

AIRCRAFT SCANNER DATA AVAILABILITY VIA THE VERSION 0 INFORMATION MANAGEMENT SYSTEM

G. R. Mah
Hughes STX
Land Processes Distributed Active Archive Center
USGS EROS Data Center, Sioux Falls, SD 57198

1. Introduction

As part of the Earth Observing System Data and Information System (EOSDIS) development, NASA and other government agencies have developed an operational prototype of the Information Management System (IMS). The IMS provides access to the data archived at the Distributed Active Archive Centers (DAAC's) that allows users to search through metadata describing the [image] data. Criteria based on sensor name or type, date and time, and geographic location are used to search the archive. Graphical representations of coverage and browse images are available to further refine a user's selection.

Previously, the EROS Data Center (EDC) DAAC had identified the Advanced Solid-state Array Spectrometer (ASAS), Airborne Visible and infrared Imaging Spectrometer (AVIRIS), NS-001, and Thermal Infrared Multispectral Scanner (TIMS) as precursor data sets similar to those the DAAC will handle in the Earth Observing System era. Currently, the EDC DAAC staff, in cooperation with NASA, has transcribed TIMS, NS-001, and Thematic Mapper Simulator (TMS) data from Ames Research Center and also TIMS data from Stennis Space Center. During the transcription process, the IMS metadata and browse images were created to populate the inventory at the EDC DAAC. These data sets are now available in the IMS and may be requested from the any of the DAAC's via the IMS.

2. Overview of the IMS

The IMS is a distributed client-server application, which accesses the metadata stored at each of the DAAC's in response to search criteria entered by the user into a common user interface. Both graphical and character user interfaces are provided by the system. The graphical user interface is based on the X-windows standard and runs on many variants of UNIX.

The IMS acts as an overlay to the native data base systems at each of the DAAC's. In response to user-defined criteria, the IMS generates queries internally and converts them using a translation layer into a form that is compatible with the native data base system. The response(s) to the query(s) are then translated back for display by the IMS user interface. Graphical coverage map representations generated by the IMS and browse images, where available, can be displayed.

3. Operational Scenario

To use the IMS, a user logs onto the system via TELNET or MOSAIC. The system supports registration to allow a user to save search criteria and results and preference profiles. The first screen that appears is the user registration screen (fig. 1). If previously registered, a user signs on using a password, otherwise guest access is provided or a new user can register. A registered user can save preferences and searches, whereas guest access only allows runtime access to the IMS.

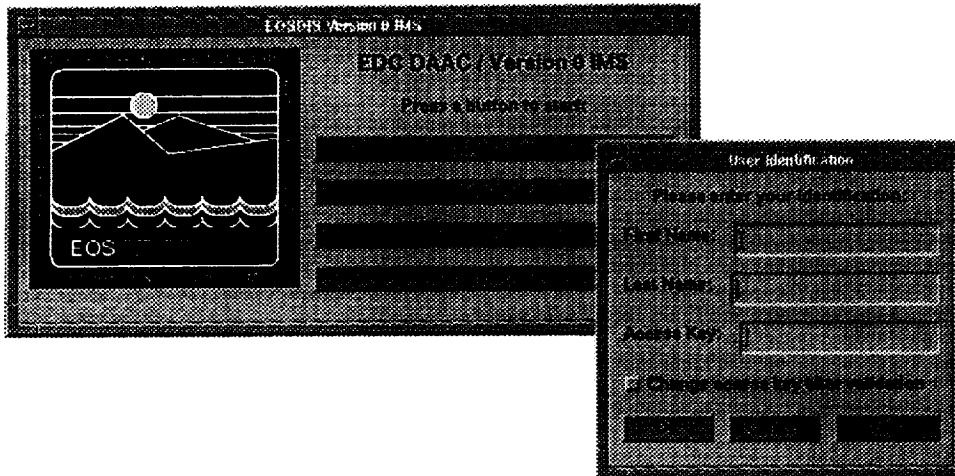


Figure 1. Welcome and Registration Screens.

After logging onto the system, a welcome screen describes the system and displays any recent updates or changes to the system. A user can then move to the search screen seen (fig. 2). The search screen lets a user define criteria for queries on DAAC data bases. Multiple data bases at multiple DAAC's can be searched simultaneously to locate coincident data sets. Geographic search criteria can be defined by entering coordinates or via polygon definition on a map.

