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EOSDIS Core System Project

Science User's Guide and Operations Procedures Handbook (Release B.0) for the ECS Project

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August 1997

Hughes Information Technology Systems
Upper Marlboro, Maryland

Science User's Guide and Operations Procedures Handbook (Release B.0) for the ECS Project

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SUBMITTED BY

Robert Dumais /s/	8/27/97
Robert Dumais, ECS Project Manager EOSDIS Core System Project	Date

Hughes Information Technology Systems
Upper Marlboro, Maryland

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Preface

This document is a formal contract deliverable with an approval code 1. It requires Government review and approval prior to acceptance and use. This document is under ECS contractor configuration control. Once this document is approved, Contractor approved changes are handled in accordance with Class I and Class II change control requirements described in the EOS Configuration Management Plan, and changes to this document shall be made by document change notice (DCN) or by complete revision.

Any questions should be addressed to:

Data Management Office
The ECS Project Office
Hughes Information Technology Systems
1616 McCormick Drive
Upper Marlboro, Maryland 20774-5372

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Abstract

This *Science User's Guide and Operations Procedures Handbook (Release B.0)* provides description for using a number of X-based graphical tools that allow you to request, search for, retrieve, browse, and view data. It also includes a directory service, the Earth Science Online Directory (ESOD), with a World Wide Web interface that enables you to perform many of these functions as well as advertise data collections you may wish to provide.

Keywords: *B0SOT, EOSView, ESOD, Desktop, DAR*

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1. Introduction

1.1 Identification

This document responds to DID 205, providing a user's guide for client software.

1.2 Scope

This guide described the tools delivered with Release B.0, Version 1. They are EOSView, the B0 Search and Order Tool (B0SOT), the Earth Science Online Directory (ESOD), the Data Acquisition Request (DAR) Tool, and the Desktop.

1.3 Purpose

This guide is intended to provided description of the delivered tools at a level of detail suitable for science users.

1.4 Status and Schedule

The document will be available online by August 29, 1997.

1.5 Organization

The document is organized as follows:

- Section 1 Introduction
- Section 2 Related Documentation
- Section 3 Getting Started: What is ECS?
- Section 4 Finding and Retrieving Data Using the Release B.0 Client
- Section 5 Command and Key Definitions/Descriptions
- Section 6 Putting It All Together: Tutorial and Scenarios
- Section 7 Frequently Asked Questions (FAQ)
- Abbreviations and Acronyms

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2. Related Documentation

2.1 Parent Documents

The parent document is the document from which *this Science User's Guide and Operations Procedures Handbook (Release B.0)* scope and content are derived.

423-41-01 ECS Statement of Work

2.2 Applicable Documents

No documents were referenced within this *Science User's Guide and Operations Procedures Handbook (Release B.0)* or that are directly applicable, or contain policies or other directive matters that are binding upon the content of this volume.

2.3 Information Documents

2.3.1 Information Documents Referenced

The following document is referenced herein and, amplify or clarify the information presented in this document. The document is not binding on the content of the *ECS Science User's Guide and Operations Procedures Handbook (Release B.0).*

IMS Version 0 Search and Order Tool User's Guide at

http://www-v0ims.gsfc.nasa.gov/v0ims/users_guide_6/Cover-TOC.html

2.3.2 Information Documents Not Referenced

No known information documents not referenced herein and/or not directly applicable, amplify or clarify the information presented in this document.

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3. Getting Started

Mission to Planet Earth is a long-term, multi- and inter-disciplinary NASA research mission to study the processes leading to global climate change, and to develop a predictive capability for the Earth system on time scales of decades to centuries.

The Earth Observing System (EOS) is the centerpiece of NASA's Mission to Planet Earth. EOS collects Earth science data, with emphasis on long-term, sustained data sets from carefully calibrated instruments on satellites in low Earth orbit.

The EOS Data and Information System (EOSDIS) is an open, distributed information system that manages the data and information from a variety of pre-EOS and EOS-era Earth observation satellites, data from related Earth science field measurement programs, and other data essential for the interpretation of these measurements. EOSDIS provides end-to-end services from EOS instrument data collection, to science data processing, to full access to EOS and other Earth science data holdings.

