter Options check button:** can be used to select none, one or more of the following options:
 - ◆ **display all tapes**
 - ◆ **display all tapes which can be reused**
 - ◆ **display all tapes which can be discarded**
- ◆ **Minimum Availability field:** the minimum number of days the tape(s) will be available
- ◆ **Minimum Tape Life Time field:** the number of writes below which the tape can be used
- ◆ **New Tape control button:** displays the Add New Tape window (see below)
- ◆ **View/Modify Tape control button:** opens the View/Modify Tape window (see below)
- ◆ **Delete Tape control button:** deletes the selected tape
- ◆ **Close control button:** closes the window when all the tasks are complete.

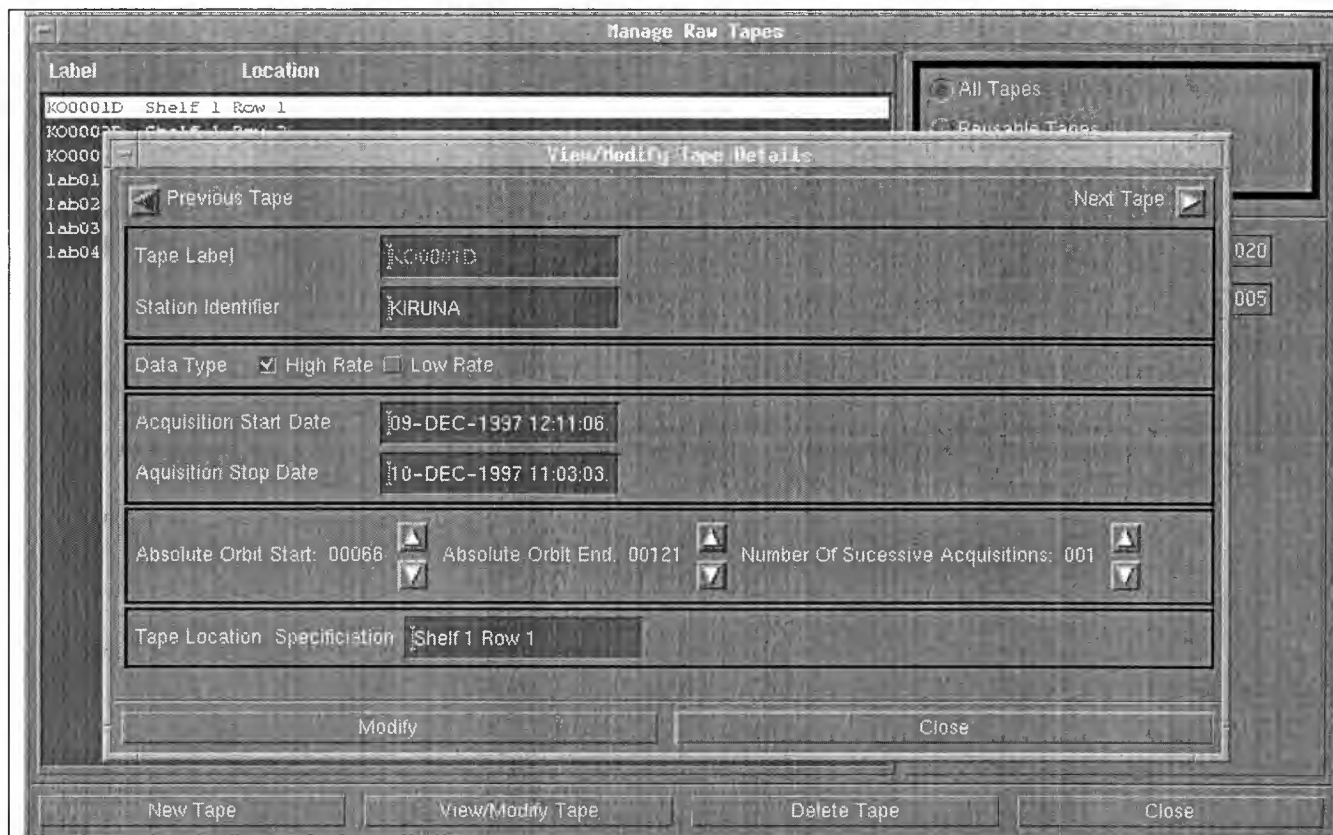
When the New Tape control button is selected the following New Tape window is opened on top of the Manage Raw Tapes window.


NEW TAPES WINDOW
Diagram 17.

This window requires the Operator to enter the new tape details from the delivery note and consists of the following constructs:

- ◆ **Tape Label entry field:** to enter the tape label
- ◆ **Station Identifier entry field:** to enter the station unique identifier
- ◆ **Data Type toggle button:** to select Hi or Lo rate
- ◆ **Acquisition Start Date entry field:** to enter the start date of the data acquisition
- ◆ **Acquisition Stop date entry field:** to enter the stop date of the data acquisition
- ◆ **Absolute Orbit Start field:** to enter the start orbit of the data acquisition
- ◆ **Absolute Orbit End field:** to enter the last orbit of the data acquisition
- ◆ **Number Of Successive Acquisitions field:** to enter the number
- ◆ **Tape Location entry field:** to enter the location reference
- ◆ **Modify control button:** causes the entered tape details to be saved
- ◆ **Close control button:** closes the window when all tasks have been completed

When the View/Modify Tape control button is selected the following View/Modify Tape window is opened on top of the Manage Raw Tapes window.



VIEW/MODIFY TAPES WINDOW

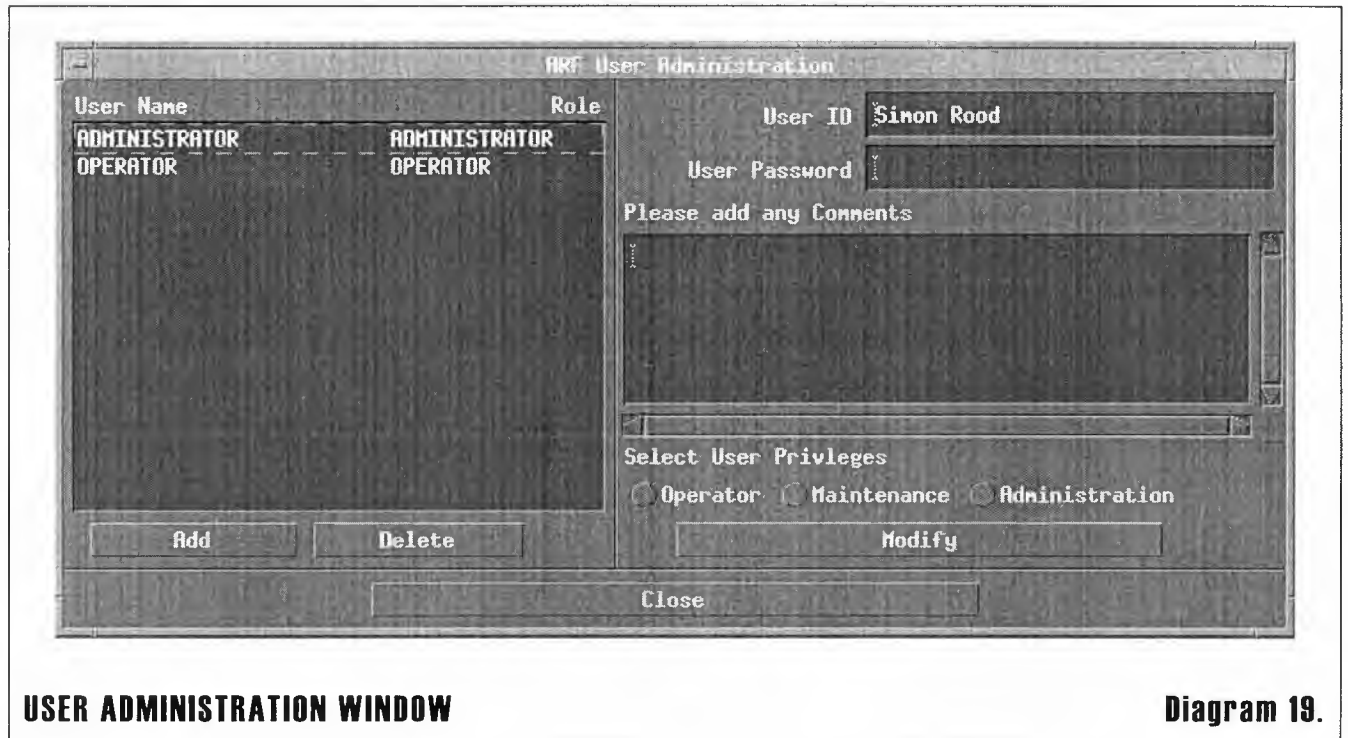
Diagram 18.

This window the Operator to enter the new tape details from the delivery note and consists of the following constructs:

- ◆ **Tape Label entry field:** to amend the tape label
- ◆ **Station Identifier entry field:** to amend the station unique identifier
- ◆ **Data Type toggle button:** to select Hi or Lo rate
- ◆ **Acquisition Start Date entry field:** to amend the start date of the data acquisition
- ◆ **Acquisition Stop date entry field:** to amend the stop date of the data acquisition
- ◆ **Absolute Orbit Start field:** to amend the start orbit of the data acquisition
- ◆ **Absolute Orbit End field:** to amend the last orbit of the data acquisition
- ◆ **Number Of Successive Acquisitions field:** to amend the number
- ◆ **Tape Location entry field:** to amend the location reference
- ◆ **Add control button:** causes the amended tape details to be saved
- ◆ **Close control button:** closes the window when all tasks have been completed

User Administration Window

The User Administration window is used to maintain ARF user accounts.



USER ADMINISTRATION WINDOW

Diagram 19.

This window consists of the following constructs:

- ◆ **User Display Area:** displays a list of all the current system users and their roles (privileges)
- ◆ **User ID entry field:** in which the Operator can enter the name of a new user, or the selected user's name is displayed.
- ◆ **User Password entry field:** the Operator should type the user's initial password here when setting up a new account, or enter a new password if a user has forgotten his or her current password. Note, the password typed is not displayed.
- ◆ **User Comments entry field:** a free text entry field to record any information required to be saved about each user (e.g. full name, telephone number, etc.)
- ◆ **User Privilege radio field:** used to select the privilege level for a new user, or to change the level for an existing user. Note, the default privileges are 'Operator', 'Maintenance' and 'Administration'.
- ◆ **Add control button:** enables the Operator to add a new user.
- ◆ **Delete control button:** enables the Operator to delete an existing user.
- ◆ **Modify control button:** saves the values of User ID, Privilege, Password and Comments entered in the entry fields.
- ◆ **Close control button:** closes the window.

Restore From Media Window

If it is not possible to restore the ARF from the last Oracle database backup, redo and undo logs, then it is possible to restore the database to any safe backup (usually the latest), and rebuild the rest of the database records by re-inserting media from the near-line and off-line archive.

The database should be restored to the chosen backup whilst the ARF software is NOT running as follows.

[TBD - Dependent on LEGATO - to be updated in subsequent release of this document]

It is the Operator's responsibility to find out which media have been processed since the chosen backup, and to gather these tapes from the near-line and off-line archive as appropriate.

Once this has been done, the tapes should be inserted into the robot, and the Restore From Media window selected. Using this window the Operator can select the media to restore and the ARF will re-ingest the files from the tapes without producing an Inventory Report.