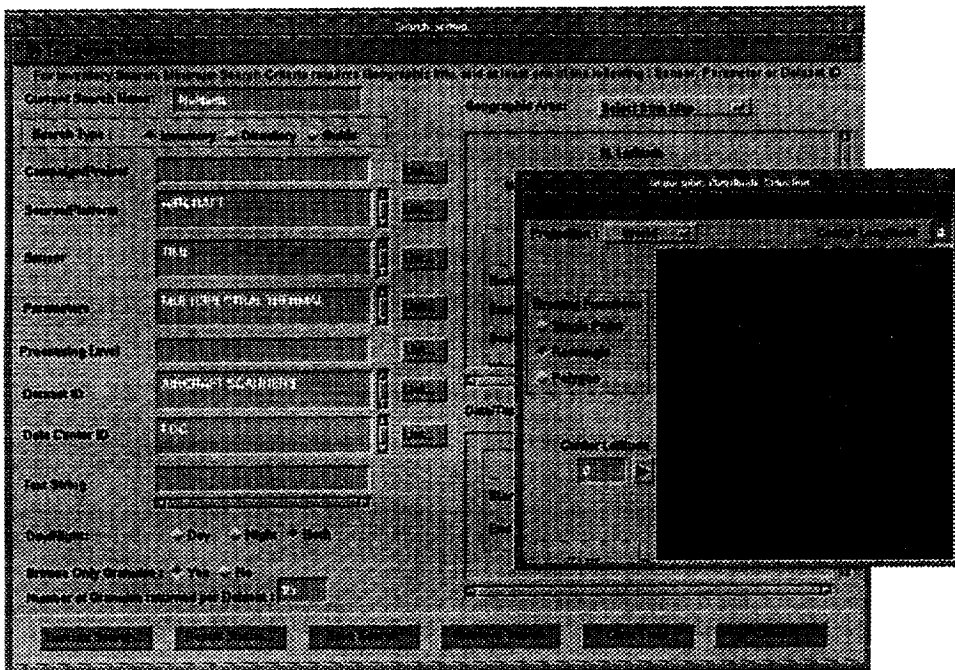


Figure 2. Search Screen showing Graphical Coordinate Selection.

When a search criteria is defined, the system searches the DAAC's specified and returns any results matching the search criteria. A communications screen is displayed whenever the IMS accesses a remote data base. The results are displayed in the results screen (fig. 3). Further detail is available in the form of more detailed metadata, a coverage map, or a browse image. Examples of a coverage map and a browse image are shown in figure 4.

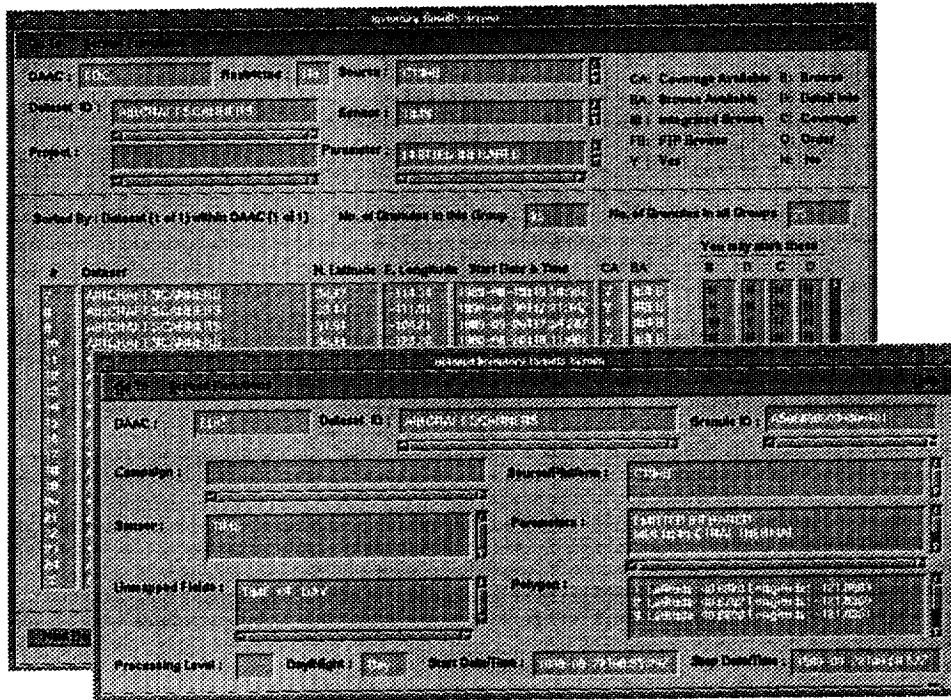


Figure 3. Results Screen.

