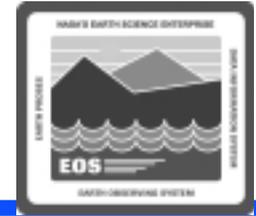


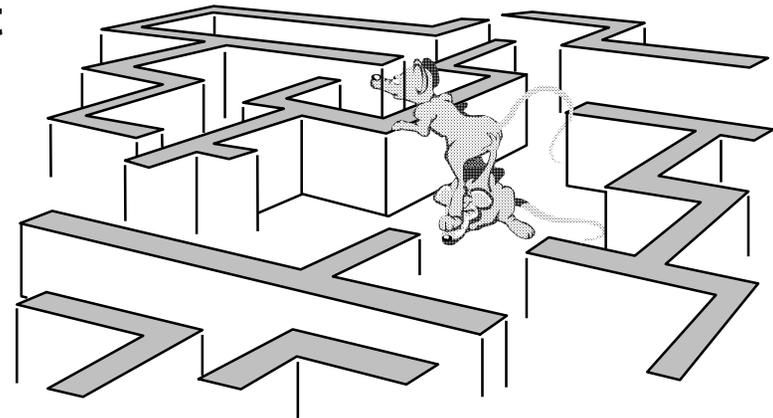
INGEST

ECS Release 5B Training

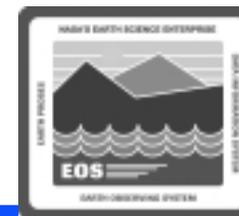
Overview of Lesson



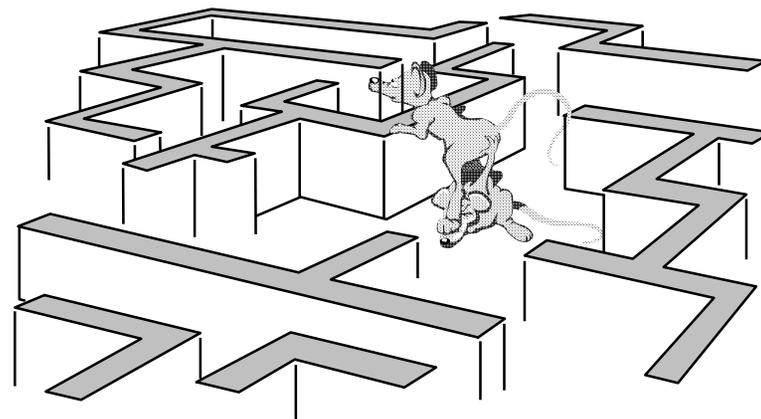
- Introduction
- Ingest Topics
 - Ingest Concepts
 - Launching the ECS Ingest and Storage Management Control GUIs
 - Monitoring Ingest Status
 - Cleaning Directories
 - Performing Hard Media Ingest



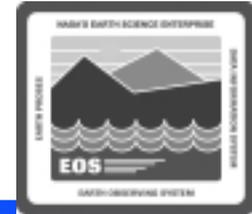
Overview of Lesson (Cont.)



- **Ingest Topics (Cont.)**
 - Scanning Documents
 - Modifying Ingest Tunable Parameters and Performing File Transfers
 - Troubleshooting Ingest Problems
- **Practical Exercise**

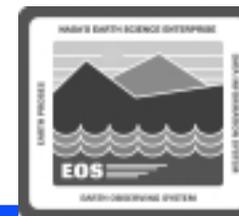


Objectives



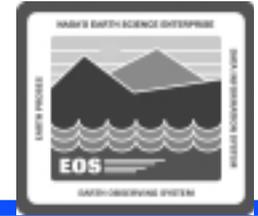
- **OVERALL:**
 - Develop proficiency in the procedures that apply to ingest operations
- **SPECIFIC:**
 - Describe the ingest function, including a general statement of the ingest responsibility in ECS and an overview of the ingest process
 - Perform the steps involved in...
 - » launching the ECS Ingest GUI
 - » launching the Storage Management Control GUI
 - » monitoring/controlling ingest requests
 - » viewing the Ingest History Log
 - » verifying the archiving of ingested data
 - » cleaning the polling directories

Objectives (Cont.)



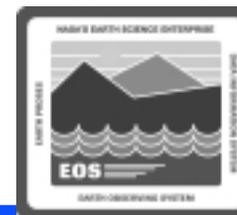
- **SPECIFIC (Cont.):**
 - **Perform the steps involved in...**
 - » performing hard media ingest from 8mm or D3 tape
 - » scanning documents and gaining access to scanned documents
 - » modifying external data provider information
 - » modifying Ingest Subsystem parameters using the Ingest GUI Operator Tools: Modify System Parameters screen
 - » transferring files using the Ingest GUI File Transfer screen
 - » modifying Ingest Subsystem parameters in configuration files
 - » modifying Ingest Subsystem parameters using isql
 - » troubleshooting and recovering from ingest problems

Objectives (Cont.)



- **STANDARDS:**
 - Lesson content (procedures in the lesson)
 - Mission Operation Procedures for the ECS Project (611-CD-510-001)

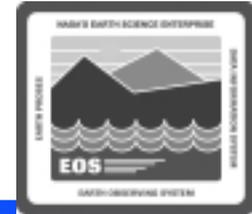
Ingest Concepts



- **ECS Context**

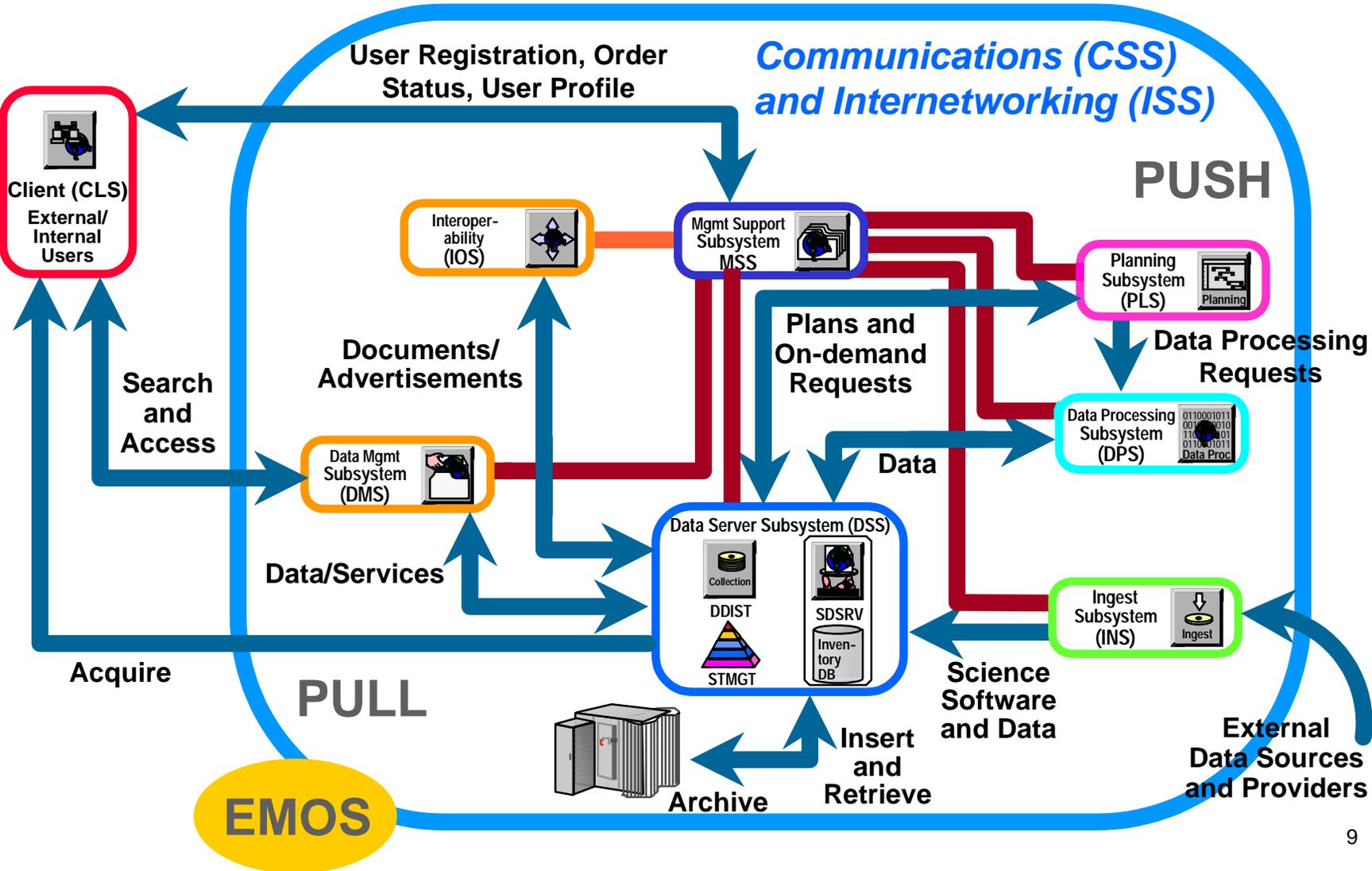
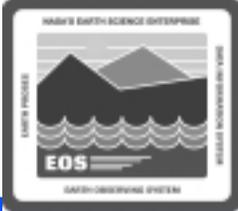
- **Ingest for ECS is accomplished at the Distributed Active Archive Centers (DAACs)**
- **People involved in Ingest activities are Ingest/Distribution Technicians**
- **Ingest Subsystem (INS) is point of entry to ECS for data from external data providers**
- **Data Server Subsystem (DSS) manages access to the data repositories, where ingested data are stored**

Ingest Concepts (Cont.)

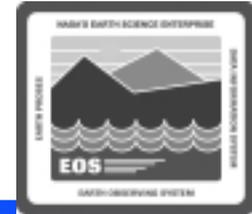


- **ECS Context (Cont.)**
 - **Ingest transfers data into ECS, performs preprocessing, and forwards the data to DSS for archiving**
 - **STMGT CSCI in DSS stores, manages, and retrieves data files**
 - » **Provides interfaces and peripheral devices (e.g., tape drives)**
 - » **Provides for the copying of files into the archive for permanent storage**
 - **SDSRV CSCI in DSS manages and provides user access to collections of Earth Science data**
 - **Checks/verifies metadata**
 - **Issues requests to STMGT to perform storage services, such as insertion of data into the archive**

ECS Context Diagram

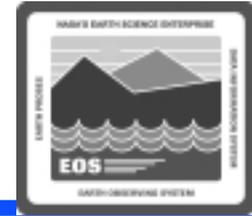


Ingest Concepts (Cont.)



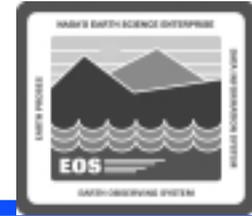
- **Ingest Subsystem: INGST CSCI**
 - **Automated Network Ingest Interface (EclnAuto)**
 - **Automated Polling Ingest Client Interface (EclnPolling)**
 - **Ingest Request Manager (EclnReqMgr)**
 - **Ingest Granule Server (EclnGran)**
 - **Ingest E-Mail Parser (EclnEmailGWServer)**
 - **ECS Ingest GUI (EclnGUI)**
 - **Sybase Structured Query Language (SQL) Server**

Ingest Concepts (Cont.)



- **INGST (Cont.)**
 - **Start-up script used by Ingest personnel (/usr/ecs/MODE/CUSTOM/utilities directory on the Operations Workstation)**
 - » **EclnGUIStart**

Ingest Concepts (Cont.)

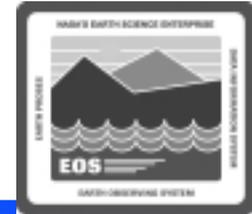


- **INGST (Cont.)**

- **Start-up scripts called by other applications (not normally invoked directly by Ingest personnel)**

- » **EclnAutoStart**
 - » **EclnGranStart**
 - » **EclnIngestAppStart**
 - » **EclnInitPasswdStart**
 - » **EclnPollingStart**
 - » **EclnReqMgrStart**
 - » **EclnStart**
 - » **EclnEmailGWServerStart**

Ingest Concepts (Cont.)