TBD

RESTORE FROM MEDIA WINDOW

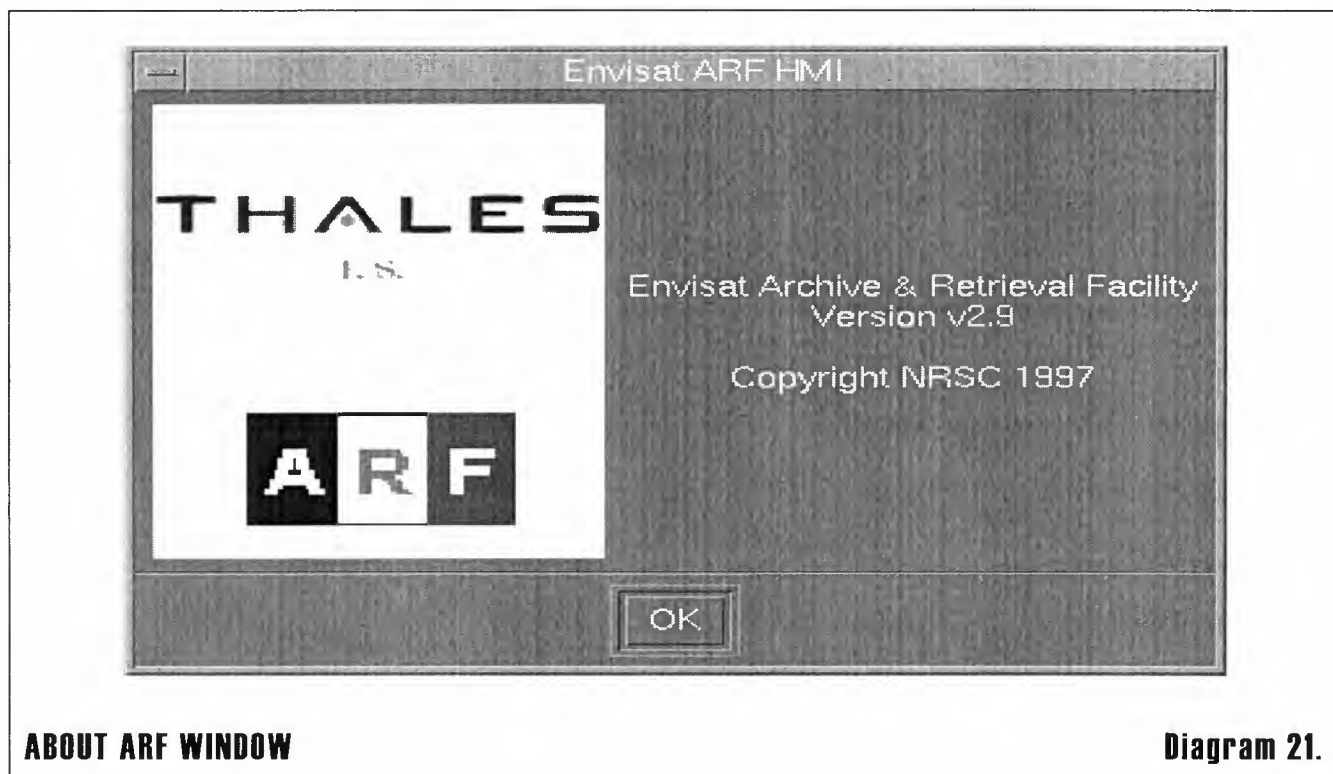
Diagram 20.

This window consists constructs TBD:

About ARF Window

The About ARF window contains details of the current versions of the ARF and ARF Software. The version of the ARF are determined by the ARF identity as specified in the ARF Instance table (e.g. ARF1). The version of the ARF software shown is also derived from this table (e.g. V2.01).

Whenever a new version of the ARF software is installed or patched are applied to the ARF, this window automatically displays the current information so that the Operator can check which version is currently running.



ABOUT ARF WINDOW

Diagram 21.

OPERATIONS REFERENCE

3

Start-Up and Shut-Down Procedures

Start up and shut down are performed automatically on instruction from the CMC. Start-up is initiated by CSF, shut down is initiated by the ARF.

Starting the ARF in Operational Mode- with main process name ARFM

The ARF is started in Operational mode by carrying out the following sequence:

cd /data2/CSF/bin (or wherever the CSF binaries are stored on your machine).

Type CSMPagent -m OPERATIONAL - this starts the Main Process Agent.

Edit the /pds_bin/arf/pds_bin/arf/current/ARF_SCRIPTS/current/EXE/arf_env_vars file : set the variables in function of your needs. Eg for CDRF set ARF_CDRF_MODE to ENABLED if you need to use the CDRF, and if you don't need to use it set this variable to DISABLED.

Type CScsssStartup -n ARFM -m OPERATIONAL

After ~30sec -1 minute the HMI screen will pop up. The operator must provide a name and password for the startup sequence to continue. The default values are ADMINISTRATOR with password ARF.

Stopping the ARF in Operational Mode.

The ARF is stopped in Operational mode by typing the following command:

CScsssShutdown -n ARFM

Starting the ARF in Test Mode

The ARF is started in Test mode as follows:

Stop the Main Process Agent by determining its PID using the command "ps -ef | grep OPERATIONAL" and then killing the process using "kill". It is assumed that the ARF was previously running in Operational mode.

Edit the CStmpa.cfg file to replace CS_OPERATIONAL with CS_TEST. This file is found in /data2/CSF/config (or wherever the CSF config directory are stored on your machine).

cd /data2/CSF/bin (or wherever the CSF binaries are stored on your machine).

Type CSMPagent -m OPERATIONAL - this starts the Main Process Agent.

Edit the /pds_bin/arf/pds_bin/arf/current/ARF_SCRIPTS/current/EXE/arf_env_vars file : set the variables in function of your needs. Eg for CDRF set ARF_CDRF_MODE to ENABLED if you need to use the CDRF, and if you don't need to use it set this variable to DISABLED.

Type CScsssStartup -n ARFM -m TEST

After ~30sec -1 minute the HMI screen will pop up. The operator must provide a name and password for the startup sequence to continue. The default values are ADMINISTRATOR with password ARF.

Stopping the ARF in Test Mode.

The ARF is stopped in test mode by typing the following command:

```
CScsssShutdown -n ARFM
```

Starting the ARF in Maintenance Mode

The ARF is started in Maintenance mode as follows:

Stop the Main Process Agent by determining its PID using the command "ps -ef | grep OPERATIONAL" and then killing the process using "kill". It is assumed that the ARF was previously running in Operational mode.

Edit the CStmpa.cfg file to replace CS_OPERATIONAL with CS_MAINTENANCE. This file is found in /data2/CSF/config (or wherever the CSF config directory are stored on your machine).

```
cd /data2/CSF/bin ( or wherever the CSF binaries are stored on your machine).
```

Type CSMPagent -m OPERATIONAL- this starts the Main Process Agent.

Edit the /pds_bin/arf/pds_bin/arf/current/ARF_SCRIPTS/current/EXE/arf_env_vars file : set the variables in function of your needs. Eg for CDRF set ARF_CDRF_MODE to ENABLED if you need to use the CDRF, and if you don't need to use it set this variable to DISABLED.

```
Type CScsssStartup -n ARFM -m MAINTENANCE
```

After ~30sec -1 minute the HMI screen will pop up. The operator must provide a name and password for the startup sequence to continue. The default values are ADMINISTRATOR with password ARF.

Stopping the ARF in Test Mode.

The ARF is stopped in test mode by typing the following command:

```
CScsssShutdown -n ARFM
```

Starting the ARF with main process name ARF1

Stop the Main Process Agent by determining its PID using the command "ps -ef | grep OPERATIONAL" and then killing the process using "kill". It is assumed that the ARF was previously running in Operational mode.

Edit the CStmpa.cfg file to replace MPID ARFM with MPID ARF1. This file is found in /data2/CSF/config (or wherever the CSF config directory are stored on your machine).

```
cd /data2/CSF/bin ( or wherever the CSF binaries are stored on your machine).
```

Type CSMPagent -m OPERATIONAL- this starts the Main Process Agent.

Edit the /pds_bin/arf/pds_bin/arf/current/ARF_SCRIPTS/current/EXE/arf_env_vars file : set the variables in function of your needs. Eg for CDRF set ARF_CDRF_MODE to ENABLED if you need to use the CDRF, and if you don't need to use it set this variable to DISABLED.

```
Type CScsssStartup -n ARF1 -m OPERATIONAL
```

After ~30sec -1 minute the HMI screen will pop up. The operator must provide a name and password for the startup sequence to continue. The default values are ADMINISTRATOR with password ARF.

Stopping the ARF with main process name ARF1.

The ARF is stopped in test mode by typing the following command:

```
CScsssShutdown -n ARF1
```

Manual Shut-Down Procedures

In the event that the CMC is unable to shut down the ARF, the following manual procedure may be followed in order to cause the ARF to shut down autonomously.

Manual Shutdown Procedure:

- ◆ Identify Manage Archive process for the required instance of the ARF required to be shutdown
- ◆ Issue a UNIX "kill -9 <process_name>" command against the Manage Archive process

The Manage Archive process will then shutdown all child processes of the ARF, and then shut itself down.

In the event of a serious fault which results in the ARF not shutting down, then each ARF process will need to be identified and "killed" separately using the above command.

It should not be necessary to completely power down the ARF system, but if this needs to be done the Operator should switch off the hardware in the following sequence:

- ◆ ARF Server
- ◆ Robot
- ◆ External Peripherals (e.g. printers, cd-rom device, etc.)

Reading CSF Log Files

The Envisat ARF logs significant information, warnings and errors to the CSF Log file. The CSF log file may be read using the CSF CSLogsRead command, details of which are to be found in the CSF Software User Manual. A listing of the error cases that may be logged to the CSF log files is to be found in Chapter 4 of this manual.

Inventory Update Files

The ARF software automatically produces and transmits Inventory Update (INV) files.

When the files are first created in the ARF, they are suffixed .nys (not yet sent). The ARF then sends the file to the Inventory and if an Acknowledge (ACK) is received the file is deleted as it is no longer required at the ARF.

If, however, a Not Acknowledge (NACK) is received the file is renamed with a .ufl suffix and kept in the ARF for future reference. The file remains in directory /pds_data/arf/from_arf/to_inv.

System Configuration Tables

The system configuration tables must be set up on installation (by running the table Populate Scripts) and define the configuration of the ARF system environment.

Whenever it is required to change the system configuration table contents (i.e. adding a new record or modifying an existing one but NOT deleting any record), then the Populate Table script for that table should be extended with the new details.

An example is given below.

To Add a New Disseminate Drive Type, locate the table Populate Script. In this case it is "Disseminate_Drive_Type.sql".

```

REM DATABASE TABLE POPULATION SCRIPT
REM
REM Populate operational.Disseminate_Drive_Type
REM
HOST echo "Populating operational.Disseminate_Drive_Type"
INSERT INTO operational.Disseminate_Drive_Type (Disseminate_Drive_Type_Name,
Write_Speed, Read_Speed, Maintenance_Period)
VALUES ('EXABYTE', 1000000, 1000000, 604800);
INSERT INTO operational.Disseminate_Drive_Type (Disseminate_Drive_Type_Name,
Write_Speed, Read_Speed, Maintenance_Period)
VALUES ('DAT', 1000000, 1000000, 604800);
INSERT INTO operational.Disseminate_Drive_Type (Disseminate_Drive_Type_Name,
Write_Speed, Read_Speed, Maintenance_Period)
VALUES ('NTP', 2000000, 2000000, 604800);
INSERT INTO operational.Disseminate_Drive_Type (Disseminate_Drive_Type_Name,
Write_Speed, Read_Speed, Maintenance_Period)
VALUES ('CD_ROM', 2000000, 2000000, 604800);
INSERT INTO operational.Disseminate_Drive_Type (Disseminate_Drive_Type_Name,
Write_Speed, Read_Speed, Maintenance_Period)
VALUES ('DVD_ROM', 2000000, 2000000, 604800);
INSERT INTO operational.Disseminate_Drive_Type (Disseminate_Drive_Type_Name,
Write_Speed, Read_Speed, Maintenance_Period)
VALUES ('FLOPPY', 1000000, 1000000, 604800);
INSERT INTO operational.Disseminate_Drive_Type (Disseminate_Drive_Type_Name,
Write_Speed, Read_Speed, Maintenance_Period)
VALUES ('DLT', 2000000, 2000000, 604800);
INSERT INTO operational.Disseminate_Drive_Type (Disseminate_Drive_Type_Name,
Write_Speed, Read_Speed, Maintenance_Period)
VALUES ('D1', 2000000, 2000000, 604800);
REM
REM Populate test.Disseminate_Drive_Type
REM
HOST echo "Populating test.Disseminate_Drive_Type"
INSERT INTO test.Disseminate_Drive_Type (Disseminate_Drive_Type_Name,
Write_Speed, Read_Speed, Maintenance_Period)
VALUES ('EXABYTE', 1000000, 1000000, 604800);
INSERT INTO test.Disseminate_Drive_Type (Disseminate_Drive_Type_Name,
Write_Speed, Read_Speed, Maintenance_Period)
VALUES ('DAT', 1000000, 1000000, 604800);
INSERT INTO test.Disseminate_Drive_Type (Disseminate_Drive_Type_Name,
Write_Speed, Read_Speed, Maintenance_Period)
VALUES ('NTP', 2000000, 2000000, 604800);
INSERT INTO test.Disseminate_Drive_Type (Disseminate_Drive_Type_Name,

```



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```
Write_Speed, Read_Speed, Maintenance_Period)
VALUES ('CD_ROM', 2000000, 2000000, 604800);
INSERT INTO operational.Disseminate_Drive_Type (Disseminate_Drive_Type_Name,
Write_Speed, Read_Speed, Maintenance_Period)
VALUES ('DVD_ROM', 2000000, 2000000, 604800);
INSERT INTO test.Disseminate_Drive_Type (Disseminate_Drive_Type_Name,
Write_Speed, Read_Speed, Maintenance_Period)
VALUES ('FLOPPY', 1000000, 1000000, 604800);
INSERT INTO test.Disseminate_Drive_Type (Disseminate_Drive_Type_Name,
Write_Speed, Read_Speed, Maintenance_Period)
VALUES ('DLT', 2000000, 2000000, 604800);
INSERT INTO test.Disseminate_Drive_Type (Disseminate_Drive_Type_Name,
Write_Speed, Read_Speed, Maintenance_Period)
VALUES ('D1', 2000000, 2000000, 604800);

COMMIT;
REM END
```

DISSEMINATE_DRIVE_TYPE POPULATION SCRIPT

Diagram 22.

The next step is to add the differences to the bottom of the table Populate Script (shown in Red).