The EOSDIS Core System (ECS) provides a broad range of desktop services to allow users to find and use data and associated services distributed from science data centers, the Distributed Active Archive Centers (DAACs), as well as other external contributors. External contributors include international partners and cooperating data centers. ECS will control the EOS spacecraft and instruments, process data from the EOS instruments, and manage and distribute EOS data products and other selected data sets. ECS promotes exchange of data and research results within the science community, across multiple agencies, and internationally.

3.1 EOSDIS Tool System Requirements and Limitations

The ECS Desktop and many ECS tools are X-based graphical interfaces. Therefore, they must run in X-environments. The ECS Desktop is available for the following UNIX platforms and system configurations:

The EOSDIS Release B.0 Desktop requires the following:

Sun OS 5.5.1 - 32 Mbytes of RAM

Information on the system requirements and configuration of individual tools included with the Desktop are listed below:

Desktop:

- 24M RAM for DAAC User Version
- 5M RAM for the Science User Version

works on:

- Sun - OS 5.5.1
- windowing system: Motif 1.2.3

EOSView:

10M RAM

works on:

- Sun - Solaris 2.3/2.4/2.5
- IBM - AIX 3.2.5
- HP - HPUX 9.05
- SGI - IRIX 5.3
- DEC - OSF/1 v3.2
- windowing manager: Motif 1.2

B0SOT:

15M RAM

works on:

- machines running X windows system
- 1024 x 768 resolution screen

DAR Tool:

24M RAM

works on:

- the DAAC User version of the Desktop

Note: Macintosh and other PC platforms do not support EOSDIS X/Motif tools.

3.2 Help Desk Services

For assistance using the Release B.0 Client, please contact any of the Distributed Active Archive Center (DAAC) User Services Offices.