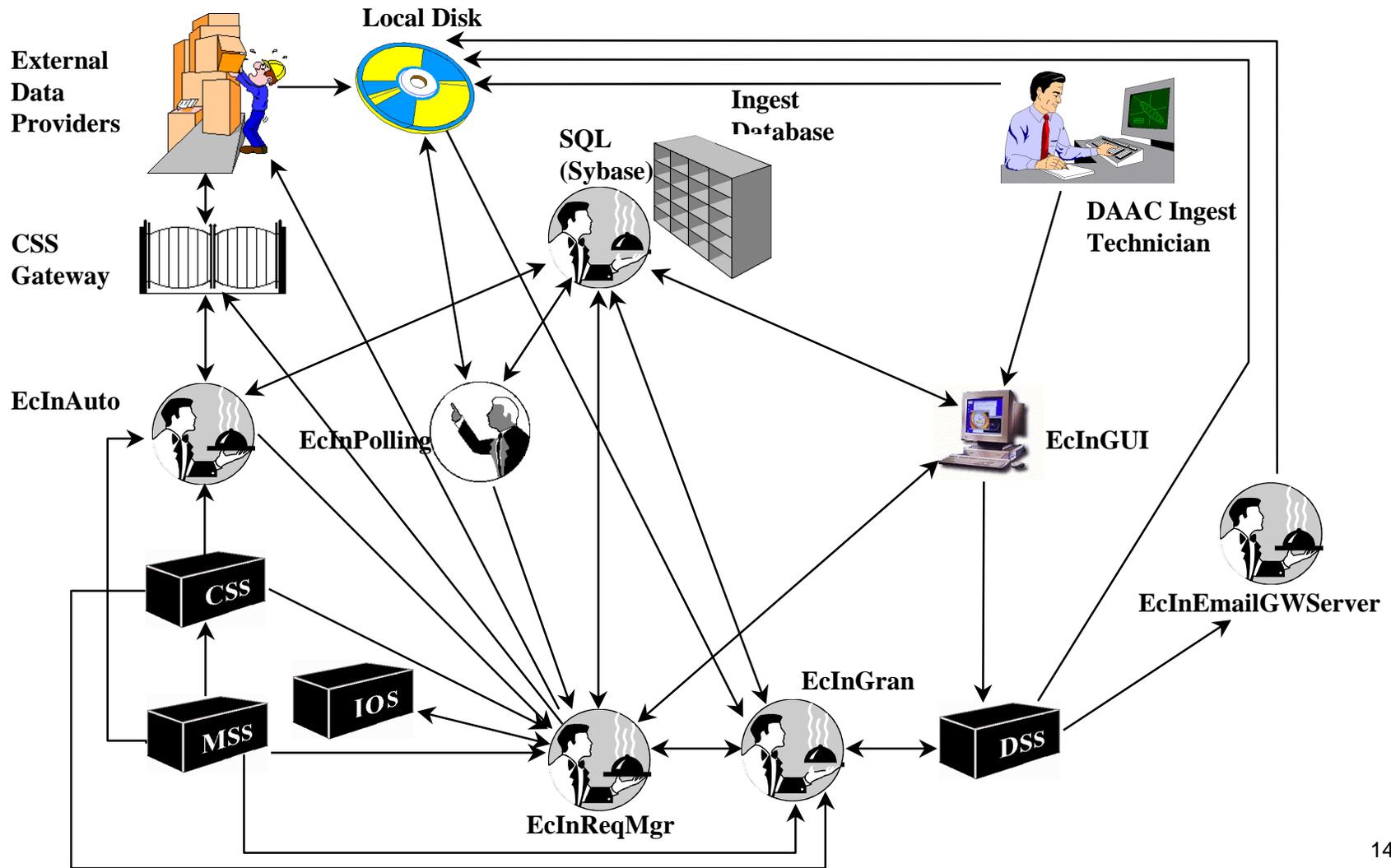
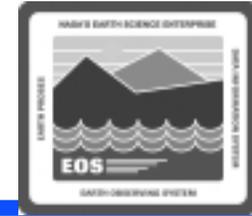


- **INGST (Cont.)**

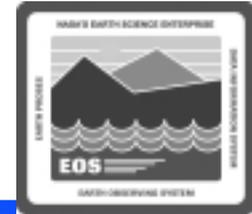
- **Other scripts**

- » **EclnEDOSCleanupMain**
 - » **EclnPollClean**
 - » **EclnCopyAM1ANC**
 - » **EclnDbBuild**
 - » **EclnDbDrop**
 - » **EclnDbDump**
 - » **EclnDbDumpTrans**
 - » **EclnDbLoad**
 - » **EclnDbLoadTrans**
 - » **EclnDbPatch**
 - » **EclnGWClientDrvStart**

Ingest Subsystem Architecture and Interfaces

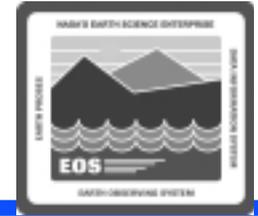


Ingest Concepts (Cont.)



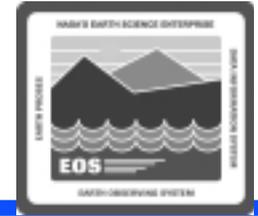
- **Data Server Subsystem: Storage Management (STMGT) CSCI**
 - **Archive Server (EcDsStArchiveServer)**
 - **Staging Servers**
 - » **Staging Monitor Server (EcDsStStagingMonitorServer)**
 - » **Staging Disk Server (EcDsStStagingDiskServer)**
 - **Resource Managers**
 - » **8mm Server (EcDsSt8MMServer)**
 - » **D3 Server (EcDsStD3Server)**
 - » **Ingest FTP Server (EcDsStIngestFtpServer)**
 - » **FTP Distribution Server (EcDsStFtpDisServer)**
 - » **Print Server (EcDsStPrintServer)**

Ingest Concepts (Cont.)



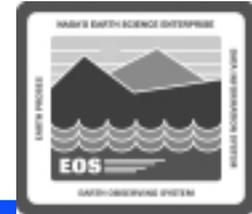
- **STMGT (Cont.)**
 - **Pull Monitor Server (EcDsStPullMonitorServer)**
 - **Storage Management Control GUI (EcDsStmgtGui)**
 - **Sybase SQL Server**
 - **Archival Management and Storage System (AMASS)**

Ingest Concepts (Cont.)



- **STMGT (Cont.)**
 - **Start-up script used by Ingest personnel (/usr/ecs/MODE/CUSTOM/utilities directory on the Distribution Server host)**
 - » **EcDsStmgtGuiStart**

Ingest Concepts (Cont.)

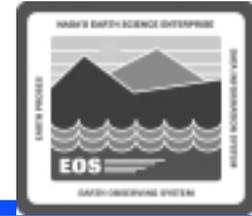


- **STMGT (Cont.)**

- **Start-up scripts called by other applications (not normally invoked directly by Ingest personnel)**

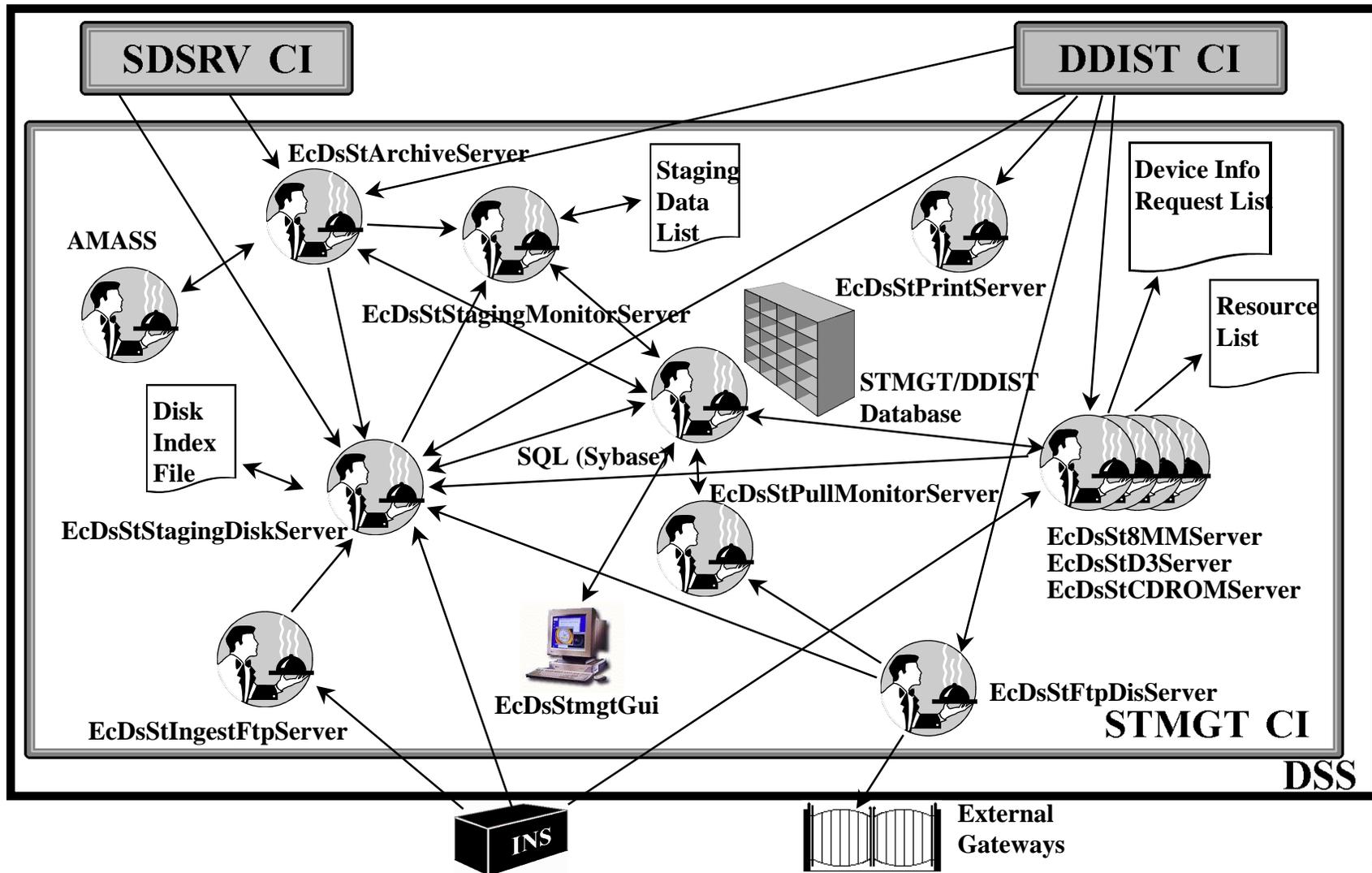
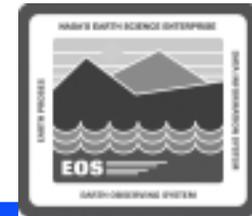
- » **EcDsStIngestFtpServerStart**
 - » **EcDsStStagingDiskServerStart**
 - » **EcDsStStart**
 - » **EcDsStStorageMgmtAppStart**
 - » **EcEcsAppStart**
 - » **EcDsStArchiveServerStart**
 - » **EcDsStFtpDisServerStart**
 - » **EcDsStPullMonitorServerStart**
 - » **EcDsStStagingMonitorServerStart**
 - » **EcDsSt8MMServerStart**
 - » **EcDsStD3ServerStart**
 - » **EcDsStPrintServerStart**

Ingest Concepts (Cont.)

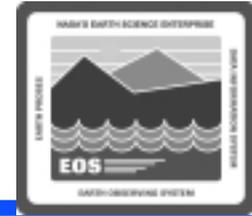


- **STMGT (Cont.)**
 - **Other scripts**
 - » **EcDsCheckArchive**
 - » **EcDsStConfigVolGrps**
 - » **EcDsStConfigVolGrps**
 - » **EcDsStDbBuild**
 - » **EcDsStDbDrop**
 - » **EcDsStDbDump**
 - » **EcDsStDbDumpTrans**
 - » **EcDsStDbLoad**
 - » **EcDsStDbLoadTrans**
 - » **EcDsStDbPatch**
 - » **EcDsStFilesPerTapeUtility**
 - » **EcDsStVolGrpCreateMain.pl**

Data Server Subsystem: STMGT Architecture and Interfaces

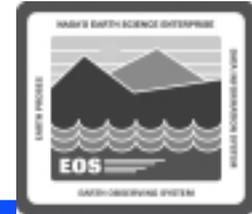


Ingest Concepts (Cont.)



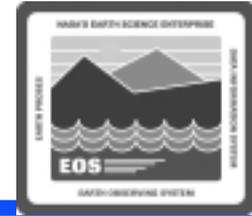
- **Data Server Subsystem: Science Data Server (SDSRV) CSCI**
 - **Science Data Server (EcDsScienceDataServer)**
 - **Hierarchical Data Format (HDF) EOS Server (EcDsHdfEosServer)**
 - **Science Data Server GUI (EcDsSdSrvGui)**
 - **Sybase Spatial Query Server (SQS)**
 - **Sybase SQL Server**

Ingest Concepts (Cont.)



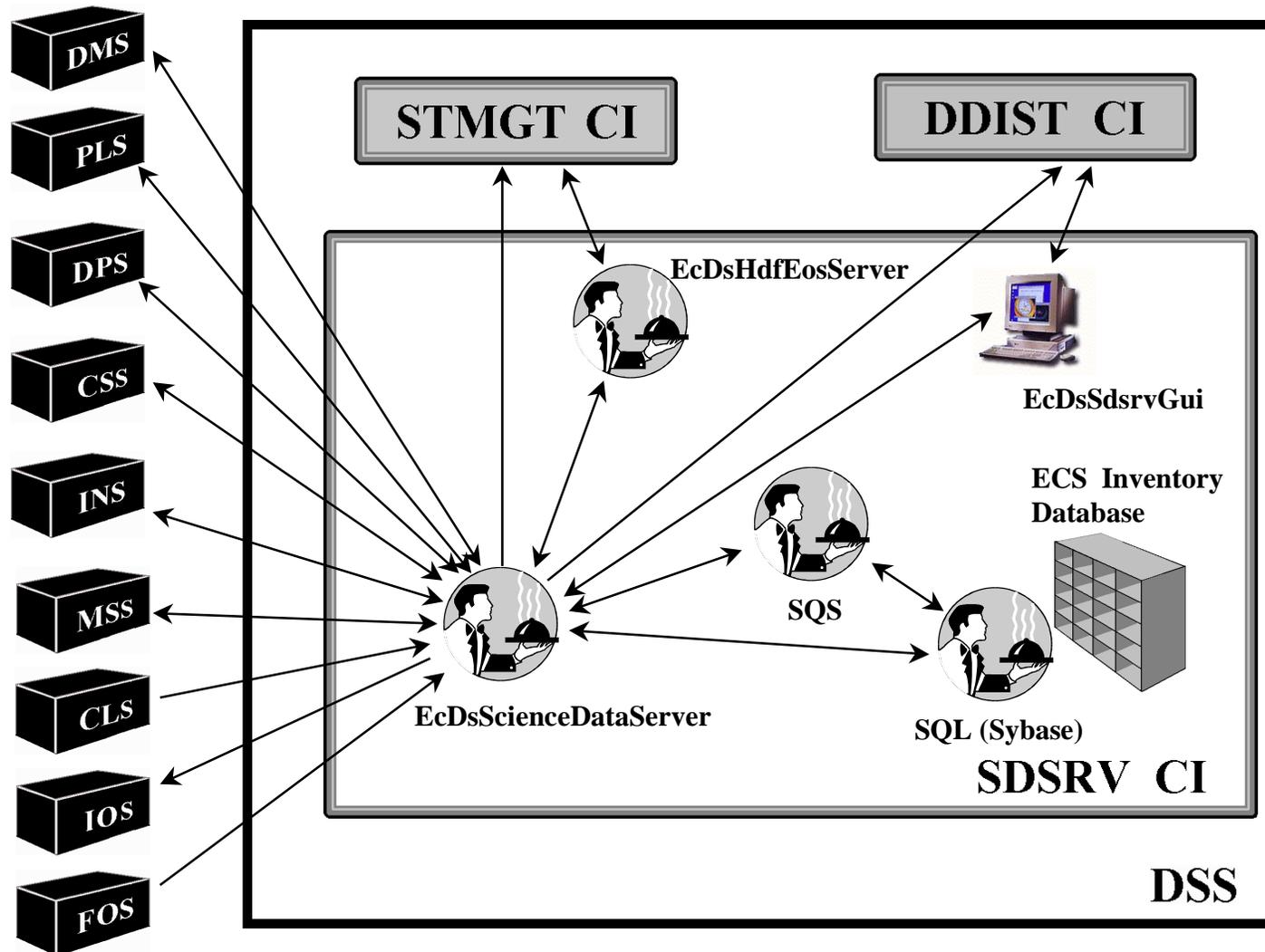
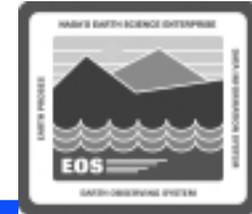
- **SDSRV (Cont.)**
 - **Start-up script (/usr/ecs/MODE/CUSTOM/utilities directory on the SDSRV Server host and the Operations Workstation)**
 - » **EcDsSdSrvGuiStart**

Ingest Concepts (Cont.)