```
REM DATABASE TABLE POPULATION SCRIPT
REM
REM Populate operational.Disseminate_Drive_Type
REM
HOST echo "Populating operational.Disseminate_Drive_Type"
INSERT INTO operational.Disseminate_Drive_Type (Disseminate_Drive_Type_Name,
Write_Speed, Read_Speed, Maintenance_Period)
VALUES ('EXABYTE', 1000000, 1000000, 604800);
INSERT INTO operational.Disseminate_Drive_Type (Disseminate_Drive_Type_Name,
Write_Speed, Read_Speed, Maintenance_Period)
VALUES ('DAT', 1000000, 1000000, 604800);
INSERT INTO operational.Disseminate_Drive_Type (Disseminate_Drive_Type_Name,
Write_Speed, Read_Speed, Maintenance_Period)
VALUES ('NTP', 2000000, 2000000, 604800);
INSERT INTO operational.Disseminate_Drive_Type (Disseminate_Drive_Type_Name,
Write_Speed, Read_Speed, Maintenance_Period)
VALUES ('CD_ROM', 2000000, 2000000, 604800);
INSERT INTO operational.Disseminate_Drive_Type (Disseminate_Drive_Type_Name,
Write_Speed, Read_Speed, Maintenance_Period)
VALUES ('DVD_ROM', 2000000, 2000000, 604800);
INSERT INTO operational.Disseminate_Drive_Type (Disseminate_Drive_Type_Name,
Write_Speed, Read_Speed, Maintenance_Period)
VALUES ('FLOPPY', 1000000, 1000000, 604800);
INSERT INTO operational.Disseminate_Drive_Type (Disseminate_Drive_Type_Name,
Write_Speed, Read_Speed, Maintenance_Period)
VALUES ('DLT', 2000000, 2000000, 604800);
INSERT INTO operational.Disseminate_Drive_Type (Disseminate_Drive_Type_Name,
Write_Speed, Read_Speed, Maintenance_Period)
VALUES ('D1', 2000000, 2000000, 604800);
REM
REM Populate test.Disseminate_Drive_Type
REM
HOST echo "Populating test.Disseminate_Drive_Type"
INSERT INTO test.Disseminate_Drive_Type (Disseminate_Drive_Type_Name,
Write_Speed, Read_Speed, Maintenance_Period)
```

```

VALUES ('EXABYTE', 1000000, 1000000, 604800);
INSERT INTO test.Disseminate_Drive_Type (Disseminate_Drive_Type_Name,
Write_Speed, Read_Speed, Maintenance_Period)
VALUES ('DAT', 1000000, 1000000, 604800);
INSERT INTO test.Disseminate_Drive_Type (Disseminate_Drive_Type_Name,
Write_Speed, Read_Speed, Maintenance_Period)
VALUES ('NTP', 2000000, 2000000, 604800);
INSERT INTO test.Disseminate_Drive_Type (Disseminate_Drive_Type_Name,
Write_Speed, Read_Speed, Maintenance_Period)
VALUES ('CD_ROM', 2000000, 2000000, 604800);
INSERT INTO operational.Disseminate_Drive_Type (Disseminate_Drive_Type_Name,
Write_Speed, Read_Speed, Maintenance_Period)
VALUES ('DVD_ROM', 2000000, 2000000, 604800);
INSERT INTO test.Disseminate_Drive_Type (Disseminate_Drive_Type_Name,
Write_Speed, Read_Speed, Maintenance_Period)
VALUES ('FLOPPY', 1000000, 1000000, 604800);
INSERT INTO test.Disseminate_Drive_Type (Disseminate_Drive_Type_Name,
Write_Speed, Read_Speed, Maintenance_Period)
VALUES ('DLT', 2000000, 2000000, 604800);
INSERT INTO test.Disseminate_Drive_Type (Disseminate_Drive_Type_Name,
Write_Speed, Read_Speed, Maintenance_Period)
VALUES ('D1', 2000000, 2000000, 604800);