Alaska Synthetic Aperture Radar (SAR) Facility - (ASF) DAAC

Discipline: polar processes imagery, sea ice, SAR products

ASF DAAC User Services

Alaska SAR Facility

University of Alaska

PO Box 757320

Fairbanks, AK 99775-7320

907-474-6166 voice

907-474-5195 fax

Internet: asf@eos.nasa.gov

WWW: http://www.asf.alaska.edu

EROS Data Center - (EDC) DAAC

Discipline: land processes imagery

EDC DAAC User Services

US Geological Survey

EROS Data Center

Sioux Falls, SD 57198

605-594-6116 voice

605-594-6589 fax

Internet: edc@eos.nasa.gov

WWW: http://sun1.cr.usgs.gov/landdaac/landdaac.html

Goddard Space Flight Center - (GSFC) DAAC

Discipline: upper atmosphere, global biosphere, atmospheric dynamics, geophysics

Goddard DAAC User Services

NASA Goddard Space Flight Center

Code 902.2

Greenbelt, MD 20771

301-286-3209 voice

301-286-0268 fax

Internet: gsfc@eos.nasa.gov

WWW: http://daac.gsfc.nasa.gov/DAAC_DOCS/gdaac_home.html

Jet Propulsion Laboratory - (JPL) DAAC

Discipline: physical oceanography, ocean circulation, air-sea interaction

JPL DAAC User Services

Jet Propulsion Laboratory

Mail Stop 300-320

4800 Oak Grove Drive

Pasadena, CA 91109

818-354-9890 voice

818-393-2718 fax

Internet: jpl@eos.nasa.gov

WWW: http://podaac-www.jpl.nasa.gov/

Langley Research Center - (LaRC) DAAC

Discipline: radiation budget, tropospheric chemistry, clouds, aerosols

Langley DAAC User Services

NASA Langley Research Center

Mail Stop 157B

Hampton, VA 23681-0001

804-864-8656 voice

804-864-8807 fax

Internet: larc@eos.nasa.gov

WWW: http://eosweb.larc.nasa.gov/hpdocs.html

National Snow and Ice Data Center - (NSIDC) DAAC

Discipline: snow and ice, cryosphere, climate

NSIDC DAAC User Services

National Snow and Ice Data Center

CIRES, Campus Box 449

University of Colorado

Boulder, CO 80309-0449

303-492-6199 voice

303-492-2468 fax

Internet: nsidc@eos.nasa.gov

WWW: http://www.nsidc.colorado.edu/NASA/GUIDE/index.html

Oak Ridge National Laboratory - (ORNL) DAAC

Discipline: biogeochemical dynamics

ORNL DAAC User Services Office

Oak Ridge National Laboratory

PO Box 2008, Mail Stop 6407

Oak Ridge, TN 37831-6490

615-241-3952 voice

615-574-4665 fax

Internet: ornl@eos.nasa.gov

WWW: http://www-eosdis.ornl.gov/

3.3 About This Document

This manual was written specifically for the Release B.0 Client running on a UNIX machine in an X-environment. Netscape Version 2 was used to access the Release B.0 Client Web-based tools. Though every effort was made to adapt instructions for general use on multiple platforms using multiple browsers, some instructions and/or screen captures may vary slightly from platform to platform. Any suggestions for improving this manual should be sent to the author at the following address:

Karen McDaniel
Hughes Information Technology Systems
1616 McCormick Drive
Upper Marlboro, MD 20774-5372
Phone: (301)925-0799
FAX: (301)925-0321
Internet: kmcdanie@eos.hitc.com

Questions that remain after reading this manual should be referred to the nearest DAAC User Services Office.

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4. Finding and Retrieving Data Using the Release B.0 Client

Release B.0 provides a number of tools allowing a broad community of users to access, retrieve, and browse Earth Science data conveniently and efficiently. A brief description of the major elements of the release follows:

Desktop

The Desktop is a framework for organizing tools and data. Tools are represented by icons to start the B.0 Search and Order Tool, (B0SOT) Earth Science Online Directory (ESOD), and the EOSView image display tool, as well as access the ECS Data Handling System (EDHS). The size and arrangement of icons on the Desktop can be configured to fit individual preferences by using the Desktop's User Preferences option.

B0 Search and Order Tool (B0SOT)

The B0SOT is the main search and order tool for the initial ECS release and provides a consistent view of data sets from ECS, Version 0 heritage centers and the Version 0 cooperating data centers. It allows users to search science data holdings, retrieve high-level and detailed descriptions of datasets, view geographical coverage and representative browse images, and place orders for data.

V0 WWW Gateway

The EOSDIS V0 Web Gateway system provides single Web interface provides search and order tools for accessing a wide variety of global Earth science data and information held at many different NASA, NOAA, and international data centers. It is the only way to access Tropical Rainfall Measuring Mission (TRMM) data as well as International Partner data. These free services allow easy access to both summary and detailed data product descriptions, as well as browse images and fully processed science data. For more information or to initiate a search, go to http://harp.gsfc.nasa.gov/~imswww/pub/imswelcome/.

Earth Science Online Directory (ESOD)

ESOD is a Web-based searchable index that enables users to submit and to search advertisements related to Earth Science services, providers, and data. Advertisements provide relevant contact, copyright, and cost information and also direct hyperlinks to advertised data, tools, and services.

Data Acquisition Request (DAR) Tool

The Data Acquisition Request (DAR) tool is for use by authorized users only. It provides an X-based graphical user interface (GUI) for requesting future acquisition of data from the Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) instrument.

EOSView

EOSView is a data visualization tool that displays Hierarchical Data Format (HDF) files. It can be used to view data that had been ordered from EOSDIS. In addition, it provides a secondary mechanism for previewing browse files before order (the primary mechanism is integrated browse which is part of the various search and order tools).

4.1 Getting and Installing the Release B.0 Science UserSoftware Remotely

4.2 Getting and Installing the Release B.0 Client Software Locally

4.3 Using the Release B.0 Tools

The sections that follow include detailed instructions and representative screen captures intended to guide you through the best use of the tools as well as provide reference material that you may need from time to time.

- Logging Into the ECS Desktop
- Using the ECS Desktop
- B0 Search and Order Tool
- Browsing Data Using EOSView
- Earth Science Online Directory
- Data Acquisition Request Tool

4.4 Logging Into the ECS the Desktop

What is the Desktop?

The Desktop provides a convenient way to organize EOSDIS tools and data. It provides a secure environment and allows users to configure it to individual preferences by using the Desktop's User Preferences option.