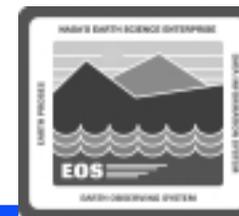


- **SDSRV (Cont.)**
 - **Other scripts**
 - » **EcTsDsClientDriverStart**
 - » **EcDsSrConvertEvt**
 - » **EcDsSrDbBuild**
 - » **EcDsSrDbDrop**
 - » **EcDsSrDbDump**
 - » **EcDsSrDbLoad**
 - » **EcDsSrDbMigrate**
 - » **EcDsSrDbPatch**
 - » **EcDsSrDbValids**

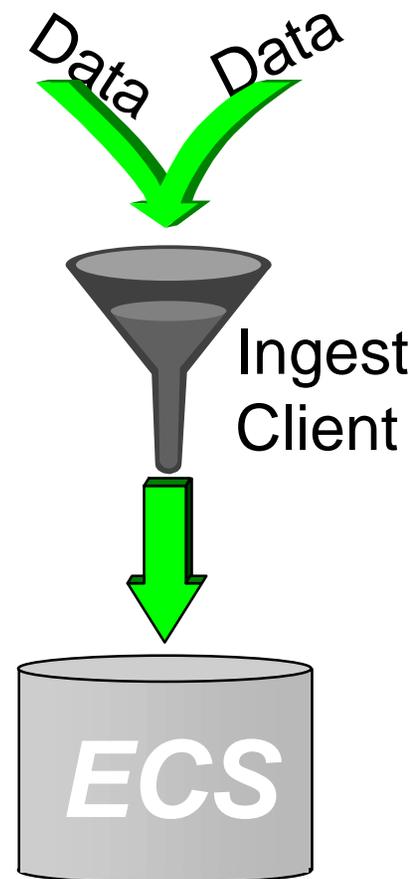
Data Server Subsystem: SDSRV Architecture and Interfaces



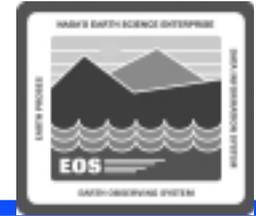
Ingest Process



- **Hardware and software for Ingest**
 - Receipt and storage of data from multiple sources into ECS
 - Sets stage for archiving and/or processing of the data
- **Provides tools**
 - Selected configuration: *Ingest client*
 - » Single virtual interface point for receipt of all external data to be archived
 - » Performs ingest data preprocessing, metadata extraction, and metadata validation

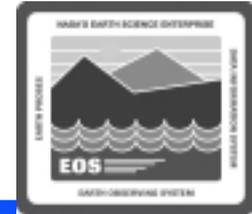


Ingest Activities



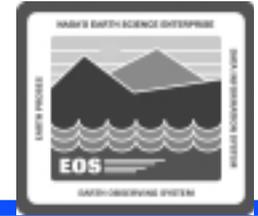
- **Ingest function brings data into ECS from external data providers**
- **Representative data providers**
 - **Landsat Processing System (LPS)**
 - **Landsat 7 Image Assessment System (IAS)**
 - **EOS Data and Operations System (EDOS)**
 - **Science Computing Facilities (SCFs)**
 - **Science Investigator-Led Processing Systems (SIPS)**
 - **National Oceanic and Atmospheric Administration (NOAA) National Environmental Satellite, Data, and Information Service (NESDIS)**
 - **NOAA National Centers for Environmental Prediction (NCEP)**

Ingest Activities (Cont.)



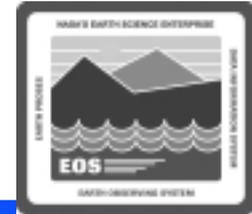
- **Ingest activities include...**
 - **Data transfer and transmission checking**
 - **Data preprocessing (including data conversions if required)**
 - **Metadata extraction (as required)**
 - **Metadata validation (as required)**
 - **Transferring ingested data to the Data Server Subsystem for long-term storage in the archive**

Ingest Activities (Cont.)



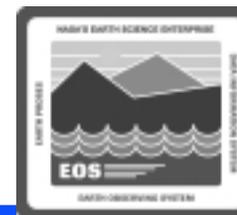
- **Ingest provides a single point for monitoring and control of data ingested from external data providers**
- **Nominal ingest process is fully automated with minimal operator intervention**

Ingest Categories



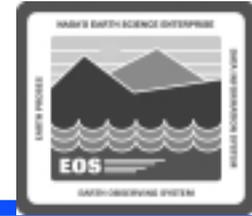
- **Automated network ingest**
 - **Used at Earth Resources Observation Systems (EROS) Data Center (EDC) only**
 - **Data provider is the Landsat Processing System (LPS)**
 - **Data Availability Notice (DAN) from LPS initiates ingest**
 - **ECS “gets” data from an LPS processor staging area via file transfer protocol (ftp) within a specified time window**

Ingest Categories (Cont.)



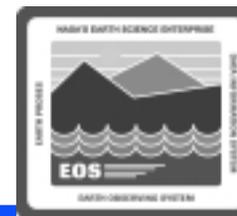
- **Automated polling ingest**
 - with delivery record
 - » ECS periodically checks a network location for a delivery record file, which indicates the availability of data for ingest
 - » ECS “gets” data from the applicable directory on an ECS staging server, where the data provider will have put the data
 - » Data providers include EDOS, IAS, SCFs, SIPS, and NOAA NCEP

Ingest Categories (Cont.)



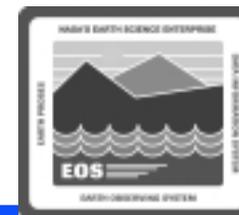
- **Automated polling ingest**
 - **without delivery record**
 - » **ECS periodically checks a network location for available data**
 - » **All data at the location are treated as one specific data type, one file per granule**
 - » **ECS “gets” data from the network location**
 - » **Once retrieved, the file is compared with the last version that was ingested**
 - » **If the new file is different from the previous one, it is ingested as a new file**
 - » **If it is identical to the previous one, it is not ingested**
 - » **Data providers include NOAA NESDIS CEMSCS**

Ingest Categories (Cont.)



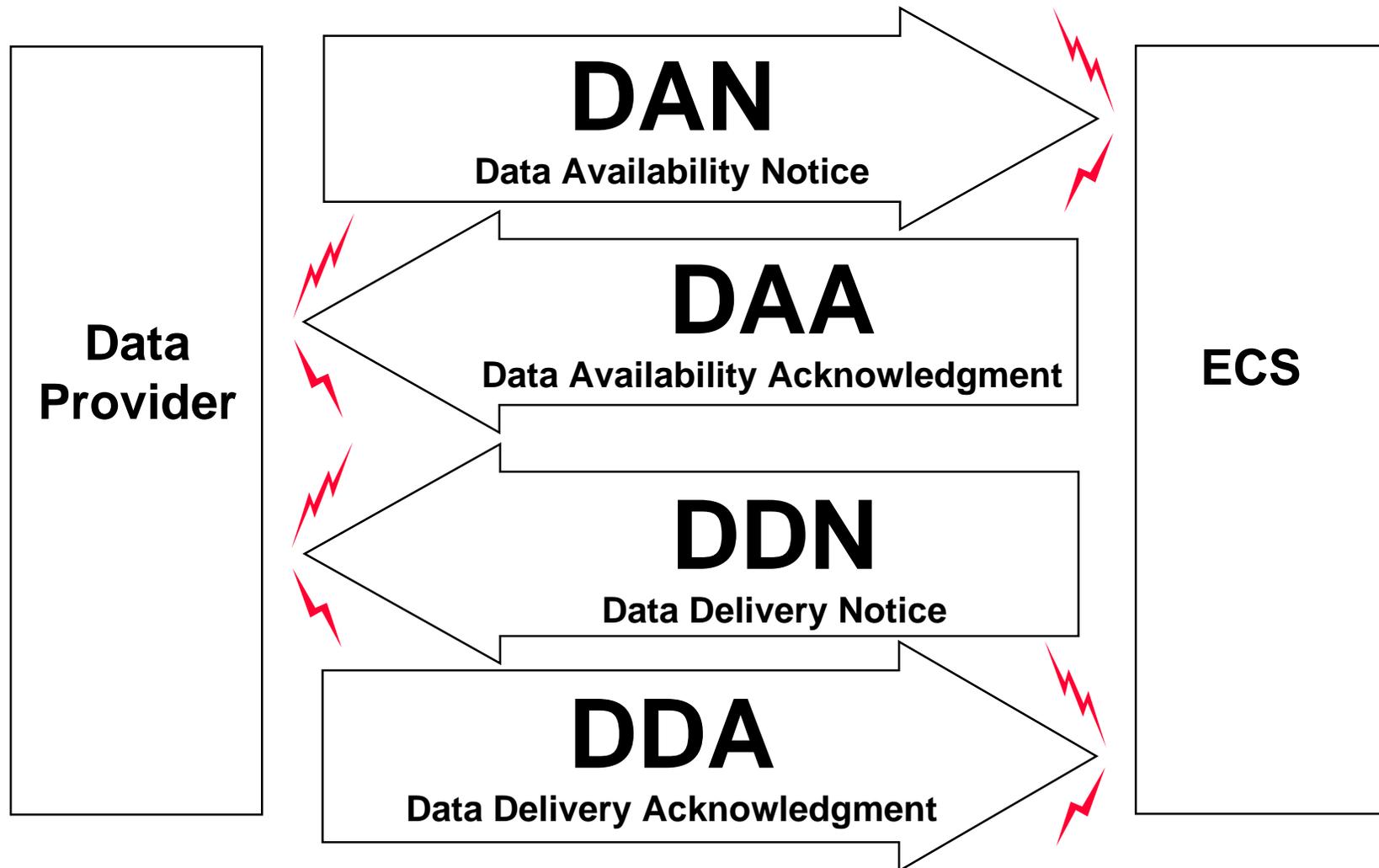
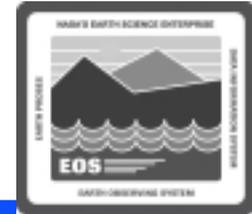
- **Hard media ingest by the Ingest/Distribution Technician**
 - Ingest from hard media (e.g., tape cartridges); from authorized institutions or other providers, or as backup
 - Requires file/record information equivalent to DAN/PDR
 - Data providers include SCFs and the Ground Data System (GDS) for the ASTER instrument

Ingest Categories (Cont.)

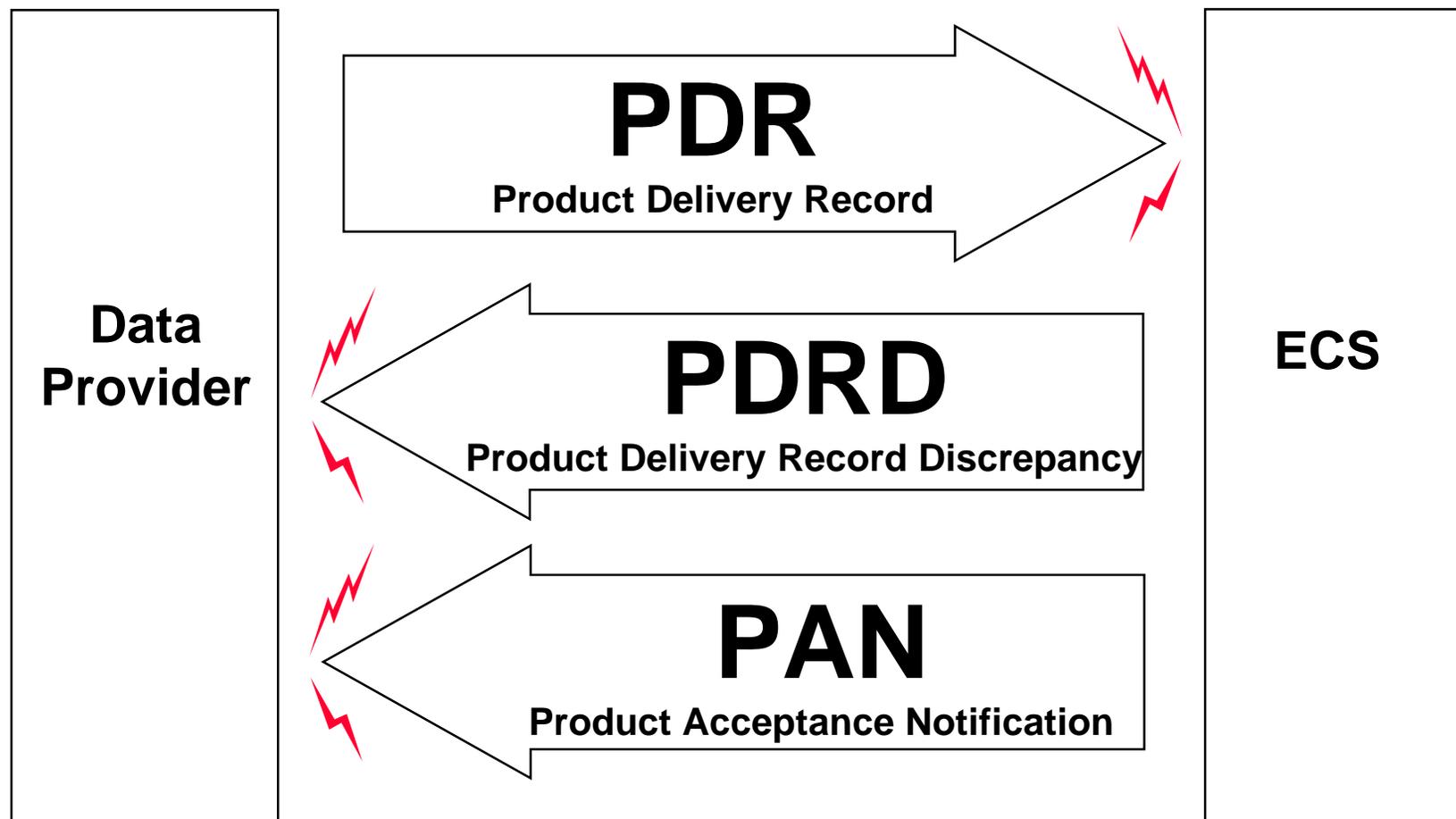
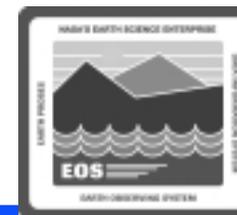