COMMIT;
REM END

REM AMENDMENT 0001 to DATABASE TABLE POPULATION SCRIPT
REM
REM Populate operational.Disseminate_Drive_Type
REM
HOST echo "Amending operational.Disseminate_Drive_Type"
INSERT INTO operational.Disseminate_Drive_Type (Disseminate_Drive_Type_Name,
Write_Speed, Read_Speed, Maintenance_Period)
VALUES ('EXABYTE_2', 1000000, 1000000, 604800);
REM
REM Populate test.Disseminate_Drive_Type
REM
HOST echo "Amending test.Disseminate_Drive_Type"
INSERT INTO test.Disseminate_Drive_Type (Disseminate_Drive_Type_Name,
Write_Speed, Read_Speed, Maintenance_Period)
VALUES ('EXABYTE_2', 1000000, 1000000, 604800);
COMMIT;
REM END

```

UPDATED DISSEMINATE_DRIVE_TYPE POPULATION SCRIPT
Diagram 23.

The previous population script should now be archived and replaced by the one above. This will ensure that whenever a future ARF is created, the environment tables will contain all the new details.

To make the changes to the live ARF, it is suggested that the modifications are first attempted on a test ARF to check that the changes are safe. Then the following procedure should be used.



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- ◆ Copy the new parts of the populate script (shown in red) to a new .sql file.
- ◆ Run the new parts script against the Live ARF to implement the changes
- ◆ Discard or archive the new parts script

Archive Drive Table

For each archive drive associated with the ARF there is one row in the table. The Archive Drive table is not normally updated except that the status field is set to 'OFF_LINE' if the drive is not working or is assigned to another application.

The parameters for each archive drive are:

- ◆ **Archive_drive_id:** is the drive number known to the system
- ◆ **Archive_drive_type_name:** must match the archive drive type
- ◆ **Rewind_device_file:** /dev/<drivename>, must match the system set-up
- ◆ **Not_Rewind_device_file:** /dev/<drivename>
- ◆ **Robot_device_number:** device number of drive known to robot
- ◆ **Capability:** 'READ_WRITE', 'READ_ONLY' or 'WRITE_ONLY'
- ◆ **Status:** 'AVAILABLE', 'UNAVAILABLE', 'MAINTENANCE', 'FAULT' or 'UNKNOWN'
- ◆ **In_use:** 'N' or 'Y'
- ◆ **Last_maintenance_date:** may be reset
- ◆ **Maintenance_period:** value in seconds for maintenance check period intervals
- ◆ **User_comment:** text

Archive Drive Type Table

Only IBM_MAGSTAR_3590 is supported in Version 2 of the ARF software. This table should not be changed.

The parameters for each archive drive type are:

- ◆ **Archive_Drive_Type_Name:** the unique name given to the drive type
- ◆ **Timeout_On_Read:** the period allowed for drive type operation before the drive should be deemed to have failed in milliseconds
- ◆ **Write_Speed:** the speed at which the drive type should be written to in bytes per second
- ◆ **Read_Speed:** the speed at which the device type should be read from in bytes per second
- ◆ **Maintenance_period:** value in seconds for maintenance check period interval

Archive Medium Type Table

Describes the characteristics of NTP media.

These include the maximum number of I/O operations on a medium and the Maximum number of I/O Errors considered acceptable before the medium becomes a problem.

The parameters for each archive medium type are:

- ◆ **Archive_Medium_Type_Name:** the unique name given to the medium type
- ◆ **Type_Label:** a one letter code defining the medium type
- ◆ **Capacity:** the number of bytes which can be stored on the medium type
- ◆ **Maximum_IO_Operations:** the number of reads and writes before a tape of this type should be transcribed and discarded
- ◆ **Maximum_IO_Errors:** the number of errors after which a tape of this type should be deemed a problem tape.
- ◆ **Operational_Duration:** the number of days after which a tape of this type should be deemed to have reached the end of its practical working life.

Archive Type Table

For each archive type managed by the ARF there is one row in the Archive Type table. The parameters for each archive type are:

- ◆ **Archive_Type_Name:** 'OFF_LINE', 'ON_LINE' or 'NEAR_LINE'

ARF Instance Table

This table defines parameters for each instance of the ARF. As there is one table for each ARF, there is only one row in the table. Useful parameters for the operator are:

- ◆ **Arf_Name:** the name of the ARF, e.g. 'PDHSE'
- ◆ **Arf_Mode:** current mode of the ARF - 'OPERATIONAL', 'TEST' or 'MAINTENANCE'
- ◆ **Arf_Version_Name:** current version of the ARF
- ◆ **Files_Ingested:** number of files ingested since start (if database is cleared then this is not true)
- ◆ **Files_Archived:** number of files archived since start (if database is cleared then this is not true)
- ◆ **Files_Disseminated:** number of files disseminated since start (if database is cleared then this is not true)
- ◆ **Volume_Switch_Period:** notional orbit length in seconds
- ◆ **Status_Reporting_Period:** the time between status reports to be sent to the CMC in seconds
- ◆ **Migration_Check_Period:** the time period between migration checks in seconds
- ◆ **Deletion_Check_Period:** the time between deletion checks in seconds
- ◆ **Disk_Space_Check_Period:** the time between ingestion disk space checks in seconds
- ◆ **Max_Media_Eject_Delay:** maximum time a tape stays in a drive after files have been read from it
- ◆ **Transcription_Check_Period:** the time period between checks on tapes that may need transcribing
- ◆ **USF_Buffer_Max_File_Size:** files less than this size will be placed on the USF disk rather than the ingestion disks
- ◆ **USF_Buffer_Max_Duration:** maximum time a file stays on the USF disk
- ◆ **Raw_Tape_Max_Usage:** maximum times a raw tape can be retrieved for use before it is to be thrown away
- ◆ **Raw_Tape_Days_To_Reuse:** number of days after which a raw tape may be reused
- ◆ **flts_timeout:** number of seconds to timeout an flts transfer if it hasn't started
- ◆ **flts_retries:** number of retries allowed for an flts transfer
- ◆ **prts_timeout:** number of seconds to timeout an prts transfer if it hasn't started
- ◆ **prts_retries:** number of retries allowed for an prts transfer
- ◆ **smts_timeout:** number of seconds to timeout an smts transfer if it hasn't started
- ◆ **smts_retries:** number of retries allowed for an smts transfer
- ◆ **Raw_Tape_Handled_Flag:** if set to N raw tape functionality is disabled, Y and it is enabled
- ◆ **Config_Chain:** unique identifier for ARF, used in CMC reporting

The check periods are used by various ARF processes to check for conditions that require specific actions or the generation of reports.

The parameter 'Minimum_Writeable_Tapes' is used to prompt the Operator to load another batch of new tapes in good time.

ARF Interface Table

The ARF Interface Table describes the interfaces available for communication with the ARF.

The columns are:

- ◆ **Interface_Name:** the name by which the interface is referenced
- ◆ **Status:** the operational status of the interface, initially "UNKNOWN".

New interfaces are identified by adding a new interface name and initialising the status to unknown. The Operator should not modify or delete records in this table or add new ones unless the ARF system structure has to be changed.

ARF Printer Table

This table describes the printers available to the ARF. The parameters for each archive medium type are:

- ◆ **Printer_Logical_Name:** a logical name to identify the printer to the ARF
- ◆ **Status:** the current status of the printer
- ◆ **Printer_Model_Name:** the manufacturers name for the printer
- ◆ **Last_Maintenance_Date:** the date the printer was last maintained.
- ◆ **Maintenance_Period:** the period in days between routine maintenance actions
- ◆ **Label_Flag:** a single letter of value 'Y' or 'N' to indicate whether this printer can be used to print labels
- ◆ **Report_Flag:** a single letter of value 'Y' or 'N' to indicate whether this printer can be used to print reports

Deliverable Utility Table

The Deliverable Utility Table identifies the utilities that are available for distribution, including their location.

The columns are:

- ◆ **Deliverable_Utility_Name:** the name of the deliverable utility
- ◆ **Volume_Group_Name:** usually "rootvg"
- ◆ **Directory_Name:** all deliverable utilities are normally kept in "/pds_bin/arf/deliverable_utilities/current"
- ◆ **User_Comment:** free text to help identify the deliverable utility

The Operator should not modify or delete records in this table or add new ones unless the ARF system structure has to be changed.

Disseminate Drive Table

The Disseminate Drive Table stores details of dissemination drives.

The columns are:

- ◆ **Disseminate_Drive_Logical_Name:** the logical identity of the drive, e.g. "/dev/rmt0"
- ◆ **Disseminate_Drive_HMI_Name:** the logical identity of the drive used by the HMI, e.g. "DAT 1"
- ◆ **Disseminate_Drive_Type_Name:** the type of drive, which must match a type in the Dissemination Drive Type Table
- ◆ **DD_Operator_Device:** used for the CDROM to detect when it has been cut
- ◆ **In_Use:** specifies whether the drive is being used by an ARF task
- ◆ **Status:** the operational state of the drive, initially set to "UNKNOWN"
- ◆ **Last_Maintenance_Date:** the date the drive was last maintained, initially set to SYSDATE

The Operator should not modify or delete records in this table or add new ones unless new drives are fitted.

Disseminate Drive Type Table

The Disseminate Drive Type Table stores details of dissemination drive types.

The columns are:

- ◆ **Disseminate_Drive_Type_Name:** the type of drive, e.g. "EXABYTE"
- ◆ **Write_Speed:** the device type write speed in bytes.s⁻¹
- ◆ **Read_Speed:** the device type read speed in bytes.s⁻¹
- ◆ **Maintenance_Period:** the period between maintenance activities in seconds.

The Operator should not modify or delete records in this table or add new ones unless new types of drives are fitted.

Disseminate Medium Type Table

The Disseminate Medium Table stores details of dissemination media.

The columns are:

- ◆ **Disseminate_Medium_Type_Name:** the type of medium, e.g. "EXABYTE"
- ◆ **Capacity:** the maximum number of bytes which can be stored on this type of media
- ◆ **File_Format:** the format of the file storage mechanism

The Operator should not modify or delete records in this table or add new ones unless new types of dissemination media are utilised.

Event Message Table

This table provides the definitions to translate error numbers raised by the ARF software to error message text for insertion in reports, HMI windows, etc.

The parameters specified for this table are:

- ◆ **Event_Message_ID:** a unique number identifying the EventMessage
- ◆ **Event_Message_Text:** a free text field of up to 250 characters describing the event

Executable Utility Table

This table identifies utilities used for data compression or manipulation and their location.

The parameters specified for this table are:

- ◆ **Executable_UTILITY_Name:** the unique name of the utility
- ◆ **Volume_Group_Name:** the name of the associated volume group
- ◆ **Directory_Name:** the name of the directory path where the utility is to be found
- ◆ **Output_Ratio:** the scaling factor used by the utility (default 1.0)
- ◆ **File_Extension:** the type of file upon which the utility will operate
- ◆ **User_Comment:** free text to help the user identify the operation of the utility

Logical Volume Table

This table contains details of the logical volumes within the **nrtvg** and **offlinevg**. The useful parameters specified for each logical volume are:

- ◆ **Logical_Volume_Name**: the identity of the logical volume group
- ◆ **Volume_Group_Name**: the identity of the volume group
- ◆ **Mount_Point**: the mount point for the volume group
- ◆ **Volume_Size**: the size of the volume group
- ◆ **Space_Used**: space used by the ARF
- ◆ **Space_Reserved**: space reserved for use by the ARF
- ◆ **In_Use_For_Ingestion**: defines if ingestion is currently writing to this logical volume, Y or N

Media Maintenance Activity Table

This table defines all the activities that can be performed on archive media.

The parameters specified for each maintenance activity are:

- ◆ **Archive_Medium_Type_Name**: the medium type
- ◆ **Maintenance_Activity_Name**: the name of the activity
- ◆ **Periodicity**: the period between maintenance activities
- ◆ **User_Comment**: a free text field defining the action

Medium Drive Capability Table

This table defines the current medium drive capabilities. It is used when a media becomes obsolete, so that although old media can be read from, no new tapes are created of this type.

The parameters for the table are:

- ◆ **Archive_Medium_Type_Name**: the medium type
- ◆ **Archive_Drive_Type_Name**: the drive type associated with the medium
- ◆ **Capability**: 'READ_WRITE', 'READ_ONLY' or 'WRITE_ONLY'

Raw Tape Table

This table defines different types of raw media. The ARF does not perform any actions on these types of tapes, but provides the facility to record details about them in the same system as the rest of the tapes kept in the off-line archive.

The parameters for the table are:

- ◆ **Physical_Label:** the physical label name of the tape
- ◆ **Acquisition_Station:** the name of the station which acquired the data on the tape
- ◆ **Data_Rate:** the data rate at which the data was recorded
- ◆ **Acquisition_Start:** the acquisition start date & time
- ◆ **Acquisition_Stop:** the acquisition stop date & time
- ◆ **Orbit_Start:** the identity of the first orbit in which data was recorded
- ◆ **Orbit_End:** the identity of the last orbit in which data was recorded
- ◆ **Acquisition_Count:** number of acquisitions
- ◆ **Storage_Location:** the freetext location where the tape is stored
- ◆ **AF_backup_date:** the date at which the tape should be copied
- ◆ **Reuse_count:** the number of times the tape has been reused
- ◆ **Reuse_At_Date:** date at which tape can be reused

Robot Arm Table

This table holds resource details about the robot arm. The parameters for the table are:

- ◆ **Arm_Logical_Name:** the name by which the arm is known to the ARF
- ◆ **Robot_Model:** the model name of the robot
- ◆ **Status:** the current status of the robot arm
- ◆ **Robot_Version:** the version of this instance of the arm
- ◆ **Last_Maintenance_Date:** the date when the arm was last maintained
- ◆ **Maintenance_Period:** the time between maintenance activities

Robot Category Mapping Table

This table holds resource details about the robot category mapping in the robot. The parameters for the table are:

- ◆ **Arf_Category:** category name known to the ARF
- ◆ **Robot_Category:** category number known to the robot (only change values for ARCHIVE, BLANK and CIRCULATION if more than one ARF uses the same robot)
- ◆ **User_Comment:** free text field

Robot Controller Table

This table defines the robot device driver. More than one ARF may share a robot and hence its controller, so the details in this table relate to the ARF for which this is the definition table.

The parameters for the table are:

- ◆ **Controller_Logical_Name:** the logical name by which the controller is known to the ARF
- ◆ **Controller_Model:** the model name of the controller
- ◆ **Status:** the current status of the controller
- ◆ **Controller_Version:** the version of the controller
- ◆ **Number_of_Slots:** the total number of available slots
- ◆ **Number_of_Used_Slots:** the number of slots currently occupied by this ARF
- ◆ **Number_of_Free_Media:** the number of slots available for use by this ARF

Volume Group Table

This table holds details of the volume groups offlinevg, rootvg and nrtvg. Initially only the group size and Write flag (set to 'Y') are set.

The parameters for the table are:

- ◆ **Volume_Group_Name:** the unique name of the volume group
- ◆ **Group_Size:** the size in bytes of the volume group
- ◆ **Space_Used:** the number of bytes used in the volume group
- ◆ **Space_Reserved:** the size of all reserved space within the volume group
- ◆ **Write_Flag:** 'Y' or 'N' indicating whether or not the volume group may be written to (i.e. read only = N)

Application Reference Tables

The application reference tables must be set up on installation and define the distributed system and application environment.

Default Circulation Policy Table

The Default Circulation Policy table is used to determine if a specified file type is automatically distributed to the specified destination. Only the file types entered in the table are automatically distributed.

The fields in the record are:

- ◆ **Enumerated_File_Type_Name:** the file type to be automatically distributed
- ◆ **Destination_Name:** the destination for that file type and the foreign key to the Destination table

Destination Table

The Destination table defines permissible destinations for disseminated data. One record in the table must define the destination 'LOCAL'. New destinations may be added at any time.

Each record is made up of the following fields, and both fields must be given a unique, non-zero value:

- ◆ **Destination_Name:** the record key
- ◆ **Pds_Code:** the code used by the system to route disseminated data

Enumerated File Type Table

There is one record in this table for each instance of `Enumerated_file_type`. For each instance the Logical medium type name defines the logical medium which must never be changed and the remaining fields define the operational policy for the product. The values of the remaining fields may be altered by SQL statements in INI files, e.g.