Local log in

If you have access to a Unix machine and an account, log in with your Unix ID and password. If you have the ECS client software downloaded onto that machine, you will be able to bring up the ECS Desktop locally and use ECS services after entering your ECS User ID and password.

Remote log in

You can run the ECS client software remotely if you do not have the tools downloaded locally. To log into your local Unix account and run ECS client software remotely, follow the same procedure stated above to log into a local Unix machine. First, identify which machine (remote_machine_name) has the tools installed and make sure you have a Unix account on that machine.

Then,

1. Connect to remote machine - telnet (remote_machine_name)
2. You will be prompted for userId and password for that machine. After login, to allow the X client/server communication - setenv DISPLAY (local_machine_name or xterm_ip):0.0
3. You can use the command set up by the system administrator to run ECS client software (i.e., desktop) Quick List of Features

Use the following commands to achieve the resulting actions as indicated in the table below. For example, click on File (use the left mouse to click unless otherwise indicated) to bring up Create Directory; then type in the directory name in the window provided and click OK.

Table 4-1. Quick List of Actions and Commands

Action	Command
To create a directory	File > Create Directory
To go to your home directory	File > Create Directory
To go up just one directory	File > Go Up
To open applications	Selected > Open
To open an additional window	Selected > Open New Window
To close the display window of the last directory you visited; also to close a duplicate window	File > Close Window
To move or rename a highlighted application or directory	Selected > Move To
To make another copy of an application or directory	Selected > Copy To
To delete an application or directory	Selected > Delete
To restore only the last object you deleted	Selected > Undelete
To open a duplicate Desktop display window	View > Duplicate Window
To refresh your display	Desktop View > Refresh
To access the Web-based searchable technical document server	Tools > ECS Data Handling System (EDHS)
To exit the Desktop	File > Exit

4.5 Using the ECS the Desktop

Following is a detailed description of the functions

Creating a Directory

To create a directory on the Desktop,

1. Click File > Create Directory menu bar item.
2. A dialog box will appear asking you to name the directory.
3. Type in the name of the directory (e.g., test) you wish to create and hit Return or use the mouse to click OK.

Maneuvering Around the Desktop

1. To go to your home directory, click File > Create Directory menu bar option or hit Ctrl + H.
2. To go up just one directory, click File > Go Up menu bar option or hit Ctrl + U.
3. To return to a directory that you have left or to move to a directory that is in your Desktop display, double click on the icon for the directory to which you want to go. Or, you can click once on the appropriate directory to highlight it and then choose one of the Selected > Open menu bar options. If you choose the Selected > Open New Window menu bar option and you want to close the Desktop display window of the last directory you visited, highlight the File > Close Window menu bar option.
4. The Selected > Open menu bar option is for opening applications only. It will be grayed out if you try to open anything else--like a directory. To open an application (e.g., ESOD), either double click on its icon or click once on the icon and choose the Selected > Open menu bar option.
5. Any menu bar options that are not valid choices will be grayed out. (e.g., If you don't have any Desktop items highlighted, all of the Selected pull down menu bar options will be grayed out.)

Moving, Copying, and Deleting

1. To move or rename an application or directory, click once on its icon (e.g., test) to highlight it and then choose the Selected > Move To menu bar option. A dialog box will appear asking you where you want to move the item. Click on the text entry part of the box to activate it and click the OK button when you have finished to move or rename an application or directory. Click the Cancel button instead of the OK button if you don't want the changes to take effect. If you just type in a name without specifying a directory (e.g., test1), the highlighted application or directory will be renamed in your current Desktop display. If you type in a directory specification followed by the name of the file (e.g., /home/username/test1), the test directory you created above will be moved to the specified directory and renamed test1.

2. To make another copy of an application or directory, choose the Selected > Copy To menu bar item. A dialog box will appear asking you to choose a destination folder and a name for the copied item. Click on the text entry boxes to type in the destination and name. Click the OK button for the changes to take effect or the Cancel button to return to the Desktop without making any changes.

3. To delete an application or directory, click once on its icon to highlight it and then choose the Selected > Delete menu bar option. A dialog box will appear asking you to confirm the deletion. Click the OK button if everything looks correct or click the Cancel button if you decide not to delete the file.