- **Cross-Mode Ingest Interface**
 - Ingest from other DAACs or other modes at the same DAAC
 - Ingest receives a distribution notice (via e-mail) of data files transferred via the FTP service
 - » Distribution notification is used to create a Delivery Record File that is put in an agreed-upon network location
 - Polling-with-delivery-record process checks the location for the delivery record files

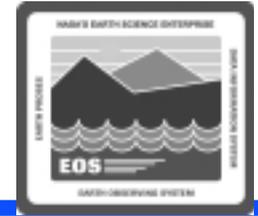
Ingest Automated Network Ingest Messages



Ingest Polling Messages

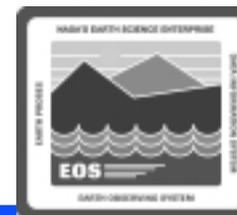


Data Transfer and Staging



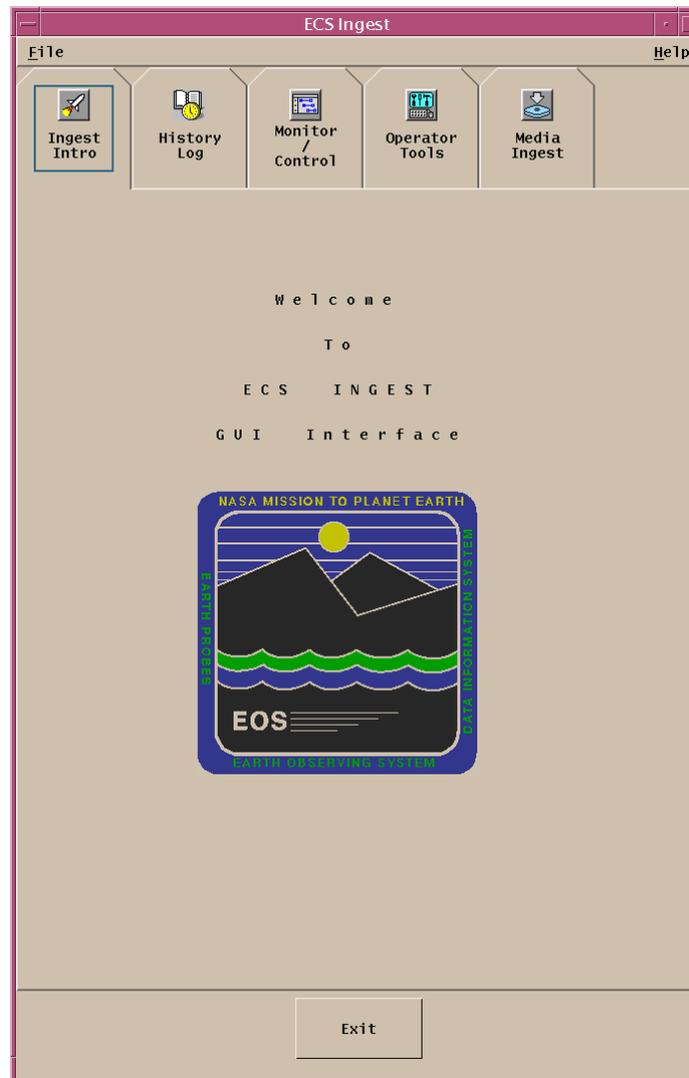
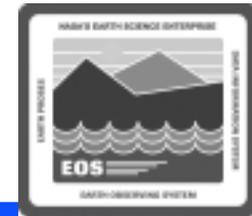
- **Data transfer from external data providers uses one of three methods:**
 - **File transfer protocol (ftp) “get” by ECS**
 - **Ftp “put” by external source**
 - **Hard media transfer**

Data Transfer and Staging (Cont.)

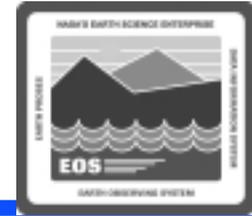


- **Data are staged to a working storage area**
 - Many types of ingest use “icl” (Ingest Client) staging areas
 - Media ingest (e.g., from D3 tape) typically involves staging in a “dip” (Distribution and Ingest Peripherals) area
 - Polling ingest for data from EDOS usually entails the use of the polling directory as the staging area
 - Some data are staged directly to working storage (“wks”) in the Data Server Subsystem
- **After the metadata have been extracted and their quality has been checked, data are transferred to an archive data repository in the Data Server Subsystem for long-term storage**

ECS Ingest GUI Intro Screen

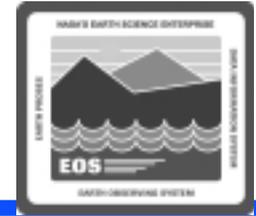


Launching the ECS Ingest and Storage Management Control GUIs



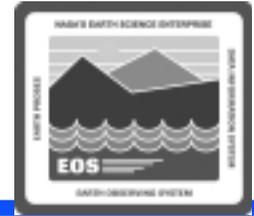
- **Software applications associated with Ingest:**
 - Automated Network Ingest Interface (EclnAuto)
 - Automated Polling Ingest (EclnPolling)
 - Request Manager (EclnReqMgr)
 - Granule Server (EclnGran)
 - ECS Ingest GUI (EclnGUI)
 - Ingest E-Mail Parser (EclnEmailGWServer)
 - Sybase SQL Server
- **Normally multiple instances of some Ingest servers**
- **Ingest depends on other servers, especially Storage Management and Science Data Server**

Launching the ECS Ingest and Storage Management GUIs (Cont.)



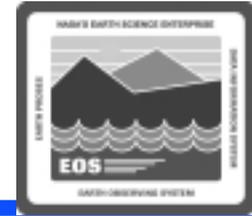
- **Use UNIX command line to gain access to graphical user interfaces (GUIs)**
- **Procedure (Launching the ECS Ingest GUI)**
 - **Access the command shell**
 - **Log in to the Operations Workstation using secure shell**
 - **Change directory to the directory containing the Ingest GUI startup script**
 - **Type command to start ECS Ingest GUI**

Launching the ECS Ingest and Storage Management GUIs (Cont.)



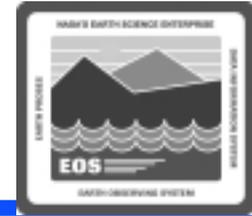
- **Software applications associated with Storage Management:**
 - **Storage Management Control GUI (EcDsStmgtGui)**
 - **Archive Server (EcDsStArchiveServer)**
 - **Staging Monitor Server (EcDsStStagingMonitorServer)**
 - **Staging Disk Server (EcDsStStagingDiskServer)**
 - **8mm Server (EcDsSt8MMServer)**
 - **D3 Server (EcDsStD3Server)**
 - **Ingest FTP Server (EcDsStIngestFtpServer)**
 - **FTP Distribution Server (EcDsStFtpDisServer)**
 - **Print Server (EcDsStPrintServer)**
 - **Pull Monitor Server (EcDsStPullMonitorServer)**

Launching the ECS Ingest and Storage Management GUIs (Cont.)



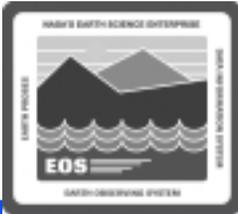
- **Software applications associated with Storage Management (Cont.):**
 - Sybase SQL Server
 - Archival Management and Storage System (AMASS)
- **Storage Management Control GUI can be used in Ingest physical media operations for taking 8mm stackers off line and putting the stackers back on line**
 - **Generally preferable to take a stacker off line prior to loading a tape containing data to be ingested**

Launching the ECS Ingest and Storage Management GUIs (Cont.)



- **Procedure (Launching the Storage Management Control GUI)**
 - Access the command shell
 - Log in to the Distribution Server host using secure shell
 - Change directory to the directory containing the Storage Management Control GUI startup script
 - Type command to start the Storage Management Control GUI

Storage Management Control GUI



Storage Management Control

File Options Backup Help

Sunday March 19, 2000 12:48:18 PM Mode: TS2

Storage Config. Resource Schedule Cache Stats. Storage Events

Configuration Parameter Reporting

Server Type Information

Server Type	# of Servers	Description
3480/3490	0	3480/3490 Device Server
4MM TAPE	0	4MM Tape Device Server
8MM TAPE	1	8MM Tape Device Server
9TRACK	0	9 Track Device Server
ARCHIVE	3	Archive Server
CDR	0	CDR Device Server
D3	1	D3 Device Server
DISTRIBUTION FTP	3	Distribution FTP Server
INGEST FTP	3	Ingest FTP Server
ORBITER	0	Orbiter Device Server

View Servers

Server Information

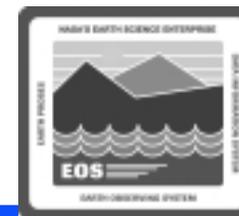
Server ID	Server Status
-----------	---------------

Add... Modify Delete View Volume Group Info View Devices

Operator Messages

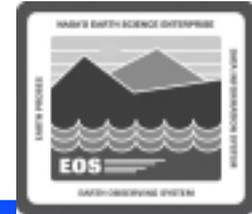
03/19/00 12:46:33 Old database entries were successfully purged.

Monitoring Ingest Status



- **Assumptions:**
 - **Ingest processes have been started**
 - **System is operating normally**
 - **Data are ready for ingest**
 - **Several DAN/PDR files have been received and logged by the system; the specific ingest processes have been assigned request IDs**
- **Invoke monitoring display with “Monitoring Ingest Requests” procedure**

Monitor/Control Tab: Text View



The screenshot shows the ECS Ingest software interface. The title bar reads "ECS Ingest". The menu bar includes "File" and "Help". The main toolbar contains icons for "Ingest Intro", "History Log", "Monitor / Control", "Operator Tools", and "Media Ingest".

Below the toolbar is a "Search By:" section with three radio buttons: "Request ID", "Data Provider", and "All Requests" (which is selected). There are two empty text input fields next to the first two options.

Below the search section are two radio buttons: "Graphical View" and "Text View" (which is selected). To the right of these is a "Monitoring..." button.

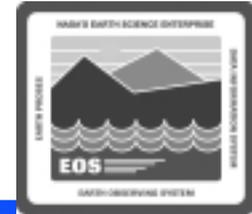
The main area is titled "Request Information" and contains a table with the following data:

Req ID	Status	Data Provider	Ingest Type	Priority	Start Date	Start Time
2929	Active	EDOS	Polling_w/DR	VHIGH	03/19/2000	14:24:56

Below the table is a "Find" text input field.

At the bottom of the interface are several control buttons: "Suspend", "Resume", "Cancel", and "Priority" (with a dropdown arrow). At the very bottom are "OK" and "Clear All" buttons.

Monitor/Control Tab: Graphical View



The screenshot shows the "ECS Ingest" application window. The title bar reads "ECS Ingest". The menu bar includes "File" and "Help". The main toolbar contains five icons: "Ingest Intro", "History Log", "Monitor / Control", "Operator Tools", and "Media Ingest".

Below the toolbar is a "Search By:" section with three radio buttons: "Request ID", "Data Provider", and "All Requests". The "All Requests" option is selected. There are two empty text input fields to the right of the radio buttons.

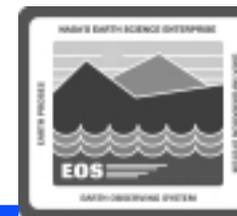
Below the search section are two view options: "Graphical View" (selected) and "Text View". To the right of these is a "Monitoring..." button.

The main data area is a table with the following columns: "Req ID", "Processing Start Date/Time", and "Percent Complete".