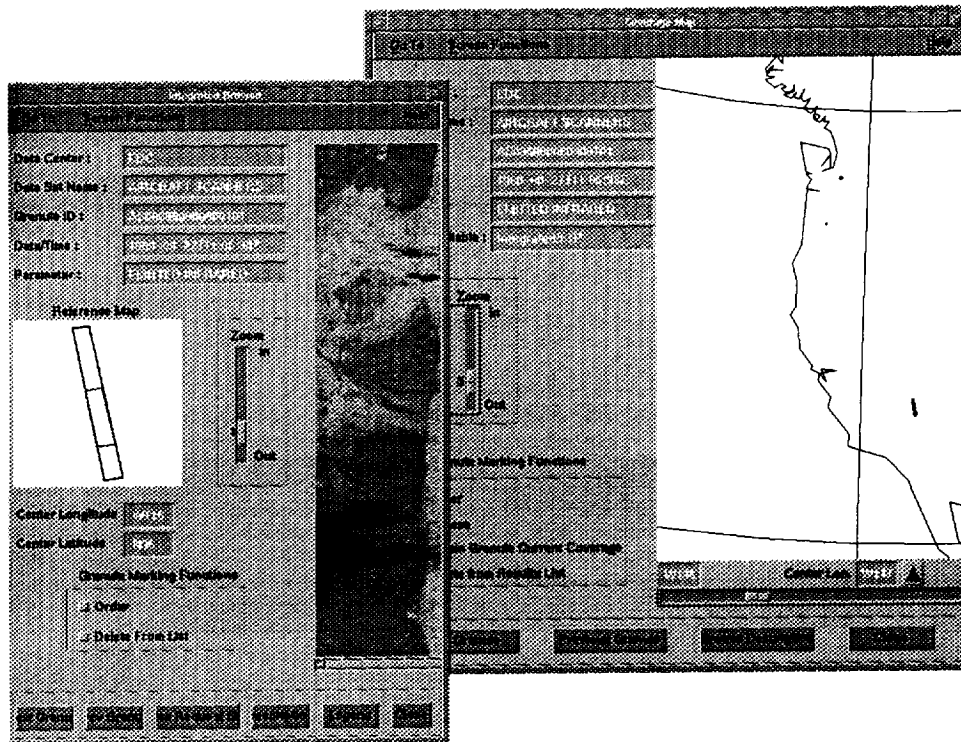


Figure 4. Browse and Coverage Map.

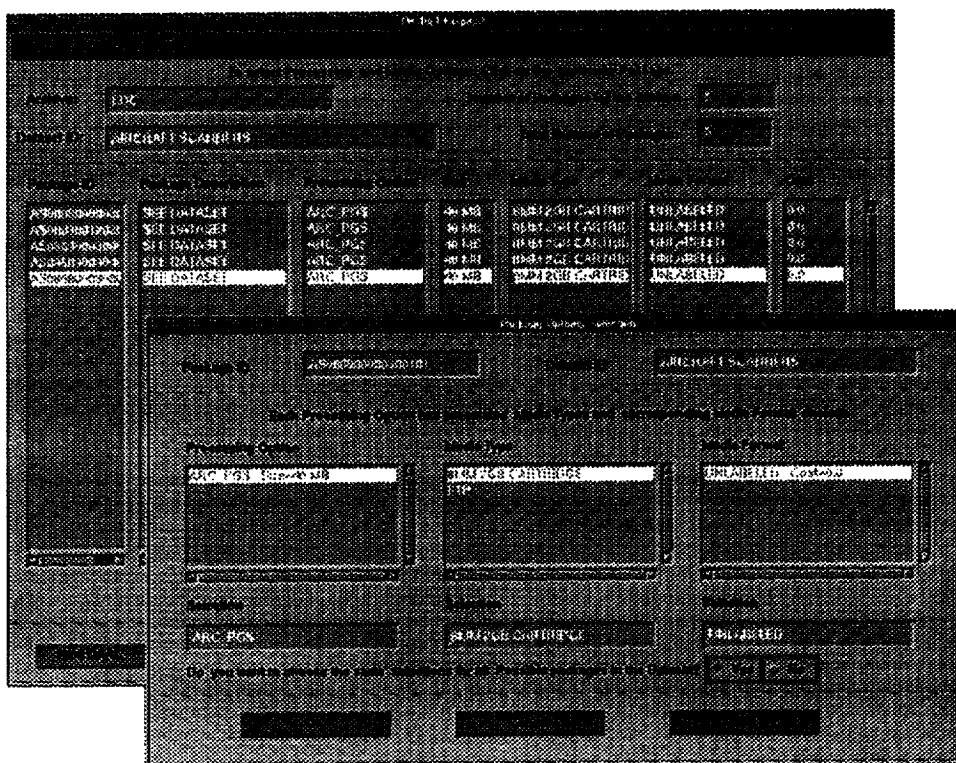


Figure 5. Order Screen.

When a user determines which of the data granules to obtain, the user flags the data in the results screen and moves to the order screen (fig. 5). The order screen asks a user to define the format and packaging of the data granule(s) and where to send the data. FTP or various tape media are available options. When a user submits a request, the IMS passes the order to user services personnel at the appropriate DAAC. The user services personnel will contact the user directly and make arrangements for data delivery.

4. Access to the IMS

Local access to the IMS is available at each of the DAAC's. Remote access is also available via TELNET. The current version of the IMS uses local clients running at the DAAC's rather than on the local machines, so performance is somewhat reduced from a true client-server application. Future upgrades of the IMS will run the client locally, with access to the servers at the DAAC's for data base queries and searches, thus improving overall system performance. Access to the IMS is generally available from the MOSAIC home pages maintained by each DAAC or at the EDC DAAC via TELNET:

eosims.cr.usgs.gov 12345

or via MOSAIC at:

<http://edcwww.cr.usgs.gov/landdaac/landdaac.html>

5. Future Plans

In fiscal year 1995, the EDC DAAC plans to ingest recent AVIRIS and ASAS data into the IMS. The inventories at the DAAC will be supported by appropriate product generation systems and each data set will have metadata and browse images similar to that of the TMS or NS-001.