**To restore only the last object you deleted, highlight the Selected > Undelete menu bar item. If you have made several deletions, you can only restore the last object you deleted.

Opening a Duplicate Window

1. If you'd like to open a duplicate Desktop display window, choose the View > Duplicate Window menu bar option. Any changes you make to this duplicate window will also be made to the original Desktop window. To close the duplicate window, click File > Close Window menu bar item.

Setting Your User Preferences

1. The icon display on the Desktop can be altered by selecting the View > User Preferences menu bar item. Icons can be displayed in any one of four sizes in either iconic format, which is the default display preference, or in hierarchical format. To choose an icon size, select either one of four sizes: tiny, small, medium (default), or large. Click the Apply button to see how your Desktop display changes. In the iconic format, all files and applications are displayed as icons with text labels underneath each icon on the Desktop. In the hierarchical format, files and applications are displayed alphabetically and left-justified with text labels to the right of each icon. To see how your Desktop display changes, click the Apply button.

2. The User Preferences Desktop tool also allows you to specify how you would like to open your directories. Directories can be opened in place, which is the default display preference, or in a new window. Opening directories in place allows your current Desktop window to be superseded by the window displaying the contents of the newly opened directory. To return to your previous directory, find the icon of the directory on your desktop, and double click on it. Opening directories in a new window allows you to see the Desktop displays of multiple directories simultaneously. When you want to return to your previous directory, just close the current directory by selecting the File > Close Window menu bar option. If you do not specify a preference in the User Preferences tool for opening directories, you can always choose how a directory or application will be opened using the Selected menu bar option. This menu bar option provides the same choices for opening directories as does the user Preferences tool.

3. To save your Desktop display preferences, click the Save button and then click the OK button. To return to the default Desktop display options at any time, click on the User Preferences Defaults button and then click OK.

Refreshing Your Desktop

1. Sometimes your Desktop display may need to be refreshed. To refresh your display, click Desktop View > Refresh menu bar item. The Desktop icons will disappear briefly and reappear aligned according the User Preferences you selected.

Exiting the Desktop

1. To exit the Desktop, click File > Exit menu bar item or hit Ctrl + Q.

4.6 B.0 Search and Order Tool (B0SOT)

4.6.1 Introduction

This is a guide to new users of the B0 Search and Order Tool (B0SOT). It also functions as a reference manual for more experienced users. It contains the necessary information for accessing and running B0SOT, including

- An introductory high level description of the system
- The system overview
- Access procedures for both the graphical user interface and the World Wide Web versions of the system
- A list of commonly asked questions and their answers
- Important points of contact for resolving difficulties

You are then provided a more detailed description of the functionality of the system. and additional helpful information, including science scenarios, and command definitions.

4.6.2 System Description

4.6.2.1 General Overview of B0SOT

The B0SOT is a cooperative effort among various archives around the country and the Goddard Space Flight Center (GSFC) Earth Science Data Information System (ESDIS) project. This system allows you to search for and order data from several data centers in a single session. B0SOT will facilitate Earth science research through improved access to existing data and serve as a prototyping testbed for the EOSDIS Core System (ECS). B0SOT is being used as the main search and order tool for the initial ECS release. The ECS is being built to accommodate the huge amounts of data expected from the EOS instruments to be launched beginning in 1998. B0SOT provides a consistent view of data sets held at ESDIS data centers, allowing users without specific prior knowledge of the data to search science data holdings, retrieve high-level descriptions of data sets and detailed descriptions of the data inventory, view browse images, and place orders for data.

User Interfaces

The system is accessible over the Internet, with a graphical user interface. It supports data search and order, directory searches, guide information, and browse images. A World Wide Web (WWW) version has also been developed to provide easier access to the data holdings.

Graphical User Interface

The Graphical User Interface (GUI) is a graphical environment that operates under the X-Window system, allowing you to display multiple windows simultaneously, and it supports a mouse for easy user interaction. It also allows search areas to be specified from a global map and provides an interactive data browse facility and coverage map of data products. This interface requires Internet access to function properly.