```
UPDATE      Enumerated_file_type
           SET      duration_in_near_line = 3600*24*2
           WHERE    enumerated_file_type_name = 'ASA_APC_OP';
```

Columns that may be changed are:

- ◆ **Logical_Medium_Type_Name:** the logical medium type this type of file will be added to
- ◆ **Archive_Duration:** time to be spent in the archive before file can be deleted
- ◆ **Duration_in_near_line:** the period in seconds after which files of this type can be placed off-line
- ◆ **Duration_in_on_line_for_electronic:** the period in seconds after which electronically ingested files of this type are removed from the on-line buffer
- ◆ **Duration_in_on_line_for_media:** the period in seconds after which media ingested files of this type are removed from the on-line buffer
- ◆ **Retrieve_duration_in_near_line:** the period in seconds for which files are kept in the near-line buffer after being retrieved from off-line
- ◆ **Retrieve_duration_in_on_line:** the period in seconds for which files are kept in the on-line buffer after being retrieved from tape

Duration columns are mandatory and are all defined as integers in units of seconds. Other columns should be treated as fixed, though new enumerated file types could be added.

Logical Medium Table

There is one row in the table for each valid logical_medium_type and destination. The logical_medium_id must be unique. Records may be added to the table, **but no record should ever be deleted.**

The parameters in this table are:

- ◆ **Logical_Medium_ID:** the logical name by which the medium is known to the ARF
- ◆ **Logical_Medium_Type_Name:** the type of the logical medium
- ◆ **Destination_Name:** the default destination for this medium
- ◆ **In_Use_Count:** the number of media of this category currently in use

Logical Medium Type Table

This has just one column, Logical_Medium_Type_Name, and details the name of classes of product that can be grouped together on a single medium. Records may be added to the table, **but no record should ever be deleted.**

Operating System Table

This table identifies operating systems supported by dissemination.

The parameters in this table are:

- ◆ **Operating_System_Name:** the name of the operating system
- ◆ **Platform:** the name of the computer on which the operating system is installed
- ◆ **Version:** the version of the operating system,

Utility Delivery Policy Table

This table identifies appropriate utilities for a given operating system and logical file type.

The parameters in this table are:

- ◆ **Enumerated_File_Type_Name:** the name of the enumerated file type with which the utility can be used
- ◆ **Operating_System_Name:** the operating system on which the utility can be used
- ◆ **Deliverable_Utility_Name:** the name of the utility
- ◆ **User_Comment:** a free text field allowing the utility to be described

Utility Execution Policy Table

This table defines the relationships between logical_file_type, operating system and utility.

The parameters in this table are:

- ◆ **Enumerated_File_Type_Name:** the name of the enumerated file type with which the utility can be used
- ◆ **Operating_System_Name:** the operating system on which the utility can be used
- ◆ **Executable_Utility_Name:** the name of the utility
- ◆ **User_Comment:** a free text field allowing the utility to be described

Valid Media At Destination Table

This table identifies the media types that are to be used for dissemination or circulation to each destination.

The parameters in this table are:

- ◆ **Destination_Name:** the name of the destination facility
- ◆ **Archive_Medium_Type_Name:** the name of the archive medium type
- ◆ **User_Comment:** a free text field allowing information to be assigned against each medium/destination coupling

Operational Reference Tables

The operational reference tables define ARF working parameters and within defined ranges allow the ARF operating environment to be tuned. It is also possible to tune the environment to some degree by changing values in the following application and system tables:

- ◆ ARF Instance Table
- ◆ Archive Type Table
- ◆ Default Circulation Policy Table
- ◆ Enumerated File Type Table
- ◆ Valid Media At Destination Table

There is only one table which is only operational and has not been described with the preceding tables.

ARF Buffer Table

This table defines the existence of the pre-defined buffers and their names but the Operator can set the `Maximum_File_Duration`, which is the time that a file may remain in the buffer.

The parameters in this table are:

- ◆ **Buffer_Name**: the name by which the buffer is known to the ARF
- ◆ **Maximum_File_Duration**: the time after which the files will be removed from the buffer

Restore From Back-Up

In the circumstances that the ARF fails, and it is required to restore the working ARF to the last state it was in prior to failure, the Operator needs to restore the Oracle ARF application tables from the last backup, and apply the Oracle ReDO and UnDo files until the Oracle database is in a consistent state.

This has to be performed using the Oracle RDBMS facilities prior to starting the ARF.

Please refer to the Oracle Manuals for details of how to perform this operation.

Restore From Media

The ARF has been designed so that in the event that the ReDo and UnDo files and possibly the last system backup have been lost or damaged, the ARF can be restored from the last good backup by re-inserting all the tapes into the robot which have been recorded since the chosen backup.

In extreme conditions, the backup could be an empty ARF, and all tapes could be re-inserted.

The ARF restores the database from media whilst in Operational mode, so that current processing can continue whilst the restore operation is being progressed. It is therefore sensible that the Operator restores the latest media before the oldest.

It is the Operators responsibility to find out which tapes to re-insert, as the ARF database has lost all records of the operations after the backup to which it was restored. This information should be available from the INV facility.

For details of how to use the Restore From Media facility, please refer to the ARF User Manual Volume 3 - User Guide.



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Management Of Small On-Line Products

Products which are smaller than a preset limit are managed differently in the ARF to all other products. These are held separately in the Online Products Buffer.

The definition of the size of product below which the product is classified as a small product is set in the ARF_Instance table, and the column name is USF_Buffer_Max_File_Size. Ingested products whose size is less than USF_Buffer_Max_File_Size will be stored in the /online directory.

The buffer is automatically managed so that as it approaches 70% utilisation, all products over their predefined age are deleted from the buffer (provided that they have been archived). When these have been deleted the buffer should be less than 30% full. If not, then the products nearest to their lifespan are deleted until 30% utilisation is reached.

In order to fine tune the buffer performance, the duration of products in this buffer is defined in the ARF_Instance table, column name USF_Buffer_Max_Duration.



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Management Of Browse Products

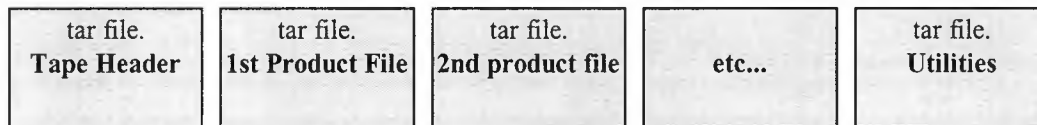
All browse products which are NRT disseminated electronically to the DF are compressed by the ARF before dissemination. The compression algorithm is based on free JPEG software from the Independent JPEG Group (IJG). The software is copyright © 1991-1996, Thomas G. Lane.

Browse products disseminated via media will be compressed if the executable_utility_name in the Utility Execution Policy table for that enumerated file type name contains "compress_product".

Browse products are stored on-line and archived uncompressed.

External Tape Format

The external tape format of the media used to disseminate data to external users is used by the Distribute & Disseminate and Archive & Retrieval processes when writing to media in response to Disseminate File sub-instructions.



The tape will consist of a number of tar archive files each terminated by an EOF marker. Thus to find a particular tar file, the user will simply have to skip past a number of EOF markers.

Note that the names of the product files in each archive may not be readable by some operating systems (e.g. MS-DOS) due to their length. Thus the utility which reads the contents of the tar archives must cope with this problem itself.

- ◆ The header tar archive contains files which describes the tape, describe the contents of the tape & provide a utility for reading the rest of the tape.
- ◆ The product tar archives contain the actual product files requested by the user.
- ◆ The utility tar archive contains any utilities to be delivered with the products.

These archive files are described in more detail below.

Tape Header Tar Archive - header.tar

The tape header tar archive contains the following information:

- ◆ Tape Label
- ◆ Directory File
- ◆ Reader Utility

The tape label identifies the tape with the same information as printed on the physical tape label. The contents of this file will be the tape label information as printed on the physical tape label.

Additionally there may be an (optional) utility which can be used to read the rest of the tape.

The directory file will contain the list of contents for the tape. This will list each file on the tape followed by “,M” where M is the tar file number which contains that file e.g.:

```

LABEL, 1
DIRECTORY, 1
reader_w.exe, 1
MIP_NL_0PVXXX19990210_133254_00006040A031_067_15598_0324.N1, 2
MIP_NL_0PVXXX19990110_133311_00006040A031_067_15598_0324.N1, 2
MIP_NL_0PVXXX19990210_133426_00006040A031_067_15598_0324.N1, 2
ASAR_NL_0PVXXX19990210_133254_00006040A031_067_15598_0324.N1, 3
ASAR_NL_0PVXXX19990210_133254_00006040A031_067_15598_0324.N1, 3
pc_unzip.exe, 4
display.exe, 4
    
```

Product Tar Archives - productM.tar (where M is 1,2,3...)

The product tar archives are used to group the delivered products into sensibly-sized collections of similar files as described by the directory file. e.g. all GOMOS in one archive, then MERIS in a second etc.

Utilities Tar Archives - utility.tar

The utilities tar archives groups all of the utilities which are to be delivered with the products into a single tar archive at the end of the tape.

External CD-ROM & Floppy Disk Format

The same format is used for CD-ROM and Floppy Disk media external disseminations. The .tar utility is not used for the medium, but the breakdown of the product is as follows.

The full filename is sectioned, and each section is used as part of the directory structure in which to store the individual files. An example is given below.

ASA_AP_BR_XXXXXXXXXXXXXXXXXX

is stored as

ASA\AP_BR\ASA_AP_BR_XXXXXXXXXXXXXXXXXX

In addition files are stored at the top level of the directory structure as follows:

- ◆ \dir: a list of the files stored in the directories
- ◆ \label: the information as contained on the printed label for the medium
- ◆ \ymtrans.tbl: a translation of shortened filenames and their corresponding full filenames for systems which cannot utilise the shortened name system.

Formatted Media

The tape media which are ingested via the 'Ingest Formatted Files' window will be in the same tape format as the media used to disseminate data to external users (see heading 'External tape Format').

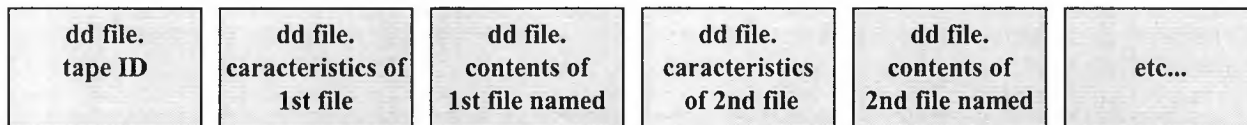
The CD-ROM and Floppy disk format used in ingestion will be the same as that used for media dissemination (see heading 'External CD-ROM & Floppy Disk Format').

Unformatted Media

Unformatted media which are ingested via the 'Ingest UnFormatted Files' window will consist of a single tar archive file. The unformatted files to be ingested will form the contents of the archive.

Internal Tape Format

The internal tape format of the media used to transfer data between PDS centres is used by the Archive and Retrieval process when writing to archive media either for internal storage or for circulation to other ARFs. The format will consist of a number of dd files each separated by an EOF marker. Thus to find a particular dd file, the ARF will have to skip past a number of EOF markers to get to the name file, check the name by reading the file and then (if the name is as expected) read the contents of the file from the next dd file.



The tape ID is stored as the first file on the tape. Subsequent dd files are in pairs with the first file of a pair containing the name and the size of the following file. Only one file is represented by each pair of dd files.

The dd file containing the characteristics of its following file have a size of 80 bytes. The first bytes (in general case 62 bytes) are the name of the product included in the following file, the 4 last bytes are the size of the stoked product coded in one long integer.

Shared Memory Configuration

All configuration of shared memory is performed automatically by CSF (common services) and Oracle (database). The following example shows a typical shared memory configuration for a running ARF. There may be more or less entries than shown. This should be taken as an example only as the contents will differ according to the applications running on the target machine. Those entries which are expected in the configuration are described below the listing. A similar listing to this can be obtained under AIX by entering:

```
ipcs -a
```

The listing should be similar to the following:

IPC status from /dev/mem as of Wed 18 Mar 16:20:18 1998

T	ID	KEY	MODE	OWNER	GROUP	CREATOR	CGROUP	CBYTES	QNUM	QBYTES	LSPID	LRPID	STIME	RTIME	CTIME
Message Queues:															
q	0	0x4107001c	-Rrw-rw----	root	printq	root	printq	0	0	65535	40894	12400	16:04:21	16:04:21	11:48:53
T	ID	KEY	MODE	OWNER	GROUP	CREATOR	CGROUP	NATTCH	SEGSZ	CPID	LPID	ATIME	DTIME	CTIME	
Shared Memory:															
m	0	0x0d05ea0c	--rw-rw-rw-	root	system	root	system	0	1440	23364	30366	10:40:38	9:43:58	12:02:24	
m	45057	0x000f4222	--rw-rw-rw-	root	system	root	system	21	432312	13888	59252	14:55:51	15:43:58	14:46:18	
m	1126402	0x092b458f	--rw-rw----	oracle2	dba	oracle2	dba	27	8962048	38044	35970	15:41:22	15:41:24	14:24:38	
m	696323	0x092b8135	--rw-rw----	oracle2	dba	oracle2	dba	6	8962048	31934	30508	12:31:09	12:33:34	12:22:39	
m	8466436	0x092b7ecc	--rw-rw----	oracle2	dba	oracle2	dba	6	8962048	48034	44646	10:28:40	10:29:25	20:28:55	
m	9670661	0x0ec4d3a2	--rw-rw----	oracle2	dba	oracle2	dba	6	8962048	51556	13914	10:48:10	11:01:19	8:42:20	
T	ID	KEY	MODE	OWNER	GROUP	CREATOR	CGROUP	NSEMS	OTIME	CTIME					
Semaphores:															
s	4096	0x4d06003e	--ra-ra----	root	system	root	system	1	16:18:34	11:48:20					
s	1	0x6205e9be	--ra-r--r--	root	system	root	system	1	11:48:12	11:48:12					
s	2	0x0105e951	--ra-----	root	system	root	system	1	10:35:13	11:50:30					
s	307203	0x000f4222	--ra-ra-ra-	root	system	root	system	1	14:55:51	14:46:18					
s	4	0x03141592	--ra-ra----	root	system	root	system	1	4:01:08	4:01:03					

The entries which are expected are those with the following KEY fields:

Shared Memory:

- 0x000f4222 - this represents the shared memory segment used by CSF
- various with owner oracle or oracle2 - this represents oracle shared memory

Semaphores:

- 0x000f4222 - this represents the semaphores used by CSF

If any of the CSF entries are missing or there are no oracle/oracle2 entries then there is a problem with the system and it is unlikely that the ARF will operate correctly.

Tuning of System Parameters

For details on how to tune system performance to gain best performance from the ATM interface, see Volume 2 - Installation Guide.

Configuration of the IBM robot

The robot hardware should be installed by IBM engineers and requires no specific configuration by the user if installed properly.

The ARF database must be configured after installation of the hardware and ARF software to ensure that the correct values have been entered for the following database items:

- The robot device name
- The number of free slots to be used by the arf.

The default database delivered with the ARF will operate an IBM robot using the device name `lmcp0` and assumes the cabinet contains 126 slots. This configuration is for a robot connected to a single ARF.

Before configuring the database, determine the following

- Is the robot to be used in a single ARF or dual ARF configuration.
- How many slots are available in the robot in total - including expansion cabinets
- Use `smit` to examine the robot drivers to determine which connection is a direct connection (using a serial link) and which connection is a network connection. These devices will probably be `/dev/lmcp0` and `/dev/lmcp1`.

Single ARF configuration

Note that these changes must be applied to both the operational and test databases. The changes can be actioned either by creating .INI files or by modifying the populate scripts.

1. The field `CONTROLLER_LOGICAL_NAME` in the table `ROBOT_CONTROLLER` must be set to one of the devices noted from the `smit` query earlier. For a single ARF, it is not important whether a serial or network connection is used. The serial connection is quicker but may not be connected on your machine. The network connection should always be available.
2. The field `NUMBER_OF_SLOTS` in the table `ROBOT_CONTROLLER` must be set such that the sum of the value in the test database and the value in the operational database equals the actual number of slots available in the robot. Thus if there are 200 slots in the robot, 180 might be allocated to the operational database and 20 to the test database.

Dual ARF configuration

Note that these changes must be applied to both the operational and test databases. The changes can be actioned either by creating .INI files or by modifying the populate scripts.

1. The field `CONTROLLER_LOGICAL_NAME` in the table `ROBOT_CONTROLLER` must be set to the network device noted from the `smit` query earlier. Note that, if required, the serial connection can be used on the machine to which the connection has been physically made. However at least one of the machines must be connected using the network device. Configuration is simpler if both use the network device.
2. The field `NUMBER_OF_SLOTS` in the table `ROBOT_CONTROLLER` must be set such that the sum of the test and operational values from both ARFs equals the number of slots available in the robot. Thus if there are 200 slots in the robot, 150 might be allocated to the high rate machine and 50 to the low rate machine. In



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the high rate machine 135 are allocated to the operational database and 15 to the test database. In the low rate machine 45 are allocated to the operational database and 5 to the test database.

IBM Robot Installation/configuration

For details on how to install and configure the robot see Volume 2 - Installation Guide.



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ERROR MESSAGES AND RECOVERY PROCEDURES

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Internal Identifier	Error Message	Who	Meaning	Required Operator Response
E_EV_MA_ARF_INIT_PROCESS_START_FAIL	"A child process has failed during"	1	Not defined	Report to NRSC with a full copy of the log.
E_EV_MA_ARF_INSTRUCTION_NACK	"A NACK has been generated in response to an ARF Instruction"	2	Information message only. It indicates that an ARF Instruction has been received but that the ARF Instruction failed during parsing and that a NACK has been generated in response. The event is logged prior to the delivery of the NACK to the CMC.	This is an information message only, and no operator response is required.
E_EV_AR_ALARM_INIT_ERR	"Alarm initialisation failure"	3	Not defined	Not defined
E_EV_DD_UNKNOWN_ALARM_TYPE	"Alarm with unknown type occurred"	4	An unexpected timer has expired within the D&D process. This event should never happen.	Report to NRSC.
E_EV_MA_ARF_INSTRUCTION_ACK	"An ACK has been generated in response to an ARF Instruction"	5	Information message only. An ARF Instruction has been received, parsed correctly and an ACK generated in response. The event is logged prior to the delivery of the ACK to the CMC.	This is an information message and no operator action is required.
E_EV_MA_UNSPECIFIED_MISHAP	"An unspecified problem was detected. Continuing."	6	An internal activity (to Manage Archive, of a type that could normally be assumed to succeed) has failed. The ARF will continue to operate, but some functionality may have been compromised. Examples of activities that could generate this problem are some database read and write functions that should never fail except where the database down. The log file will contain additional information detailing the location within the code at which the problem was detected.	Report the problem to NRSC, and forward a full copy of the log.



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Internal Identifier	Error Message	Who	Meaning	Required Operator Response
E_EV_MA_UNSPECIFIED_FATAL_SIEP_ERROR	"An unspecified severe problem was detected. Shutting down."	7	An internal activity (to the Manage Archive SIEP process, of a type that could normally be assumed to succeed) has failed. The nature of the fault is such that the functionality of the ARF is severely compromised. The ARF will initiate a self-shutdown in response to the fault. The log file will contain additional information detailing the location within the code at which the problem was detected.	Report the problem to NRSC, and forward a full copy of the log.
E_EV_MA_ARF_INSTRUCTION_PARSE_FAILURE	"ARF Instruction failed during parse checking"	8	Information message only. This message indicates that an ARF Instruction failed during parsing, or that the ARF Instruction header information contained invalid values. The log will include the line within the CMC instruction at which the problem was detected. This will be at the end of the header record in the event of the problem being with the ARF Instruction header.	This is an information message only, no operator response is required. However the CMC may be interested in the log record for this event because of the information it provides as to where in the ARF Instruction a problem was detected.
E_EV_DD_EXEC_PROC_BAD_PARAMS	"Bad parameters passed to dd execute process"	9	The D&D execute process was started with incorrect parameters. This should never happen.	Report to NRSC.
E_EV_AR_BMS_ERR	"BMS failure"	10	Not defined	Not defined
E_EV_AR_DRIVE_HEADER_OPEN_ERR	"Could not open medium header file on disk"	11	Failed to open a file for creating and adding a header to a file.	Not defined
E_EV_MA_CSF_SI_STATUS_NOT_MP	"CSscsFunctionStatus failed with CSerrno."	12	The process is not a main process.	Not defined
E_EV_MA_CSF_FLTS_PUT_SYNC_NOT_EXIST	"CSF PutSyncFile() : A named item does not exist, Cserno"	13	Not defined	Not defined
E_EV_MA_CSF_FLTS_PUT_SYNC_NO_ACCESS	"CSF PutSyncFile() : Access to Destination host denied, due to network or user/password combinations, Cserno"	14	Access to destination host denied, due to user or password or network combinations.	Not defined



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Internal Identifier	Error Message	Who	Meaning	Required Operator Response
E_EV_MA_CSF_FLTS_PUT_SYNC_NOT_INIT	"CSF PutSyncFile() : Common Services has not been initialised, Cserrno"	15	Common Services has not been initialised	Not defined
E_EV_MA_CSF_FLTS_PUT_SYNC_BAD_DEST	"CSF PutSyncFile() : Destination dir. has wrong permissions or does not exist, Cserrno"	16	Destination directory has wrong permissions or does not exist.	Not defined
E_EV_MA_CSF_FLTS_PUT_SYNC_TOOL_ERR	"CSF PutSyncFile() : Error interfacing with a tool such as FTP or rexec."	17	Error interfacing with a tool such as FTP or rexec.	Not defined
E_EV_MA_CSF_FLTS_PUT_SYNC_BAD_SIZE	"CSF PutSyncFile() : File (to be sent) name is too long, Cserrno"	18	Name of file to be send is too long. This implies that the name of the file given as part of an originating CMC generated ARF Instruction was in turn too long (since the name of the report file is generated from the name of the original ARF Instruction file name).	Report the problem to the CMC.
E_EV_MA_CSF_FLTS_PUT_SYNC_NO_SPACE	"CSF PutSyncFile() : Insufficient space on the remote destination disk for transfer, Cserrno"	19	Insufficient space on destination disk for transfer of file.	Not defined
E_EV_MA_CSF_FLTS_PUT_SYNC_NO_LINK	"CSF PutSyncFile() : Network error, due to local configuration, or the network itself, Cserrno"	20	Network error, due to local configuration, or the network itself.	Not defined
E_EV_MA_CSF_FLTS_PUT_SYNC_NOT_CONS	"CSF PutSyncFile() : Options are inconsistent, check NAMS mapping, Cserrno"	21	Options are inconsistent	Check NAMS mapping
E_EV_MA_CSF_FLTS_PUT_SYNC_BAD_SRC	"CSF PutSyncFile() : Source dir/file is invalid, check directory structure, Cserrno"	22	Source directory or file is invalid.	Check directory structure.
E_EV_MA_CSF_FLTS_PUT_SYNC_SYN_ERR	"CSF PutSyncFile() : Syntax error in call, due to possible NULL pointers or Strings that are too long, Cserrno"	23	Syntax error in call. Possibly due to NULL pointers or Strings that are too long.	Not defined



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Internal Identifier	Error Message	Who	Meaning	Required Operator Response
E_EV_MA_CSF_SEND_ACK_NOT_INIT	"CSF SendAcknowledge() : Common Services has not been initialised, Cserrno"	24	Common Services has not been initialised.	Not defined
E_EV_MA_CSF_SEND_ACK_NO_MSG	"CSF SendAcknowledge() : No unacknowledged instruction exists, Cserrno"	25	No unacknowledged instruction exists.	Not defined
E_EV_MA_CSF_SEND_ACK_NOT_MP	"CSF SendAcknowledge() : The process is not a main process, Cserrno"	26	The process is not a main process.	Not defined
E_EV_MA_CSF_SI_STATUS_NOT_CONS	"CSF SendSubInstructionStatus() : An Invalid status change has occurred, Cserrno"	27	An invalid status change has occurred from SendSubInstructionStatus.	Not defined
E_EV_MA_CSF_SI_STATUS_NOT_INIT	"CSF SendSubInstructionStatus() : Common Services has not been initialised, Cserrno"	28	Common Services has not been initialised. This indicates a problem with CSF.	Not defined
E_EV_MA_CSF_SI_STATUS_NOT_MP	"CSF SendSubInstructionStatus() : The process is not a main process, Cserrno"	29	The process is not a main process. This most likely indicates a problem with CSF (since the ARF software has been extensively tested).	Not defined
E_EV_AR_DATABASE_ERR	"Database failure"	30	Not defined	Not defined
E_EV_MA_DB_FAILED_RETRIEVE_CMD_REPORT	"Database Function failed retrieval of the next CMC Report."	31	Not defined	Not defined