Req ID	Processing Start Date/Time	Percent Complete
2929	03/19/2000 14:24:56	

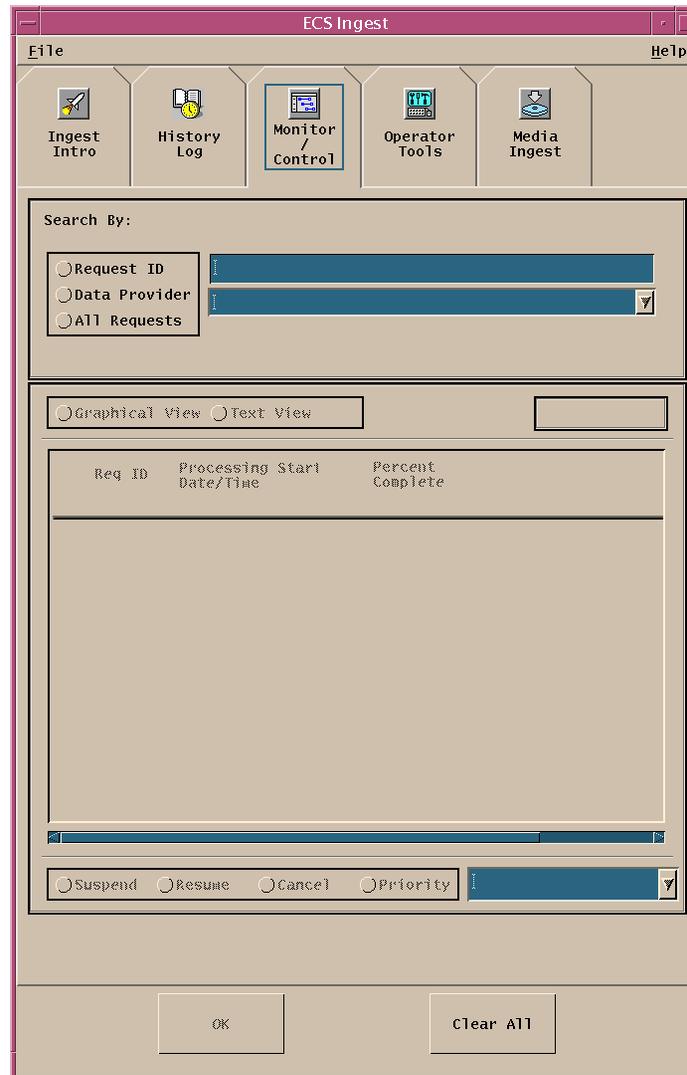
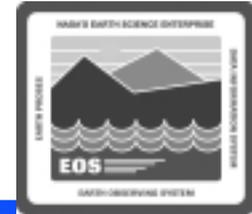
At the bottom of the window, there are several control buttons: "Suspend", "Resume", "Cancel", and "Priority". To the right of these buttons is a dropdown menu. At the very bottom of the window are two buttons: "OK" and "Clear All".

Monitoring Ingest Requests

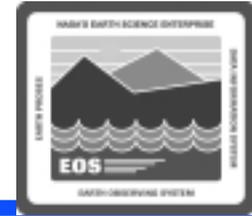


- **Procedure**
 - **Select the Ingest GUI Monitor/Control tab**
 - **Select the appropriate set of ingest requests**
 - **Select the type of view (i.e., graphical or text)**
 - **Observe ingest request processing**
 - **Resume/cancel requests as necessary**

ECS Ingest GUI Monitor/Control Tab



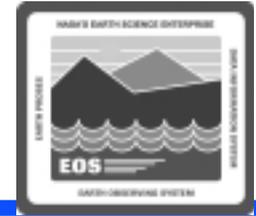
Monitoring Ingest Requests: Resuming Ingest Requests



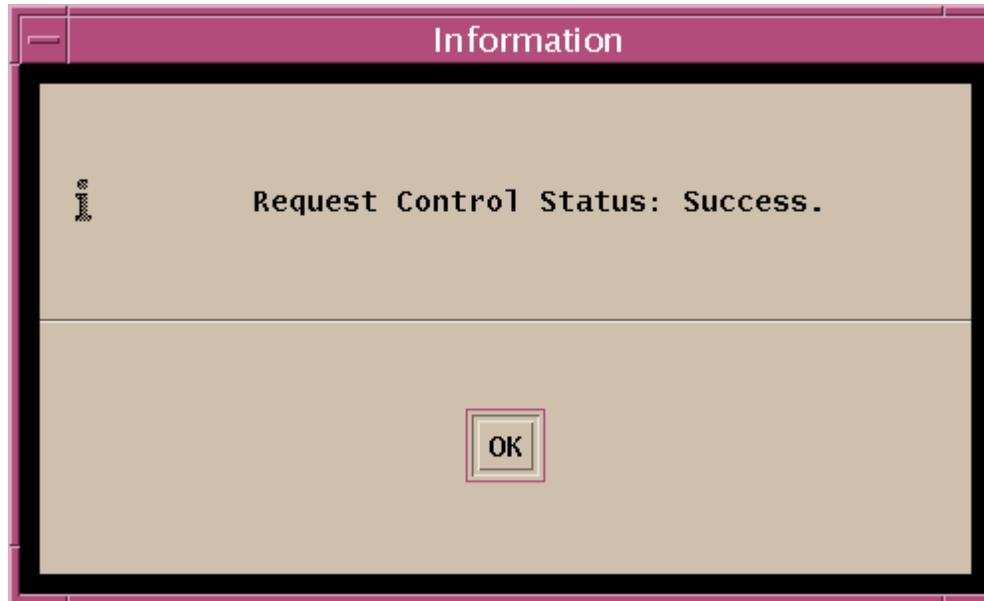
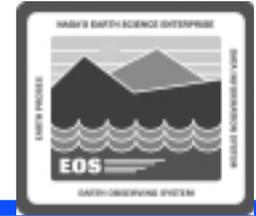
- **Procedure**

- **Click on the row corresponding to the request or granule to be resumed on the Monitor/Control tab (Text View)**
- **Click on the Resume button**
- **Click on the OK button at the bottom of the GUI**
- **Click on the Yes button in the Resume Request Confirmation Dialogue Box to confirm resuming the request/granule**
- **Click on the OK button in the Request Control Status Information Dialogue Box**

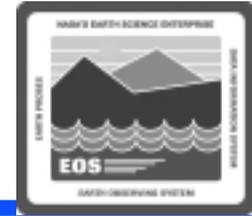
Resume Request Confirmation Dialogue Box



Request Control Status Information Dialogue Box



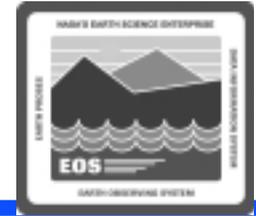
Monitoring Ingest Requests: Canceling Ingest Requests



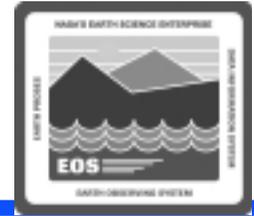
- **Procedure**

- **Click on the row corresponding to the request or granule to be canceled on the Monitor/Control tab (Text View)**
- **Click on the Cancel button**
- **Click on the OK button at the bottom of the GUI**
- **Click on the Yes button in the Cancel Request Confirmation Dialogue Box to confirm canceling the request/granule**
- **Click on the OK button in the Request Control Status Information Dialogue Box**

Cancel Request Confirmation Dialogue Box

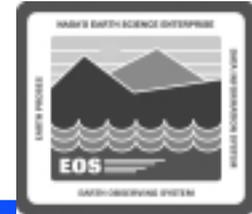


Processing Cross-Mode or Cross-DAAC Ingests



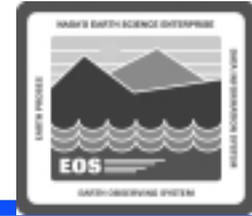
- **The Cross-Mode Ingest Interface allows the ingest of data from other DAACs or other modes at the same DAAC**
- **Process**
 - **A subscription (for future data) or order (for data already in the archive) is entered in the mode from which the data are to be transferred**
 - **The subscription or order specifies (among other things)...**
 - » **The data to be transferred**
 - » **Ftp push as the method of data distribution**
 - » **Destination for the ftp push**
 - » **The e-mail address for the Ingest E-Mail Parser (EclnEmailGWServer) in the receiving mode**

Processing Cross-Mode or Cross-DAAC Ingests (Cont.)



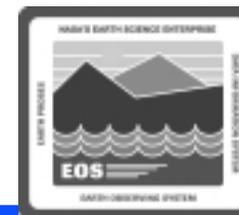
- **Process (Cont.)**
 - The e-mail address for the Ingest E-Mail Parser (EclnEmailGWServer) has the following format:
 - » `EclnEmailGWServer_MODE@host`
 - » e.g., `EclnEmailGWServer_TS1@e0ins01u.ecs.nasa.gov` for data being sent to the TS1 mode at the EDC DAAC
 - To fulfill the subscription or order Data Distribution in the transferring mode pushes the data to the specified location
 - Data Distribution builds an e-mail notification that the order has been fulfilled and sends the distribution notice to Ingest via e-mail
 - The Ingest E-Mail Parser in the receiving mode (e.g., TS1 at the EDC DAAC) receives the e-mail distribution notice that the data files have been transferred via ftp

Processing Cross-Mode or Cross-DAAC Ingests (Cont.)



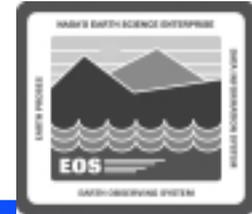
- **Process (Cont.)**
 - The Ingest E-Mail Parser parses the e-mail message and creates a delivery record file (PDR) using the information in the message
 - The Ingest E-Mail Parser copies the PDR into the appropriate polling directory
 - The applicable polling-with-delivery-record process in the receiving mode (e.g., TS1 at the EDC DAAC) checks the location for new delivery record files
 - The data are ingested in the receiving mode via the polling-with-delivery-record process

Ingest History Log



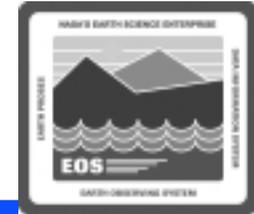
- **Upon Ingest completion...**
 - Notice automatically sent to data provider indicating the status of the ingested data
 - Data provider sends an acknowledgment of notice
 - Receipt of the acknowledgment logged by ECS
 - Request ID removed from the list of active requests
 - History log receives statistics on the completed transaction
- **History Log search criteria**
 - time period
 - data provider ID
 - data type
 - final request status

Ingest History Log (Cont.)



- **Ingest History Log formats**
 - **Detailed Report** - detailed information about each completed ingest request
 - **Summary Report** - summary of ingest processing statistics, including the average and maximum time taken to perform each step in the ingest process
 - » **Request-level Summary Report** - ingest request processing statistics
 - » **Granule-level Summary Report** - ingest granule processing statistics organized by data provider and Earth Science Data Type (ESDT)

Ingest History Log Screen



The screenshot shows the "ECS Ingest" application window. The title bar reads "ECS Ingest". The menu bar includes "File" and "Help". The main toolbar contains five icons with labels: "Ingest Intro", "History Log" (which is highlighted), "Monitor / Control", "Operator Tools", and "Media Ingest".

Below the toolbar is a "Search Criteria" section with the following fields:

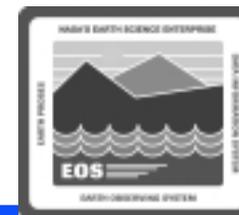
- Start Date/Time: month / day / year hour : min : sec. The year is set to 2000.
- Stop Date/Time: month / day / year hour : min : sec. The month is 19 and the year is 2000.
- Data Provider: A dropdown menu.
- Data Type: A dropdown menu.
- Final Request Status: A dropdown menu.

Below the search criteria are two radio buttons: "Detailed Report" and "Summary Report". A "Display" button is located to the right of these options.

The main area of the window is a "History Log" section, which contains a large, empty blue rectangular area. Below this area is a "Find" text input field.

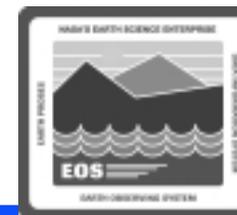
At the bottom center of the window is a "Clear All" button.

Viewing Ingest History Log



- **Procedure**
 - **Select the Ingest GUI History Log tab**
 - **Select the search criteria**
 - » **time period**
 - » **data provider**
 - » **data type**
 - » **final request status**
 - **Select Detailed Report or Summary Report**
 - **If Summary Report, select either Request Level report or Granule Level report**
 - **Click on the Display button**

History Log Detailed Report



ECS Ingest

File Help

Ingest Intro History Log Monitor / Control Operator Tools Media Ingest

Search Criteria

Start Date/Time: 3 1 2000 15 2 1
month / day / year hour : min : sec

Stop Date/Time: 3 19 2000 15 2 1

Data Provider: [Dropdown]

Data Type: [Dropdown]

Final Request Status: [Dropdown]

Detailed Report Summary Report Display

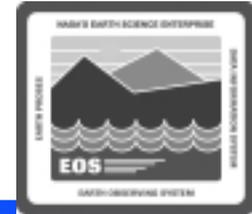
History Log

Req ID	Data Provider	Status	Ingest Type	Start Date	Sta Tim
2765	lps004	Successful	Auto	03/01/2000 15:	
2766	DDIST	Successful	Polling_w/DR	03/01/2000 15:	
2767	lps004	Successful	Auto	03/01/2000 15:	
2768	DDIST	Successful	Polling_w/DR	03/01/2000 15:	
2769	DDIST	Successful	Polling_w/DR	03/01/2000 15:	
2770	DDIST	Successful	Polling_w/DR	03/01/2000 15:	
2771	DDIST	Successful	Polling_w/DR	03/01/2000 15:	

Find: [Text Box]

Clear All

History Log Summary Report - Request Level



ECS Ingest

File Help

Ingest Intro History Log Monitor / Control Operator Tools Media Ingest

Search Criteria

Start Date/Time: 3 1 2000 15 3 12
month / day / year hour : min : sec

Stop Date/Time: 3 19 2000 15 3 12

Data Provider: [Dropdown]

Data Type: [Dropdown]

Final Request Status: [Dropdown]

Request Level Granule Level Display

Processing Statistics

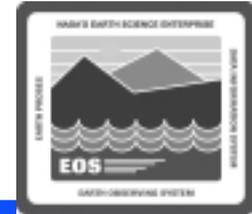
Data Provider	Ttl Reqs	Ttl Errs	Gran Avg	Gran Max	File Avg	File Max	File Size (MB) Avg	File Size (MB) Max	Tran Ttl Avg
ACRIM	1	0	1	1	2	2	0.004	0.004	0
ASTER	1	1	1	1	1	1	124.826	124.826	1
ASTERDEM	6	1	2	3	4	6	29.202	43.880	0
ASTERGDS	5	4	4	17	8	34	461.382	1932.431	0
ASTER_OSF	1	0	1	1	2	2	0.004	0.004	0
DAO	6	3	1	1	1	3	69.039	375.745	0
DDIST	21	6	1	1	2	2	17.112	63.803	0