To run the GUI, the hardware display device must be able to run the X-Windows System and communicate over the Internet. The software targets a 1024 x 768 resolution screen. The minimum number of supported color planes is eight, and monochrome monitors are not supported. A standard X-terminal can be used, as well as any personal computer with a compatible X server or emulator.

WWW Interface

The World Wide Web (WWW) interface is a web-based version of the B0SOT. It is available at the following URL: http://eos.nasa.gov/imswelcome

4.6.2.2 System Overview

This section contains brief information to quickly get you started. It includes login instructions, a brief system descriptions, instructions for navigation through the system for both the GUI and WWW versions; a tutorial of the GUI version to lead the new user through the system; answers to commonly asked questions; as well as a contact to handle technical problems or questions.

4.6.2.2.1 Graphical User Interface (GUI)

Log-In Instructions

Users may access B0SOT by telnet to any one of the following Internet addresses:

- telnet eosims.asf.alaska .edu 12345 - connects to Alaska SAR Facility
- telnet eosims.cr.usgs.gov 12345 - connects to EROS Data Center
- telnet eosims.msfc.nasa.gov 12345 - connects to Global Hydrology Resource Center
- telnet eosims.gsfc.nasa.gov 12345 - connects to Goddard Space Flight Center
- telnet eosims.jpl.nasa.gov 12345 - connects to Jet Propulsion Laboratory
- telnet eosims.larc.nasa.gov 12345 - connects to Langley Research Center

- telnet eosims.saa.noaa.gov 12345 - connects to NOAA-Satellite Active Archive
- telnet eosims.colorado.edu 12345 - connects to National Snow & Ice Data Center
- telnet eosims.esd.ornl.gov 12345 - connects to Oak Ridge National Laboratory

Note: If you are connecting from a VMS machine the command format is:

- telnet/port=12345 eosims.cr.usgs.gov

where the machine name changes as appropriate.

Follow the instructions on the screen once the connection is made. If the fonts are too large, too small or otherwise incorrect, contact the Data Center USO.

When a new window opens in the GUI, there may be a frame on the screen. Without pressing the mouse buttons, move the mouse to position the frame to a desired location on the screen and click the left mouse button. The "Welcome" screen is the first screen to appear. If you need to reposition the screen, position the cursor on the screen title bar, press the mouse button down, move the screen to the desired location and release the mouse button. To continue, use the mouse to position the cursor, and click on the buttons at the bottom of the screen or select items from the menu bar.

There is a User Profile button on the bottom of the Welcome screen. Enter at least your name, city, country, affiliation and telephone number (and e-mail address, if possible) in the User Profile information. User Profile is also available from the GoTo menu.

When at the Search Screen, use the mouse to position the cursor and select a "Search Type" before proceeding with filling in the search criteria. Inventory is the default.

4.6.2.2.2 Hardware Requirements for the GUI

The hardware display device must be able to run the X Windows System. An Internet connection to B0SOT is necessary to run this system. The software was built to target a 1024 x 768 resolution screen. On lower resolution screens, the image will appear too large, while on higher resolution screens, the image will appear too small. The minimum supported color planes is eight. Monochrome monitors are not supported. If you experience problems while running the client using MacX or X-Vision, contact the USO for assistance. If you experience problems while running the client using another X-Window emulator, try using the WWW version.

4.6.2.2.3 GUI Screen Descriptions

Screens comprise menu bars, fields, dialog boxes, buttons, and windows. Screen layouts of these components follow simple compositional conventions: fields for input and display are labeled, pop-up windows appear at the center of the screen, and buttons are identified at the bottom of the screen. The screen name appears at the top of each screen.

Each screen has three pull down menus (Go To, Screen Functions, and Help) available from the menu bar at the top of the screen. At the bottom of the screen are buttons for commands considered the most commonly used for the current screen. The GoTo and Help pull down menus will always show the same options. However, depending upon the current screen or current selections, some items may be inactive.

Items that are inactive are grayed out, and the system will not allow the cursor to move to these areas. In other words, the system prevents an invalid selection.

Go To menu option is for "going to" other parts of the system (e.g., search screen, Inventory, Directory, Browse, Detailed Information, Coverage Map, Order Data, Status, User Profile, Comments, Welcome, and Exit B0SOT).