E_EV_AR_DATABASE_LOGIN_ERR	"Database log-in failure"	32	Failed to log-on to the database.	Not defined
E_EV_DD_STARTUP_FAILED	"DD Start-up failed"	33	DD failed to start-up.	Report to NRSC
E_EV_AR_DRIVE_ERR	"Drive failure occurred"	34	There may be a drive error.	Check the drive is working.
E_EV_MA_DUPLICATE_SI_RECORDS	"Duplicate SI records read from database. Possible failure in deleting records after generating SI report."	35	Not defined	Not defined



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Internal Identifier	Error Message	Who	Meaning	Required Operator Response
E_EV_BMS_LISTEN_FAIL	"Error in BMS Channel Process - Failed CSF listen call"	36	Main server process for listening for incoming data and starting client processes failed, probably due to a data-transfer device or a system error. No products will be read from this channel until the problem is fixed.	Not defined
E_EV_BMS_SELECT_FAIL	"Error in BMS Channel Process - Failed CSF select call"	37	The call to the CSF select function returned an error code.	None - the process will loop around and try again.
E_EV_BMS_FORK_FAIL	"Error in BMS Channel Process - failed starting child to ingest file"	38	A fork() call failed so the process to ingest a file was not started. This particular file will not be received. The sender should time out and re-send the file later.	None - the protocol should cause the file to be re-sent.
E_EV_BMS_BAD_SOCKET	"Error in BMS Channel Process- Bad socket number to listen on"	39	A Channel server has been started but the socket on which it is trying to listen on is invalid. No products can be ingested on this channel until this problem is fixed.	Inform NRSC immediately.
E_EV_BMS_CHLD_UNLISTEN_PARENT	"Error in BMS child - Failed to close a listening connection"	40	Closing the listening connection to a parent process failed. There is no action which can be taken to fix this problem and it has no effect on the operation of the software. Each time a file arrives a process is fork()ed to perform the reading of the file. When the process is forked, the listen connection from the parent is closed. This error indicates that this close failed.	Unless this error is seen repeatedly, no action is required. If it is seen more than once over the period of a day then notify NRSC.
E_EV_BMS_CHLD_CLOSE_SOCKET	"Error in BMS child - Failed to close socket used for file transfer"	41	Failed to close the data connection at the end of a file transfer. This should have no effect on the operation of the ARF unless it is seen in conjunction with other errors.	If this error is seen in conjunction with other errors then report the problem to NRSC.
E_EV_BMS_CHLD_INGEST_NOTIFY	"Error in BMS child - Failed to notify Schedule Ingestion of file arrival (process not present?)"	42	Failed while trying to send an internal message from BMS to the Schedule ingestion process to indicate that a new file had arrived.	Notify NRSC immediately. The file which has been ingested will be in the database and on disk but no actions will ever be performed on them as BMS was unable to inform the ingest process of their arrival. If this problem persists then the disk will fill up.



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Internal Identifier	Error Message	Who	Meaning	Required Operator Response
E_EV_BM_ADD_REF	"Error in BMS library - Adding file ref to buffer."	43	BMS failed to update the database when adding a file reference to a buffer. The database may be down.	Not defined
E_EV_BM_ALLO_SPACE	"Error in BMS library - Allocating space on volume."	44	BMS failed to allocate space in a volume for file storage. The database may be down.	Not defined
E_EV_BM_ATM_ABORTED	"Error in BMS library - ATM Read aborted - could not write to disk, file."	45	BMS failed writing a block to disk which it had just read from the ATM. The disk could be corrupted.	Not defined
E_EV_BM_READ_FAILED	"Error in BMS library - ATM read failed, file."	46	BMS failed reading from the ATM.	Not defined
E_EV_BM_ATM_FAILED	"Error in BMS library - ATM timed out or failed before finished ingestion, file."	47	The number of bytes transmitted was less than the number of bytes expected so BMS waited until the time out period expired and then logged this error. The ATM could be down or the MPH of the product could be incorrect.	Not defined
E_EV_BM_BYTES_MISSING	"Error in BMS library - bytes missing at end of file."	48	A file read from the ATM was shorter than expected. The file may be corrupt or the ATM link is down.	Not defined
E_EV_BM_CLEAR_BUF	"Error in BMS library - Clearing buffer."	49	There was a problem when BMS attempted to delete the files from a buffer. The database may be down.	Not defined
E_EV_BM_TO_DISK	"Error in BMS library - Copying to disk, product."	50	BMS failed while trying to copy a file on disk. Either the source or destination disk is probably corrupt.	Not defined
E_EV_BM_TO_DD	"Error in BMS library - Copying to tape (dd), product."	51	BMS failed while trying to write to tape using dd.	Not defined
E_EV_BM_TO_TAR	"Error in BMS library - Copying to tape (tar), product."	52	BMS failed while trying to write to tape using tar.	Not defined
E_EV_BM_DEALLO_SPACE	"Error in BMS library - Deallocating space on volume."	53	BMS failed when de-allocating space on a volume. The database may be down.	Not defined
E_EV_BM_DEL_REF	"Error in BMS library - Deleting file ref from buffer."	54	BMS failed to update the database when removing a file reference from a buffer. The database may be down.	Not defined



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Internal Identifier	Error Message	Who	Meaning	Required Operator Response
E_EV_BMS_SIGEVENT_FAIL	"Error in BMS Library - Error reporting (AddSigEvent) failing"	55	Reporting a Significant Event to the ARF database failed.	Not defined
E_EV_BMS_ACCEPT_FAIL	"Error in BMS library - Failed CSF accept call!"	56	A call to the PRTS accept call failed in BMS.	Not defined
E_EV_BM_READ_MPH	"Error in BMS library - Failed reading MPH"	57	When BMS attempted to read the MPH from a file, it failed. The disk may be corrupt, or the file was corrupt.	Not defined
E_EV_BM_DEL_FAIL	"Error in BMS library - Failed to delete unwanted file."	58	A BMS call to remove() failed to remove the required file. The disk may be corrupted.	Not defined
E_EV_BM_FIND_MPH	"Error in BMS library - Failed to find an MPH"	59	BMS could not find an MPH in the file. The file may be corrupt.	Not defined
E_EV_BM_INGEST_FAILED	"Error in BMS library - Failed to ingest file."	60	A problem during ATM transfer caused BMS to fail reading a file. Additional information will be output with the message to indicate why the ingest failed.	Not defined
E_EV_BM_GET_USAGE	"Error in BMS library - Getting file usage for file."	61	BMS failed when trying to find out the usage of a file. The database is probably down.	Not defined
E_EV_BM_BYTES_EXTRA	"Error in BMS library - ingested file is too long."	62	The MPH for the product just transferred is corrupt and indicates that the file is shorter than it really is.	Not defined
E_EV_BM_INVALID_FILE_SIZE	"Error in BMS library - Invalid file size in MPH - text field held."	63	The size field in the MPH was corrupted.	Not defined
E_EV_BM_INVALID_COPY_NAME	"Error in BMS library - Invalid name for output product."	64	The name specified cannot be the name of a product	Not defined
E_EV_BM_INVALID_FILE_NAME	"Error in BMS library - Invalid product name (non-ascii)"	65	There were non-ascii characters in the file name	Not defined
E_EV_BM_MISSING_EOF_MARKER	"Error in BMS library - Missing end of file marker, file."	66	BMS did not detect an EOF marker in the data read from the ATM. The MPH could be corrupt so that the file is actually larger than expected.	Not defined
E_EV_BM_MOVE_REF	"Error in BMS library - Moving file ref to buffer."	67	BMS detected an error whilst moving a file reference between buffers. The database may be down.	Not defined



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Internal Identifier	Error Message	Who	Meaning	Required Operator Response
E_EV_BM_BLANK_FILE_NAME	"Error in BMS library - Only spaces in file name in MPH"	68	After removing leading and trailing spaces, there was nothing left of the filename in the MPH.	Not defined
E_EV_BM_OPEN_OUTPUT	"Error in BMS library - Open output file failed for."	69	BMS failed opening an output file.	Not defined
E_EV_BM_FROM_DISK	"Error in BMS library - Reading from disk, file:"	70	BMS failed while trying to read a file from disk. The file has probably been delete erroneously or there is a problem with the disk.	Not defined
E_EV_BM_FROM_DD	"Error in BMS library - Reading from tape using dd, file:"	71	BMS had a problem trying to read from tape using dd. The tape is probably corrupt.	Not defined
E_EV_BM_FROM_TAR	"Error in BMS library - Reading from tape using tar, file:"	72	BMS had a problem reading from tape using tar. The tape is probably corrupt.	Not defined
E_EV_BM_FROM_UTIL	"Error in BMS library - Reading from utility, file:"	73	BMS failed when executing a utility to generate a file. The utility may not be operating correctly or the disk may be corrupt.	Not defined
E_EV_BM_PRTS_READ	"Error in BMS library - Reading prts block:"	74	A call to read a block of data from the ATM failed. The ATM link may be down.	Not defined
E_EV_BM_TIDY_BUF	"Error in BMS library - Tidying buffer:"	75	There was a problem when BMS tried to tidy a buffer.	Not defined
E_EV_BM_VOLUME_NOT_FREED	"Error in BMS library - Volume not released from ingestion:"	76	BMS failed a database call to indicate that a volume is no longer being used to write a file which is being read from ATM. The disk is now locked from reading. The database may be down.	Not defined
E_EV_BM_MAIN_EXEC_FAIL	"Error in BMS Server Main - failed to exec Channel Process"	77	BMS called the exec() system call which subsequently returned an error code. No channel server has been created for the relevant channel and so no products can be ingested from it.	Not defined
E_EV_BM_MAIN_FORK_FAIL	"Error in BMS Server Main - failed to fork Channel Process"	78	BMS called the fork() system call which returned an error code. No channel server has been created for one of the channels so no products can be transferred over that channel.	Not defined



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Internal Identifier	Error Message	Who	Meaning	Required Operator Response
E_EV_BM_STARTUP_FAILED	"Error in BMS starting process"	79	A BMS process failed during its initialisation and so has terminated and logged this error.	Not defined
E_EV_ML_CREATE_SOCKET	"Failed to create socket"	80	Not defined	Not defined
E_EV_DD_EXEC_FAILURE	"Failed to exec process"	81	D&D failed to exec a sub-process after a fork() call. This means that either system resource limits prevented the execution of the new process or that the executable to be run could not be found.	Report to NRSC.
E_EV_DD_FORK_FAILURE	"Failed to fork process"	82	D&D failed to fork a child process. This means that some system resource limit has been reached.	Report to NRSC and system manager. System manager should investigate why system resources are insufficient.
E_EV_DD_ALARM_FAILURE	"Failed to initialise alarm"	83	D&D attempted to set a timer but the timer library returned an error indicating that timer could not be set.	Report to NRSC.
E_EV_AL_INIT_FAILED	"Failed to initialise the alarm library"	84	The alarm library (which is an internal component of the Envisat.ARF) has failed to initialise.	Not defined
E_EV_DD_STARTUP_EXE_PROC_FAILED	"Failed to start execute task process"	85	A D&D execute task process failed to initialise properly.	Report to NRSC.
E_EV_IN_FILE_EXISTS_ERR	"File already exists"	86	Inventory Update Files check to see if file already exists.	Not defined
E_EV_IN_FILE_ACCESS_ERR	"File could not be accessed"	87	Access error for files coming into the ARF from external sources (SMTS) and moving around within the ARF, can be accessed.	Not defined
E_EV_IN_FILE_RM_ERR	"File could not be removed"	88	The IUF are deleted after receipt of a successful update/remove message from the INV.	Not defined
E_EV_IN_FILE_RENAME_ERR	"File could not be renamed"	89	Renaming Inventory Update Files error. IUF within the ARF contain a file extension to identify their current state. The files that are sent to the INV should not have an extension and are therefore copies of the original.	Not defined



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Internal Identifier	Error Message	Who	Meaning	Required Operator Response
E_EV_MA_FAILED_TO_OPEN_INSTRUCTION_FILE	"File Open : Could not open the Instruction File"	90	Not defined	Not defined
E_EV_AR_FILE_READ_ERR	"File read error occurred"	91	Not defined	Not defined
E_EV_IN_FILE_STATE_ERR	"File state could not be changed"	92	IUF have three states, depending upon whether they have been sent to the INV and if a corrupt response has been sent back from the INV. The file state, indicated by the file extension, is changed when successfully sending the IUF to the INV and upon receiving the response from the INV. If the state cannot be changed this error message is logged.	Not defined
E_EV_AR_FILE_WRITE_ERR	"File write error occurred"	93	Not defined	Not defined