Find: [Text Box]

Go Back

Clear All

History Log Summary Report - Granule Level



ECS Ingest

File Help

Ingest Intro History Log Monitor / Control Operator Tools Media Ingest

Search Criteria

Start Date/Time: 3 1 2000 15 12 8
 month / day / year hour : min : sec

Stop Date/Time: 3 19 2000 15 12 8

Data Provider: [Dropdown]

Data Type: [Dropdown]

Final Request Status: [Dropdown]

Request Level Granule Level Display

Processing Statistics

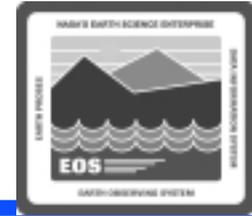
Data Provider	Data Type	Total Granules	Total Errors	File Avg	File Max	Size (MB) Avg	Size (MB) Max
ACRIM	ACR3L20M	1	1	2	2	0.004	0.004
ASTER	AST_L1B	1	1	1	1	124.826	124.826
ASTERDEM	AST14DEM	12	2	2	2	14.601	14.628
ASTERGDS	AST_L1A	17	2	2	2	113.672	113.675
ASTERGDS	AST_L1B	3	1	1	1	124.826	124.826
ASTER_OSF	AST_POSF	1	2	2	2	0.004	0.004
DAO	DELARCHM	1	1	1	1	8.971	8.971

Find: [Text Box]

Go Back

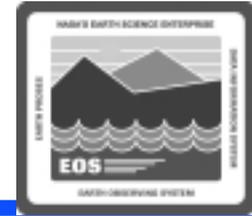
Clear All

Verifying the Archiving of Ingested Data



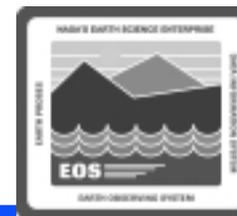
- **Check the appropriate directory on the File and Storage Management System (FSMS) host (e.g., g0drg01)**
 - Directories are identified by the type of data (e.g., aster, ceres, l7, modis) in them and correspond directly to tape volumes in the system
 - Just a matter of checking the relevant FSMS directory to determine whether the applicable files/granules have been transferred
 - Procedure does not involve the use of any archive software
 - Before starting it is essential to know what data to look for
 - » End Date(s)/Time(s) and Data Volume(s) for ingest requests shown on the ECS Ingest GUI

Verifying the Archiving of Ingested Data (Cont.)



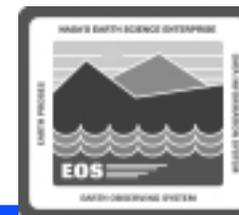
- **Procedure**
 - Log in to the FSMS host
 - Change directory to the directory containing the archive data
 - Perform a long listing of directory contents for a particular date (e.g., `ls -la | grep 'Mar 17'`)
 - » It is important to limit the listing (e.g., to a particular day)
 - » If there are tens of thousands of granules in the directory, just doing a listing of the entire directory would cause serious performance problems
 - Compare End Date(s)/Time(s) and Data Volume(s) for the applicable ingest request(s) shown on the Ingest GUI with the dates/times and file sizes listed for the files in the directory

Cleaning Polling Directories



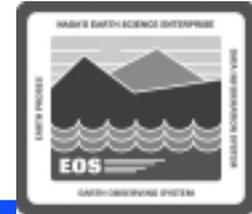
- **Polling directories should be cleaned up after successful archiving to avoid running out of disk space**
- **Automatic clean-up is scheduled for Release 5B**
- **However, it may still be useful to know how to use the clean-up scripts**
- **Procedure**
 - **Log in to the ingest client host using secure shell**
 - **Type command to start clean-up script**
 - **Type appropriate responses to clean-up script prompts**

Performing Hard Media Ingest



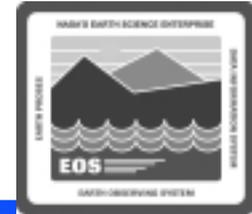
- **ECS supports hard media ingest from either of the following media (both types may not be supported at all sites):**
 - 8mm tape cartridges
 - D3 tape cartridges
- **Performed by the DAAC Ingest/Distribution Technician using the Media Ingest tool on the Ingest GUI**
 - **Delivery Record file required; one of two options**
 - » **Embedded in the hard media**
 - » **Made available electronically (e.g., on the network)**

Performing Hard Media Ingest (Cont.)



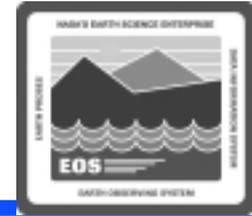
- **Labeling Tape Cartridges with Bar Codes**
 - Each tape containing data to be ingested must have a bar-code label
 - Bar-code labels are either purchased or printed for the 8mm tape cartridges
 - » Procedure for Printing Labels is included in the Data Distribution lesson
 - Ingest/Distribution Technician affixes a bar-code label to the label area on the edge of each tape

Performing Hard Media Ingest (Cont.)



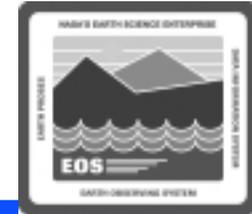
- **Setting Up the 8mm Stackers**
 - Partially a manual process
 - Involves the following activities:
 - » Define the tape groups (by stacker sleeve) if necessary
 - » Record the bar code of each tape loaded in a particular location in a sleeve
 - » Identify the stacker into which each sleeve is loaded

Performing Hard Media Ingest (Cont.)



- **Procedure (Setting Up the 8mm Stackers)**
 - **Select the Resource Schedule tab of the Storage Management Control GUI**
 - **If needed set up a new tape group (using the Manage Tapes function) for the tape(s) to be put in the stacker**
 - **Load tapes in the sleeve and stacker by performing the procedure for Unloading and Loading Tapes for Ingest Purposes**
 - **Assign the tape group to the stacker**

Storage Management Control GUI: Resource Schedule Tab



Storage Management Control

File Options Backup Help

Sunday March 19, 2000 12:59:42 PM Mode: TS2

Storage Config. Resource Schedule Cache Stats. Storage Events

Storage Management - Resource and Device Scheduling

Resource Pool Information

Resource Pool Name	Number Devices	Number Online Devices	Current Queued Requests
SMM TAPE	2	2	0

Schedule Resource View Requests View All Requests

Resource Information

Request ID	Resource	Device Name	Device Status	Operational Status	Current Status	Current Operati

Schedule Device Stacker & Drive Status View Tapes Manage Tapes Find Tapes

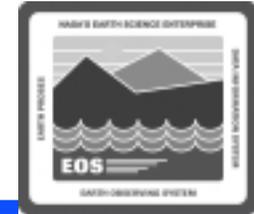
Tape Information

Tape ID	Tape Location	Slot Number	Tape Status

Operator Messages

03/19/00 12:46:33 Old database entries were successfully purged.

Storage Management Control GUI: Manage Tape Groups Window



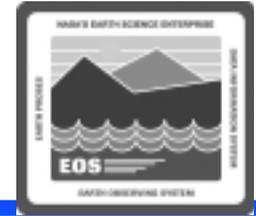
Manage Tape Groups

Tape Groups

Tape Group ID	Number of Slots	Media Type	Assigned Stacker
8MMEXB210VATC-1	10	8MM	8MMEXB210VATC1

New Tape Group Delete Tape Group Configure Tapes Assign Stacker Resume Activity Inventory Stacker Close

Storage Management Control GUI: New Tape Group Window

A screenshot of a dialog box titled "New Tape Group". The dialog box has a light beige background and a dark purple title bar. It contains three input fields: "Tape Group ID:" with a text box, "Number of Slots:" with a spin box, and "Media Type:" with a dropdown menu. At the bottom, there are three buttons: "Ok", "Apply", and "Cancel".

New Tape Group

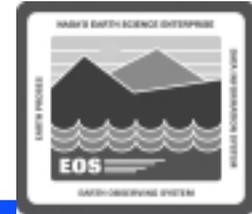
Tape Group ID:

Number of Slots: ▲ ▼

Media Type: ▼

Ok Apply Cancel

Storage Management Control GUI: Configure Tape Group Window



Configure Tape Group

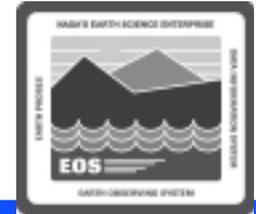
Tape Group ID: Training

Slot Number	Element Number	Capacity (GB)	Slot Use	Tape ID
1	1	0	Read-Only	
2	2	0	Read-Only	
3	3	0	Read-Only	
4	4	0	Read-Only	
5	5	0	Read-Only	
6	6	0	Read-Only	
7	7	0	Read-Only	
8	8	0	Read-Only	
9	9	0	Read-Only	

1 1 0 Read-Only Ingest

Ok Apply Assign Capacity to All Tapes Assign Use to All Tapes Cancel

Storage Management Control GUI: Assign Tape Group to Stacker



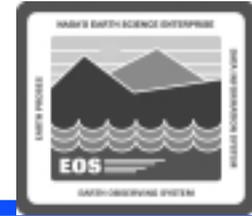
Assign Tape Group to

Stacker List

Stacker ID
8MMEXB210VATC1

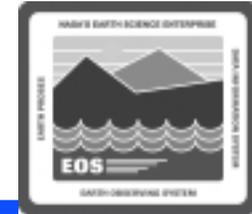
Assign Unassign Cancel

Performing Hard Media Ingest (Cont.)



- **Procedure (Unloading and Loading Tapes for Ingest Purposes)**
 - **Verify that there is no active 8mm ingest**
 - **Unload an 8mm tape stacker**
 - **Load an 8mm tape stacker**

Storage Management Control GUI: Schedule Stacker Drive



Schedule Stacker/Drive

Stacker Information

Stacker ID	Medium	Status	Error Count	Slots Total/On-Line	Drives Total/On-Line
8MMEXB210VATC1	SMM	Online	0	11	2

Find

Select All Status Online Slot Status

Drive Information

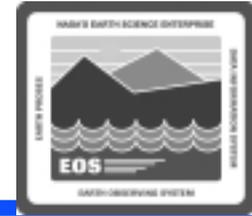
Device Name	Status	Current Status	Stacker ID	Description
8MMEXB210VATC11	Online	Unallocated	8MMEXB210VATC1	Tape Drive 1
8MMEXB210VATC12	Online	Unallocated	8MMEXB210VATC1	Tape Drive 2

Find

Select All Status Online Current Status Unallocated

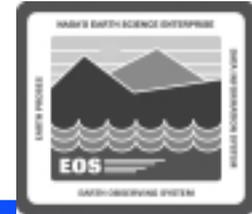
Close

Performing Hard Media Ingest (Cont.)



- **Performing Media Ingest from 8mm Tape**
 - **Assumptions:**
 - » **Tape containing the data to be ingested has been loaded into a stacker as described in the procedure for Unloading and Loading Tapes for Ingest Purposes**
 - » **Stacker has been properly set up as described in the procedure for Setting Up the 8mm Tape Stackers**
 - » **The PDR file is available, either placed on the network by the data provider or embedded in the media**
 - » **All applicable servers and the ECS Ingest GUI are currently running, and the Ingest Intro screen is being displayed**

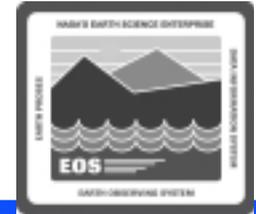
Performing Hard Media Ingest (Cont.)



- **Procedure (Performing Media Ingest from 8mm Tape)**
 - **Select the Ingest GUI Media Ingest tab**
 - **Identify the type of medium**
 - **Enter the stacker ID**
 - **Enter the stacker slot ID**
 - **Select the data provider**
 - **Enter the media volume ID**
 - **Identify the delivery record file location**
 - **Initiate and monitor the data transfer**
 - **Monitor request processing**

NOTE: During data transfer from tape, the Ingest GUI prevents any other function from being selected until the transfer has been completed

Media Ingest Tab



ECS Ingest

File Help

Ingest Intro History Log Monitor / Control Operator Tools Media Ingest

Media Type [v]

Data Provider [v]

Media Volume ID(Barcode) [v]

Data Delivery Record File Location

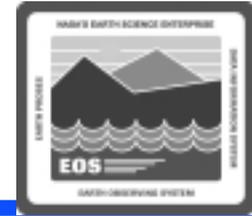
On Network

Embedded in Media

Data Delivery Record File Name: [v]

OK Clear All

Media Ingest Screen: 8mm Tape



ECS Ingest

File Help

Ingest Intro History Log Monitor / Control Operator Tools Media Ingest

Media Type: 8mm Tape

Stacker ID: [] Stacker Slot ID: []

Data Provider: []

Media Volume ID(Barcode): []

Data Delivery Record File Location

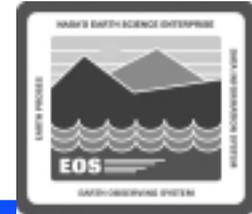
On Network

Embedded in Media

Data Delivery Record File Name: []

OK Clear All

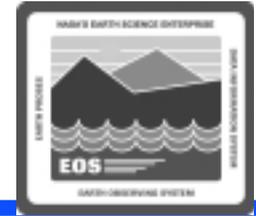
Performing Hard Media Ingest (Cont.)



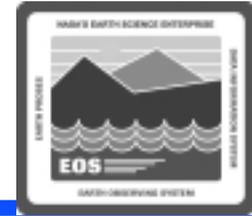
- **Procedure (Performing Media Ingest from D3 Tape)**
 - **Select the Ingest GUI Media Ingest tab**
 - **Identify the type of medium**
 - **Select the data provider**
 - **Enter the media volume ID**
 - **Identify the delivery record file location**
 - **Place the tape cartridge in the tape unit**
 - **Initiate and monitor the data transfer**
 - **Monitor request processing**

NOTE: During data transfer from tape, the Ingest GUI prevents any other function from being selected until the transfer has been completed

Media Ingest Screen: D3 Tape

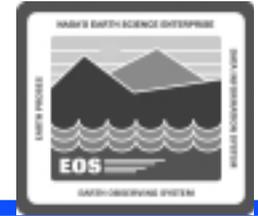
The screenshot shows the "ECS Ingest" software window. The title bar reads "ECS Ingest". The menu bar includes "File" and "Help". Below the menu bar is a toolbar with five icons: "Ingest Intro", "History Log", "Monitor / Control", "Operator Tools", and "Media Ingest". The main area contains a "Media Type" dropdown menu set to "D3 Tape". Below it is a "Data Provider" dropdown menu. Underneath is a "Media Volume ID(Barcode)" text input field. A dialog box titled "Data Delivery Record File Location" is open, showing two radio buttons: "On Network" (selected) and "Embedded in Media". Below the radio buttons is a "Data Delivery Record File Name:" text input field. At the bottom of the window are "OK" and "Clear All" buttons.