Screen Functions menu option is for selecting options applicable to the current screen or function.

Help menu option provides access to help. There are nine types available: Select Item, Screen, Commands, Functions, System, Help, Glossary, Acronym List, and User Services Offices. When using Select Item, the cursor will change to a question mark. Simply place it on the field in question and click. The system will pop up a window containing help for that field.

4.6.2.2.4 Navigating the GUI system

Navigate between screens or out of the system by using menu bar options or buttons. To access or leave the menu bar, use the mouse to position the cursor on the menu bar options and make selections. When you use a multi-button mouse, the left mouse button is for selecting items on the screen. In the menu bar, use the mouse to move to the desired menu window (either "GoTo", "Screen Functions", or "Help"). Buttons (commands most commonly used) are identified at the bottom of each screen.

To navigate between fields within a screen, use the mouse to position the cursor.

Arrow keys can also be used; however, movement is more efficient using the mouse. Use the mouse to position the cursor to make selections within pop-up windows. In listed options (e.g., in a menu bar window or in a valids window), use the mouse to position the cursor, and click the left mouse button to select or deselect items.

To enter information in a field, select the field with the mouse; then either type information manually or select from a list of valids (where available). To use a Valids list, click on the List button, to the right of the field, to pop-up its valids list. Use the mouse to position the cursor and click to select or deselect items. For multiple selections, see Entering Search Criteria.

At the Inventory Results screen, once an Inventory search is performed, users may mark granules for other levels of information (Detailed Information, Browse, etc.) or to perform actions (e.g., Order). Users must "mark" granule(s) before attempting to "Go To" one of these other options.

4.6.2.3 WWW Interface

The WWW interface provides many of the capabilities of the GUI in an easy to use interface. In addition, it allows you to download preselected popular data and images quickly.

4.6.2.3.1 Access Instructions

The WWW interface is available at the following URL: http://eos.nasa.gov/imswelcome. It is also available as a link from the EOSDIS IMS Homepage.

4.6.2.3.2 Hardware/Software Requirements

A web browser is necessary to use this interface. Users have found the most success using Netscape. The WWW interface includes a browser test form so that you may determine whether your browser has everything needed to run the WWW interface.

4.6.2.3.3 WWW Screen Descriptions

The screens contain option buttons, text and input areas, a keywords legend, as well as hyper links. The most common activities are available as buttons at the top of each page. This list of buttons is called the button bar. To use these buttons, simply position the mouse (or cursor) on the desired button, and click the left button on the mouse. Greyed-out buttons cannot be selected. At the bottom of every page, there is a set of abbreviations ([A], [BI], etc.). These abbreviations are occasionally used in the interface on small buttons. There is a Help button at the top of every page. It will take you right to the appropriate section in the User Manual. There might also be very small Help buttons right on the page; these will take users to information about items next to where the curs or is sitting.

4.6.2.4 Most Commonly Asked Questions . . . and their answers

1. What is the difference between a Directory, Inventory and Guide search?

- **A directory search** is a collection of uniform descriptions that summarize the contents of a data set. It provides information suitable for making an initial determination of the existence and contents of each dataset. Each directory entry contains brief data set information (e.g., type of data, dataset name, and time and location bounds). Note: This is a good place for novice users to start.

- **An inventory search** is a set of descriptions of granules from one or more data sets with information required to select and obtain a subset of those granules. Granule descriptions typically include temporal and spatial coverage, status indicators, and physical storage information. An inventory may describe physical granules, logical granules, or both, including a mapping between them if they are not identical.

- **A guide search** is a set of detailed descriptions for one or more datasets and related entities, containing information suitable for the location and content of each dataset and its potential usefulness for a specific application.

2. What is a granule?

   It is the smallest subset of data from a dataset that is independently archived.

3. If an experimental search from the Users Guide calls for a repeating time range how is this done?

   On the search screen under the Date/Time section there are two options. **One is Continuous Time Range** and the other is **Annually Repeating Time Period**. Move the cursor to the selection button and click to select the desired range type.