E_EV_MA_IBM_CSET_PROBLEM	"IBM Cset++ class has thrown an exception"	94	One of the classes used within the ARF, provided by IBM as part of their Cset++ library, has thrown an exception. This could be a minor or a serious problem. In any event some functionality (probably with report generation) has been compromised.	Report the problem, with a full copy of the log, to NRSC.
E_EV_BM_VOLUME_SWITCH	"Info from BMS library - Volume switch triggered"	95	BMS has switched from one ingest volume to another. Archiving and circulation will now occur on the files from the first volume.	For information only - no operator response required.
E_EV_IN_BM_MOVE_ERR	"Ingest Failed: BM Move"	96	Upon successful ingestion of electronically ingested products the file reference is moved from the ingestion to the ingested buffer.	Not defined
E_EV_IN_INV_SEND_ERR	"Ingest Failed: ML Send(INV)"	97	The IUF are sent to the INV. If the ML_Send function is unable to do this an error is raised.	Not defined
E_EV_IN_TASK_ERR	"Ingest Failed: new task failed"	98	For each product that arrives at Ingest a task is created. If a task is not created this error is raised.	Not defined
E_EV_IN_TEST_IN_OP_ERR	"Ingest Failed: test file rxd in op mode"	99	If the ARF is in OPERATIONAL mode and the file is in TEST MODE then the file will fail to be ingested.	Not defined
E_EV_IN_FILE_IN_TEST_MODE	"INGEST: Arf in operational mode, file in test mode."	100	If the ARF is in OPERATIONAL mode and the file is in TEST MODE then the file will fail to be ingested.	Not defined



Internal Identifier	Error Message	Who	Meaning	Required Operator Response
E_EV_IN_FILE_IN_OP_MODE	"INGEST: Arf in test mode, file in operational mode."	101	If the ARF is in TEST mode and the file is in OPERATIONAL mode the file will fail to be ingested but not be deleted from the buffer. The next time the ARF is started in OPERATIONAL mode the file will be ingested.	Not defined
E_EV_IN_CORRUPT_INV_FILE	"INGEST: Corrupt Inventory Update File."	102	Schedule Ingestion Process creates the IUF. If an IUF is corrupted whilst being created then the file is deleted.	Not defined
E_EV_IN_FILE_FAILED_INTEGRITY	"INGEST: File failed integrity check."	103	As part of the Schedule Ingestion Process each product MPH undergoes integrity checks.	Not defined
E_EV_IN_INV_FILE_NOT_CREATED	"INGEST: Unable to create Inventory Update File."	104	The Schedule Ingestion Process creates the IUF.	Not defined
E_EV_IN_UNKNOWN_MESSAGE_ERR	"Ingest: unknown message type"	105	IN Schedule Ingestion Process and Manage Inventory Interface both wait for incoming messages of a certain type. Unknown messages will fail.	Not defined
E_EV_MA_INTERNAL_BAG_CHECK_FAILED	"integrity check on internal bag failed."	106	Not defined	Not defined
E_EV_MI_ARF_ASSERT_FAILED	"Internal assert check failed"	107	An internal assert check has failed. This indicates either a possible logic problem.	None. This error can only be generated when working in the Envisat ARF development environment. It cannot be generated in the deliverable system.
E_EV_AR_DRIVE_HEADER_ERR	"Invalid header on medium"	108	Not defined	Not defined



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Internal Identifier	Error Message	Who	Meaning	Required Operator Response
E_EV_MA_TOO_MANY_FILES_TO_CIRCULATE	"List of files to circulate is too long. Some files will not be circulated"	109	An internal limit on the number of files that may be circulated in one go has been reached. Files up to that limit will still be circulated, but at least one file will not be circulated.	If the error derived from circulation by policy then the missing files will be circulated automatically when the ARF is next started up. Therefore a shutdown and restart of the ARF will remedy the problem. This does not need to be done immediately.
E_EV_MA_LOOKUP_DISSEMINATE_PARENT_FAILED	"Lookup for Disseminated File Parent failed."	110	Not defined	If ever the error derived from a CMC delivered ARF instruction then the CMC will be informed which files failed to be circulated, and no operator intervention is therefore required.
E_EV_MA_SIEP_RESPOND_EVENT_UNKNOWN_MSG	"MA_RespondToNextEvent() has received an unknown message type."	111	Not defined	Not defined
E_EV_MA_SIEP_RESPOND_SHUTDOWN_UNKNOWN_MSG	"MA_RespondToShutdownEvent() has received an unknown message type."	112	Not defined	Not defined
E_EV_AR_MEDIUM_ERR	"Medium failure occurred"	113	Not defined	Not defined
E_EV_AR_UNKNOWN_MESSAGE_TYPE_ERR	"Message received unknown"	114	Not defined	Not defined
E_EV_AR_MESSAGE_SENDING_ERR	"Message sending failure"	115	Not defined	Not defined
E_EV_AR_SOCKET_CREATION_ERR	"Message socket creation failure"	116	Not defined	Not defined
E_EV_IN_MODE_ERR	"MODE error:"	117	Used when IN Manage Inventory Interface failed to start/shutdown database, send files via FLTS and unable to the NAMS addresses.	Not defined
E_EV_IN_MPH_ATTRIB_FORMAT_ERR	"MPH format/attributes error:"	118	IN Schedule Ingestion Process checks the products MPH. If the MPH records are not in the correct format then the product fails to Ingestion.	Not defined
E_EV_MA_MISSING_SI_REPORT_RECIPIENT	"No recipient for SI report"	119	Not defined	Not defined



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Internal Identifier	Error Message	Who	Meaning	Required Operator Response
E_EV_IN_PATH_ERR	"Pathname incorrect"	120	Used to highlight message failures and CSsmts failure.	Not defined
E_EV_IN_PHY_FILE_TABLE_UNPOP	"physical_file_table not populated"	121	IN Schedule Ingestion checks the MPH of each product. If the product MPH format is correct several items from the MPH are added to the Physical File table.	Not defined
E_EV_AR_PROCESS_SHUTDOWN_OK	"Process shut down successfully"	122	The Archive and Retrieval process has shutdown successfully. This event is logged for information only.	No operator response required.
E_EV_AR_PROCESS_STARTED_OK	"Process started successfully"	123	The Archive and Retrieval process has started successfully.	No operator response required.
E_EV_DD_PRTS_CLOSE_RAW_FAILED	"PRTS CloseRaw failed"	124	A D&D process received a failure error code from a call to CSsptsCloseRaw(). This would tend to indicate a disk failure at some point during the transfer as the process would not have gone this far if the file did not exist.	Inform system administrator and NRSC.
E_EV_DD_UNKNOWN_DESTINATION	"PRTS destination unknown"	125	A PRTS destination could not be connected to.	Check NAMS.
E_EV_DD_UNKNOWN_HANDSHAKE	"PRTS handshake value unknown"	126	At the end of an electronic dissemination, the destination facility must return a value to D&D as a handshake to indicate that the file has been transferred successfully. This error indicates that the value of the handshake response was not one of the valid values.	Report to NRSC.
E_EV_DD_PRTS_OPEN_RAW_FAILED	"PRTS OpenRaw failed"	127	A D&D process received a failure error code from a call to CSsptsOpenRaw(). This would tend to indicate a disk failure but may indicate a software error.	Inform system administrator and NRSC.
E_EV_DD_PRTS_READ_FAILED	"PRTS Read failed"	128	A D&D process received a failure error code from a call to CSsptsRead() while trying to read the PRTS send status from the destination. This would tend to indicate that the link to the destination was broken at some point near the end of the transfer.	Inform system administrator.



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Internal Identifier	Error Message	Who	Meaning	Required Operator Response
E_EV_DD_PRTS_WRITE_FAILED	"PRTS Write failed"	129	A D&D process received a failure error code from a call to CSprtsWrite() while trying to write data to a PRTS connection which is being used to transfer a product file. This error would tend to indicate a failure in the link to the remote facility.	Inform system administrator.
E_EV_DD_PRTS_CLOSE_FAILED	"PRTSClose failed"	130	A D&D process received a failure error code from a call to CSprtsClose().	Report to NRSC.
E_EV_DD_PRTS_CONNECT_FAILED	"PRTSConnect failed"	131	A D&D process received a failure error code from a call to CSprtsConnect() while trying to connect to another facility in order to perform a prts transfer. This indicates that the NAMS address D&D was trying to connect to was incorrect. This could be due to the NAMS tables being incorrect, the CMC instruction being incorrect or a software error.	Check NAMS tables and ensure CMC instructions are sending the correct NAMS address for the delivery.
E_EV_DD_PRTS_READ_RAW_FAILED	"PRTSReadRaw failed"	132	A D&D process received a failure error code from a call to CSprtsReadRaw() while trying to read the data from a file in order to transfer the file via a prts link. This would tend to indicate a disk failure but may also indicate a software error.	Inform system administrator and NRSC.
E_EV_MA_UNEXPECTED_SI_REPORT	"Received unexpected SI report"	133	Not defined	Not defined
E_EV_AR_ROBOT_INIT_ERR	"Robot initialisation error"	134	Not defined	Not defined
E_EV_AR_UNKNOWN_SENDING_PROCESS_ERR	"Sending process unknown"	135	Not defined	Not defined
E_EV_MA_EXPECTED_TSR_RECEIVED_UNKNOWN_MSG	"SIEP Circulation by Policy object expected a TSR message from AR, Unknown message received."	136	Not defined	Not defined
E_EV_MA_EXPECTED_VOLUME_SWITCH_RECEIVED_UNKNOWN_MSG	"SIEP Circulation by Policy object expected a Volume Switch message, Unknown message received."	137	Not defined	Not defined



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Internal Identifier	Error Message	Who	Meaning	Required Operator Response
E_EV_MA_RECEIVED_MSG_NO_MSG_EXPECTED	"SIEP Circulation by Policy object received an unexpected message when complete."	138	Not defined	Not defined
E_EV_MA_RECEIVED_UNKNOWN_MSG	"SIEP Circulation by Policy object received an unknown message."	139	Not defined	Not defined
E_EV_MA_CIRC_ISI_RECEIVED_MSG_NO_MSG_EXPECTED	"SIEP Circulation (SI object received an unexpected message when complete."	140	Not defined	Not defined
E_EV_MA_CIRC_ISI_RECEIVED_UNKNOWN_MSG	"SIEP Circulation (SI object received an unknown message."	141	Not defined	Not defined
E_EV_MA_SIEP_STARTING_SHUTDOWN	"SIEP is commencing shutdown"	142	The SIEP (Sub Instruction Executor Process) is commencing a shutdown. Specifically it means that it has been told to shutdown.	This message is for information only. No operator response is therefore required.
E_EV_MA_SIEP_BAD_SI_LOST	"SIEP sent a sub instruction that was bad and could not be processed. SI has been lost."	143	Not defined	Not defined
E_EV_MA_SIEP_INIT_PROCESS_START_FAIL	"SIEP Startup : An ARF component has failed during"	144	Not defined	Not defined
E_EV_MA_SIEP_MSG_UNKNOWN_SOURCE_RECIEVED	"SIEP Startup received a startup okay message from an unexpected source."	145	Not defined	Not defined
E_EV_MA_SIEP_MSG_TYPE_UNKNOWN_RECIEVED	"SIEP Startup received an unexpected message."	146	Not defined	Not defined
E_EV_MA_UNEXPECTED_SI_REPORT_STATUS	"SIEP Startup received SI report with an unexpected status."	147	Not defined	Not defined
E_EV_MA_BAD_SIG_EVENT_TYPE	"Significant event retrieved that has an unknown type."	148	Not defined	Not defined
E_EV_IN_STARTUP_ERROR	"Startup Error"	149	Not defined	Not defined
E_EV_IN_STR_FORMAT_ERR	"String formatting failed"	150	Not defined	Not defined



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Internal Identifier	Error Message	Who	Meaning	Required Operator Response
E_EV_MA_DELIVER_RESOURCE_NOTINIT	"This class must be initialised before use."	151	Not defined	Not defined
E_EV_DD_BAD_MESSAGE	"Unknown message received by DD"	152	A message was received by a D&D process from another ARF process but the message was not recognised. This indicates a software error.	Inform NRSC.
E_EV_MA_UNKNOWN_SI	"Unknown or unrecognised sub instruction."	153	Not defined	Not defined
E_EV_MA_DELIVER_ALL_MESSAGES_FILE_WRITE	"Write File for FLTS : Failed to write all of the si_report to file, the number of bytes actually written ."	154	Not defined	Not defined
E_EV_MA_DELIVER_ALL_MESSAGES_FILE_CLOSE	"Write File for FLTS : File could not be closed."	155	Not defined	Not defined
E_EV_MA_DELIVER_ALL_MESSAGES_FILE_OPEN	"Write File for FLTS : File could not be opened."	156	Not defined	Not defined



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ERROR IDENTITY CODES

The error identity codes are constructed as a 9 digit number encoded as follows:

EDDCCBAAA

Where

AAA = 000 : Normal
001 : E_SI_ABORTED
002 : E_SI_REPORT_AT_STARTUP
003 : E_SI_TIMEOUT
004 : E_SI_STOPPED
005 : E_SI_ABORTED_SHUTDOWN
006 : E_SI_REJECTED
B = 1 : E_SUB_INSTRUCTION
CC = 01 : ARF
DD = 01 : Products
02 : Orders
03 : Networks
04 : Media
05 : Software
06 : Auxiliary Data
07 : Users
08 : Mission
09 : Station
10 : Centre
11 : Schedule
12 : Resource
E = 3 : Error
4 : Warning
5 : Notice
6 : Information



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The following codes are used when B=3

AAA = 000 : Normal
001 : E_DD_SI_ABORTED
002 : E_DD_FILE_NOT_RECEIVED_FROM_ARCHIVE
003 : E_DD_FORMATTING_FAILURE
004 : E_DD_MEDIA_WRITING_FAILURE
005 : E_DD_FILE_NOT_ONLINE_FOR_NRT_DISSEM
006 : E_DD_UNKNOWN_FAIL_REASON
007 : E_DD_NO_MATCHING_FILES
B = 3 : E_ARF_DISSEMINATE
CC = 01 : ARF
DD = 01 : Products
E = 4 : Warning

When B = 4 : E_CIRCULATE

The following codes are used

AAA= 001 : E_CIRC_MISSING_FILE