Document Scanning



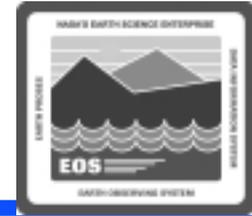
- **Procedure (Document Scanning)**
 - **Start the scanning program**
 - **Select the 'Read from Scanner' option**
 - **Select the 'Save Image Defer OCR' option**
 - **Load documents into the HP ScanJet feeder**
 - **Start the scanning process (select 'Go')**
 - **Save the document**

Document Scanning (Cont.)



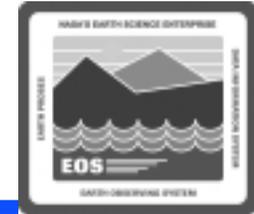
- **Procedure (Gaining Access to Scanned Documents)**
 - Start the scanning program
 - Open the scanned document
 - Review the document to verify that it has been properly scanned

Ingest Tunable Parameters and File Transfers



- **Operator Tools Tab**
 - **Two GUI screens to view and set ingest thresholds**
 - » **Modify External Data Provider/User Information**
 - » **Modify System Parameters**
 - **One GUI screen for transferring files**
 - » **File Transfer**

ECS Ingest GUI Operator Tools Tab

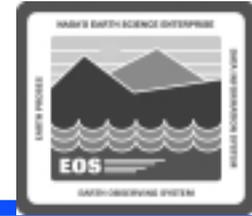


The screenshot shows the "ECS Ingest" application window with the "Operator Tools" tab selected. The interface includes a menu bar with "File" and "Help", and a toolbar with icons for "Ingest Intro", "History Log", "Monitor / Control", "Operator Tools", and "Media Ingest". Below the toolbar are three buttons: "Modify External Data Provider / User Information", "Modify System Parameters", and "File Transfer". The main area contains a table of configuration parameters, each with a "Current" value and a "New" value next to a slider control.

Volume Threshold	Current: 249998	New:	<input type="range"/>	MB
Request Threshold	Current: 1000	New:	<input type="range"/>	
Communication Retry Count	Current: 5	New:	<input type="range"/>	
Communication Retry Interval	Current: 5	New:	<input type="range"/>	mins
Monitor Time	Current: 6	New:	<input type="range"/>	mins
Screen Update Time	Current: 1	New:	<input type="range"/>	secs

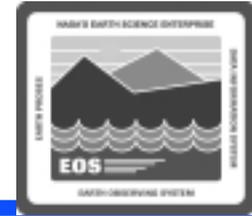
At the bottom of the window are two buttons: "OK" and "Clear All".

Ingest Tunable Parameters and File Transfers (Cont.)



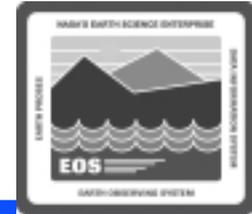
- **Data provider data/thresholds**
 - FTP user name/password
 - E-mail address
 - HTML password
 - Cell Directory Service (CDS) entry name
 - Server destination Universal Unique Identifier (UUID)
 - Maximum data volume
 - Maximum number of concurrent ingest requests
 - Priority for ingest processing
 - “Notify” parameters; for example,...
 - » ftp directory
 - » ftp username/password

Ingest Tunable Parameters and File Transfers (Cont.)



- **System thresholds**
 - **Maximum data volume to be ingested concurrently**
 - **Maximum number of concurrent ingest requests**
 - **Communication retry count**
 - **Communication retry interval**
 - **Monitor time**
 - **Screen update time**

Modify Data Provider Parameters



ECS Ingest

File Help

Ingest Intro History Log Monitor / Control Operator Tools Media Ingest

Modify External Data Provider / User Information Modify System Parameters File Transfer

Data Provider: EDOS

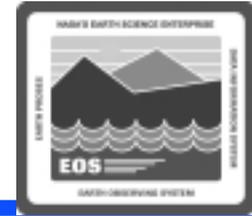
FTP Username	FTP Password
<input type="text" value="tins"/>	<input type="password" value=""/> <input type="button" value="OK"/>
Email Address	HTML Password
<input type="text" value="cmshared@tins02u.ecs.nasa."/>	<input type="password" value=""/> <input type="button" value="OK"/>
CDS Entry Name	Server Destination UUID
<input type="text" value="EcCsLandsat7Gateway"/>	<input type="text" value=""/>

Volume Threshold Current: 75000 New: MB

Request Threshold Current: 100 New:

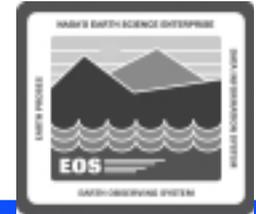
Priority Level Current: VHIGH New:

Ingest Tunable Parameters and File Transfers (Cont.)



- **Procedure (Modifying External Data Provider Information)**
 - **Select the Ingest GUI Operator Tools: Modify External Data Provider/User Information tab**
 - **Select the data provider whose information is to be changed**
 - **Modify the data provider information as necessary**
 - **Save the changes to data provider information**

Notify Parameters Window



Notify Parameters

Notify Type

EDOS

Notify FTP Node

Notify FTP Directory

Notify FTP Username

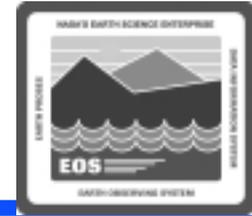
Notify FTP Password

OK

OK

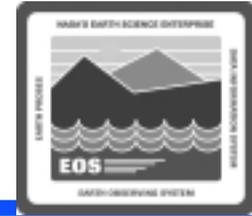
Cancel

Ingest Tunable Parameters and File Transfers (Cont.)



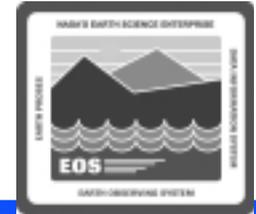
- **Two system parameters affect communications between external data providers and ECS**
 - **Communication retry count**
 - » **The number of successive times the system tries to establish ingest communications with a data provider before registering a communications failure and moving on to the next ingest request**
 - **Communication retry interval**
 - » **The time between successive attempts to establish communication**

Ingest Tunable Parameters and File Transfers (Cont.)



- **Two system parameters may be used to set the behavior of the system according to operator preference**
 - **Monitor time**
 - » **The amount of time that information about a completed ingest transaction remains available on the Monitor/Control screen after its completion**
 - **Screen Update Time**
 - » **The amount of time between automatic data updates on the Monitor/Control screen**

Modify System Parameters



ECS Ingest

File Help

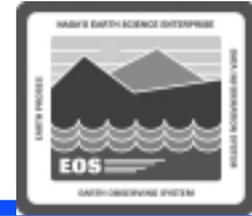
Ingest Intro History Log Monitor / Control Operator Tools Media Ingest

Modify External Data Provider / User Information **Modify System Parameters** File Transfer

Volume Threshold	Current: 249998	New: <input type="text"/>	MB
Request Threshold	Current: 1000	New: <input type="text"/>	
Communication Retry Count	Current: 5	New: <input type="text"/>	
Communication Retry Interval	Current: 5	New: <input type="text"/>	mins
Monitor Time	Current: 6	New: <input type="text"/>	mins
Screen Update Time	Current: 1	New: <input type="text"/>	secs

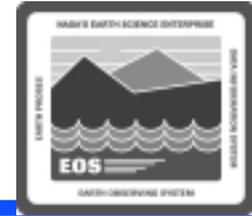
OK Clear All

Ingest Tunable Parameters and File Transfers (Cont.)



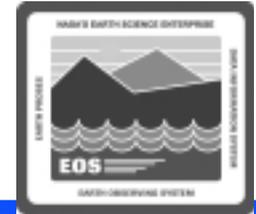
- **Procedure (Modifying System Parameters on the Ingest GUI)**
 - **Select the Ingest GUI Operator Tools: Modify System Parameters tab**
 - **Modify Ingest operating parameters as necessary**
 - **Save the changes to Ingest operating parameters**

Ingest Tunable Parameters and File Transfers (Cont.)

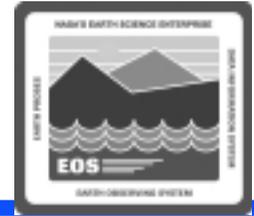


- **File Transfer tab**
 - allows the Ingest/Distribution Technician to transfer files
 - allows the Ingest/Distribution Technician to build **System Monitoring and Coordination Center (SMC) History Files**
 - » **SMCHeaderFile**
 - » **SMCdataFile**

Transfer Files

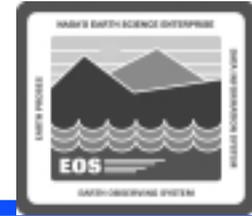


Ingest Tunable Parameters and File Transfers (Cont.)



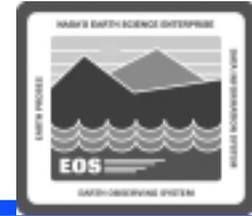
- **Procedure (Transferring Files)**
 - **Select the Ingest GUI Operator Tools: File Transfer tab**
 - **Select either Build SMC History Files or Generic File Transfer as appropriate**
 - **Select the file to be transferred**
 - **Enter the destination of the file to be transferred**
 - **Initiate and monitor the file transfer**

Tuning System Parameters in the Database or Configuration Files



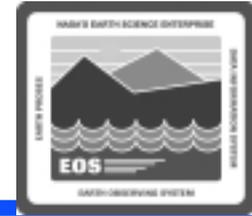
- **System parameters may be subject to control by Configuration Management (CM)**
 - When making or requesting a change to system parameters, the CM process at the particular site must be followed (if applicable)
- **Two types of places where parameters can be set:**
 - Ingest database
 - Configuration files
- **In general the system parameters in the database are modified using the GUI**
- **System parameters specified in configuration files are modified by editing the appropriate configuration file**

Tuning System Parameters (Cont.)



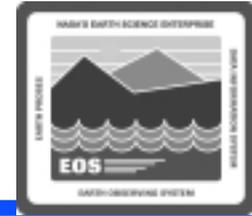
- **Configuration Registry**
 - **Scheduled for the second delivery of Release 5B**
 - **Significant change in the management of ECS configuration parameters**
 - » **Configuration Registry Server will provide a single interface for retrieving configuration attribute-value pairs for ECS servers from the Configuration Registry Database, via a Sybase server**
 - » **Configuration Registry Database will be loaded with data from the configuration files**
 - » **After the Configuration Registry is loaded the configuration files will be moved or renamed, making them inaccessible to the applicable servers**
 - » **When ECS servers are started they will access the Configuration Registry Database to obtain needed configuration parameters**

Tuning System Parameters (Cont.)



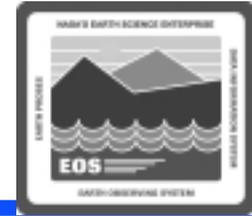
- **Configuration Registry (Cont.)**
 - Database Administrator will have access to a Configuration Registry GUI for viewing and editing configuration data in the database
 - It will be necessary to coordinate with the Database Administrator when changes to configuration parameters are needed
 - Changes to configuration-controlled parameters are subject to approval through the site CM process

Tuning System Parameters (Cont.)



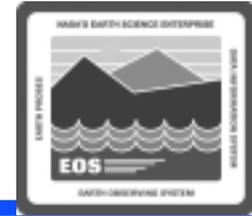
- **Tuning Parameters specified in configuration files**
 - **AppLogSize**
 - » **Maximum size of the application log (ALOG) file for the application in whose configuration file the parameter is specified**
 - **AppLogLevel**
 - » **Level of detail provided in the ALOG file for the application in whose configuration file the parameter is specified**
 - » **Setting of “0” provides the most data**
 - **DebugLevel**
 - » **Level of detail provided in the debug log file for the application in whose configuration file the parameter is specified**
 - » **Setting of “3” provides the most data**

Tuning System Parameters (Cont.)



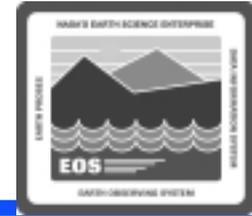
- **Tuning Parameters specified in configuration files (Cont.)**
 - **INGEST_CONNECTION_POOL_SIZE**
 - » Number of database connections - varies with the particular program connecting to the database
 - » Single-threaded programs (i.e., EclnAuto, EclnGUI, EclnPolling) need one database connection only
 - » The number of database connections required for EclnGran depends on the maximum number of granules that can be processed at a time (for a maximum of five granules, two database connections are probably enough)
 - » For the EclnReqMgr there should be at least two database connections
 - **ListenThreads**
 - » Number of listen threads assigned to the application in whose configuration file the parameter is specified

Tuning System Parameters (Cont.)



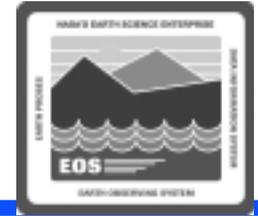
- **Tuning Parameters specified in configuration files (Cont.)**
 - **RETRY_TIME_INTERVAL**
 - » Number of seconds before EclnAuto retries to send a request to the Request Manager
 - **SAVEONEXIT**
 - » Set to “true” for debug purposes only
 - » When “true,” staging disks do not get cleaned up
 - » For Granule Server, when “true,” the local preprocessing disk does not get cleaned up
 - **SDSRV_RETRY_INTERVAL**
 - » Amount of time (in seconds) related to retrying remote procedure calls (RPCs) to Science Data Server
 - **SDSRV_RETRY_ATTEMPTS**
 - » Number of tries related to retrying RPCs to Science Data Server

Tuning System Parameters (Cont.)



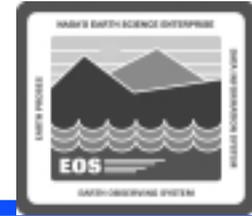
- **Tuning Parameters specified in configuration files (Cont.)**
 - **ADVERTISE_RETRY_WAIT_TIME**
 - » Amount of time (in seconds) related to retrying RPCs to the advertising service
 - **ADVERTISE_RETRIES**
 - » Parameter (number of tries) related to retrying RPCs to the advertising service
 - **ADVERTISING_SYBASE_LIMIT**
 - » Number of ESDTs sent to Advertising in one request
 - » If set to zero, all ESDTs from the Ingest database are sent at once
 - » Needs to be changed only if Advertising comes up against a limitation by Sybase as to how many ESDTs it can handle in one request

Tuning System Parameters (Cont.)



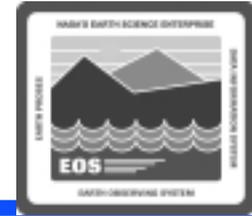
- **Tuning Parameters specified in configuration files (Cont.)**
 - **PollingTimerInterval**
 - » Amount of time (in seconds) between polling instances
 - » Specified in the section for each applicable data provider listed in the file
 - » Value varies depending on the data provider

Tuning System Parameters (Cont.)



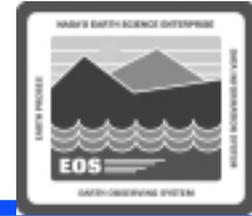
- **Tuning Parameters specified in configuration files (Cont.)**
 - Default and adjusted values vary from site to site
 - Values listed in the table in the text are provided as examples only
 - Refer to the appropriate 920- TDx- 013 Custom Code Configuration Parameters document
 - » Documents are available at URL <http://cmdm.east.hitc.com/baseline/> under “Technical Documents”
 - When making or requesting a change to system parameters, the CM process at the particular site must be followed (if applicable)

Modifying System Parameters in Configuration Files



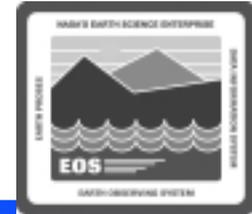
- **Procedure**
 - Access the command shell
 - Set the **DISPLAY** environmental variable
 - Log in to the Ingest Server host using secure shell
 - Change directory to the directory containing the applicable **.CFG** file
 - Use the vi editor to find the parameter to be changed and replace the existing value with the desired value
 - Save the edited file

Modifying System Parameters in Configuration Files (Cont.)



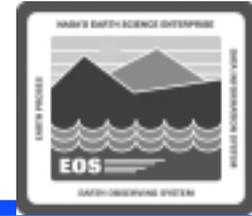
- **When the value assigned to a parameter in a configuration file has been changed and saved, the modified value does not take effect until the affected server has been restarted**
- **Example**
 - **Debug level for the Request Manager log has been changed from “2” to “3” in the Request Manager configuration file**
 - **Modification does not affect the recording of data in the log until after a warm restart of the Request Manager (at which time the server would read the configuration file)**

Modifying System Parameters in the Ingest Database



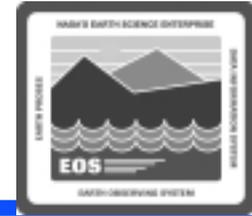
- **When making or requesting a change to system parameters, the CM process at the particular site must be followed (if applicable)**
- **Configuring the Granule Server Listen Threads**
 - **TotalGranuleThreshold column in the InGranuleServerInfo database table multiplied by three**
 - **Default value for the TotalGranuleThreshold is currently 40 (not recommended that it be made greater because the Granule Server would grow too large)**
 - **Entries in the InGranuleServerInfo database table must be set manually via SQL commands**

Modifying System Parameters in the Ingest Database (Cont.)



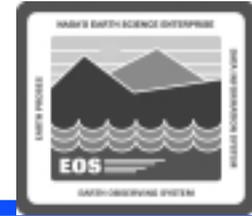
- **Limits on the Number of Queued Requests and Ingest Volume**
 - **Maximum number of requests**
 - » **MaximumTotalRequests** column in the **InSystemParameters** database table
 - » **Use the Ingest GUI to modify**
 - **Maximum volume that can be processed by Ingest at one time**
 - » **MaximumTotalVolume** column in the **InSystemParameters** database table
 - » **Use the Ingest GUI to modify**

Modifying System Parameters in the Ingest Database (Cont.)



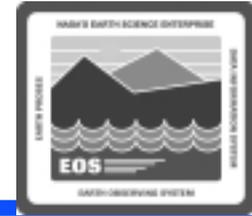
- **Limits on the Number of Requests and Data Volume from a Data Provider**
 - **Maximum number of requests for a data provider**
 - » **MaximumRequests** column in the **InExternalDataProviderInfo** database table
 - » **Use the Ingest GUI to modify**
 - **Maximum data volume for a data provider**
 - » **VolumeThreshold** column in the **InExternalDataProviderInfo** database table
 - » **Use the Ingest GUI to modify**

Modifying System Parameters in the Ingest Database (Cont.)



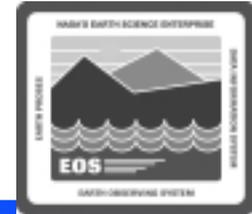
- **Other Key Parameters for Ingest**
 - **MonitorTimeForCompletedRequest** in the **InSystemParameters** database table
 - » Specifies the number of minutes after the request has been completed that a request remains in the database tables that get displayed on the Ingest Monitor and Control GUI window
 - » Use the Ingest GUI to modify
 - **ScreenUpdateInterval** parameter in the **InSystemParameters** table
 - » Specifies the number of seconds after which the GUI refreshes
 - » Use the Ingest GUI to modify

Modifying System Parameters in the Ingest Database (Cont.)



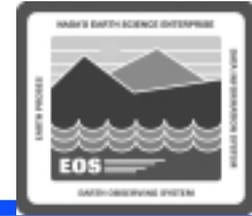
- **Other Key Parameters for Ingest (Cont.)**
 - **CommunicationRetryCount in the InSystemParameters table**
 - » Specifies a number of attempts to send a DDN to the Landsat7 Gateway
 - » Use the Ingest GUI to modify
 - **CommunicationRetryInterval in the InSystemParameters table**
 - » Number of seconds between attempts to retry sending a DDN to the Landsat7Gateway
 - » Use the Ingest GUI to modify

Modifying System Parameters in the Ingest Database (Cont.)



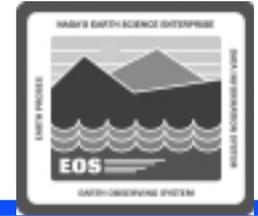
- **Other Key Parameters for Ingest (Cont.)**
 - **Number of granule servers at a DAAC**
 - » **Multiple granule servers can be configured**
 - » **Each granule server needs a row in the InGranuleServerInfo and InValGranuleServerUR tables**
 - » **For a particular ESDT to be processed by a particular granule server, the GranuleServerURKey must be set to the appropriate granule server in the InDataTypeTemplate table for the data type**
 - » **Entries in the database tables must be set manually via SQL commands**

Modifying System Parameters in the Ingest Database (Cont.)



- **Procedure**
 - Access the command shell
 - Log in to the Ingest Server using secure shell
 - Log in to the appropriate Ingest database using isql commands
 - Check the current contents of the relevant column/table
 - Update the relevant column/table with the new value(s)
 - Check the current contents of the relevant column/table
 - Exit from isql

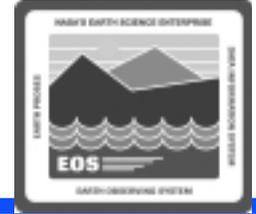
Troubleshooting Ingest Problems



- **Troubleshooting:**

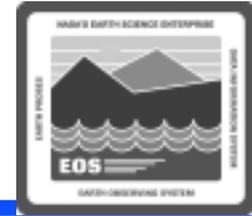
**process of identifying the source of problems
on the basis of observed trouble symptoms**

Troubleshooting Ingest Problems (Cont.)



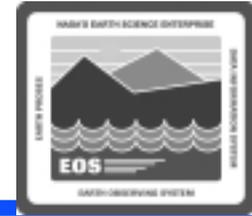
- **Problems with ingest can usually be traced to...**
 - **some part of the Ingest Subsystem**
 - **problems in other ECS subsystems, including (but not necessarily limited to):**
 - » **Data Server Subsystem (DSS)**
 - » **Interoperability Subsystem (IOS)**
 - » **Communications Subsystem (CSS)**
 - » **System Management Subsystem (MSS)**
 - **mistakes in the delivery records furnished by external data providers**
 - **errors in transmission of the data from external data providers**

Troubleshooting Ingest Problems (Cont.)



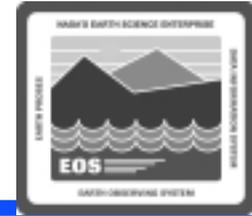
- **Troubleshooting table**
 - describes actions to be taken in response to some common ingest problems
 - if the problem cannot be identified and fixed without help within a reasonable period of time, call the help desk and submit a trouble ticket in accordance with site Problem Management policy

Troubleshooting Ingest Problems (Cont.)



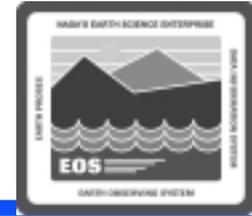
Symptom	Response
Unable to log in to any host (e.g., Operations Workstation, g0acs02).	Check with the Operations Controller/System Administrator to ensure that the host is "up."
GUI not displayed when the start-up script has been properly invoked.	Ensure that the DISPLAY variable was set properly. [For detailed instructions refer to the procedure for Launching the Ingest GUI (previous section of this lesson).]
Error message associated with the Ingest GUI.	Refer to Table 3, Ingest Operator GUI User Messages (adapted from the corresponding table in 609-CD-510-002, <i>Release 5B Operations Tools Manual for the ECS Project</i>).
Message received indicating a data ingest failure.	<ol style="list-style-type: none"> 1. Ensure (e.g., using ECS Assistant) that the necessary hosts and servers (listed in Table 4) are "up." 2. If hosts/servers have gone down, notify the Operations Controller/System Administrator to have servers brought back up using HP OpenView. 3. If hosts/servers are all "up," refer to the procedure for Recovering from a Data Ingest Failure (subsequent section of this lesson).
Other problems.	Check the log files (e.g., EcInReqMgr.ALOG, EcInAuto.ALOG, EcInPolling.ALOG, EcInGran.ALOG, EcInGUI.ALOG) in the /usr/ecs/MODE/CUSTOM/logs directory of the relevant host(s) for error messages. [For detailed instructions refer to the procedure for Checking Log Files (subsequent section of this lesson).]

Troubleshooting Ingest Problems (Cont.)



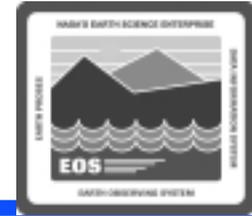
- **Recovery from a data ingest failure**
 - **Operator intervention required when there is an ingest fault, or error (e.g., invalid DAN/PDR)**
 - **System responses to Ingest fault (error)**
 - » **processing of the ingest request stops**
 - » **message is sent to the Ingest/Distribution Technician and the data provider with a brief description of the problem**
 - **Ingest/Distribution Technician may use several sources for troubleshooting information**
 - » **Ingest GUI Monitor/Control screen**
 - » **Ingest History Log**
 - » **Ingest log files**

Troubleshooting Ingest Problems (Cont.)



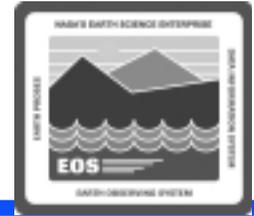
- **Procedure (Troubleshooting a Data Ingest Failure)**
 - Identify the faulty ingest request
 - Review the information concerning the faulty ingest request
 - Perform the appropriate recovery procedure depending on the nature of the problem

Troubleshooting Ingest Problems (Cont.)



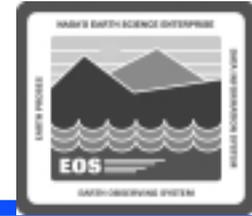
- **Procedure (Recovering from a Faulty DAN/PDR)**
 - **Contact the data provider**
 - » **Report the ingest failure**
 - » **Discuss what has been discovered from reviewing the failure event data**
 - » **Determine whether the data provider will re-initiate the data ingest request with a new DAN/PDR**
 - **If the data ingest request is to be re-initiated, monitor the subsequent ingest**

Troubleshooting Ingest Problems (Cont.)



- **Other ingest failures for operator intervention**
 - Volume threshold exceeded
 - Maximum number of concurrent requests exceeded
 - Insufficient disk space
 - Expiration date/time period exceeded
 - ftp error
 - Processing error
 - » Missing Required Metadata
 - » Unknown Data Type
 - » Template Out of Synchronization (Sync)
 - » Unavailable File Type
 - » Metadata Validation Error
 - » Missing Optional Data Files
 - D3 ingest failure

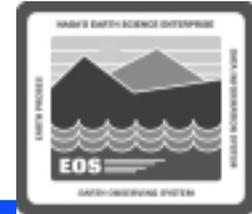
Troubleshooting Ingest Problems (Cont.)



- **Checking Log Files**

- Log files can provide indications of the following types of problems:
 - » DCE problems
 - » Database problems
 - » Lack of disk space

Troubleshooting Ingest Problems (Cont.)



- **Procedure (Checking Log Files)**
 - Access a terminal window logged in to the appropriate host
 - Change directory to the directory containing the ingest log files
 - » `/usr/ecs/MODE/CUSTOM/logs`
 - Review log file to identify problems
 - » `EclnGUI.ALOG`
 - » `EclnReqMgr.ALOG`
 - » `EclnAuto.ALOG`
 - » `EclnPolling.ALOG`
 - » `EclnGran.ALOG`
 - Respond to problems