4. What is the difference between "Continuous Time Range" and "Annually Repeating Time" period?

   - **A Continuous Time Range** allows you to shorten the search criteria and narrow the search, for example, the last 10 years (1984 to 1994).
   - **The Annually Repeating Time Period** allows you to enter a specific seasonal range within a year, for example, the month of July for the last 10 years. This narrows the search and is beneficial when a certain crop grows well in a specific season within a year.

5. How does the scientist with no knowledge of sensors and platforms know which platform and/or sensors to choose?

   The system contains a feature known as dependent Valids. Making selections in one dependent valids field limits the choices in other fields to those that are appropriate to choices already made.

   The scientist could also start with a Directory or Guide search. Only specify the criteria that is known. Another option would be to access a definition of the term in question from the Valids List for that field. From the Definition Screen window, you can access the Guide information by clicking on the Guide Info button. This will give specific information on sensors.

6. What does the utility FTP Browse do?

   The FTP Browse feature allows the user without X capabilities to transfer a browse image file from a public access server onto the user's system. The user can than view the image.

7. What would cause the words on my screen to be cut off?

   The words on the screen will be cut off if the font settings need to be adjusted. You should contact your local administrator or imsv0@eos.nasa.gov.

8. Why is my neighbor's screen light blue with mauve menu bars and mine is another color.

   The terminal color settings need adjusting. You should contact your local system administrator or imsv0@eos.nasa.gov.

9. What if the B0SOT interface window is bigger than my screen?

   A higher resolution screen is needed. You can, however, pan to various parts of the display screen or resize the display screen.

10. What does it mean when I log on to the B0SOT interface and it says "Unable to initialize GDBM directory file. See support staff."?

    This means that you already has a session running. You can only login to the B0SOT interface one time.

4.6.2.5 Points of Contact for Problems/Comments

For assistance using the B0SOT, please contact any one of the Data Center User Services Offices.

4.6.3 Detailed Description Of The System

The following sections are detailed descriptions of the functionality available in this release of B0SOT.

4.6.3.1 User Profile

The User Profile function allows you to supply an address and other contact information as well as Billing and Shipping addresses. It may be accessed from any point in the system through the GoTo menu. To use this function, select the information type (User, Billing, or Shipping). Once you have entered one, if the others are the same, select Copy from... under the Screen Functions Menu bar window or from the buttons below the address field. Address information is required for the following functions: Comments, Order Data, and Browse.

Near the bottom of the screen is the Restricted Access field. This allows you to make requests for data to which you have special rights. Contact User Support at the Data Center holding that restricted data.

The restricted access key can be up to sixteen (16) characters; only alphanumeric characters are significant, and case is not significant. The User Support at the Data Center will need to know the chosen restricted access key as well as EXACTLY how your name is entered to arrange for the server to unlock your access to the restricted data. This information is stored along with other profile information and is normally marked only visible to you.

In the near future, you will be able to designate a destination for their user comments. Currently, a default value is being used. The destination is displayed in the field labeled Email Destination for Comments in the lower right corner of the User Profile screen.

User Profile Caveats

You must fill in at least first and last names, city, country, phone, affiliation category and type. If possible, please include an Internet e-mail address. Last name, first name and Internet e-mail address are necessary for a Browse request.

4.6.3.2 Search Types

From the Search screen, you may create criteria for three different types of searches. They are Guide, Directory and Inventory. There is also a special type of Inventory search called a Granule ID search.

4.6.3.2.1 Guide

The Guide provides detailed descriptions about data sets, platforms, sensors, projects, and data centers. Currently Guide may be accessed four ways: a Guide type search from the Search screen, Valid Keyword searching using the Guide Info button in a Valids List pop-up, from the results of a Inventory search, and from the results of a Directory search.

4.6.3.2.1.1 Guide Type Search

To perform a Guide search, click on the diamond to the left of the word Guide in the Search Type selection area near the top left of the screen. You can either perform a free text search, a search by valids or both. The geographic search, processing level, day/night, browse only granules, number of granules returned per data set, and time search options are deactivated. There is a Free Text search option that allows you to type in any phrase as search criterion. A Free Text search will search all the guide documents for the word(s) entered in the text field. For example, if your enter "DMSP", the system will return with a list of all guide documents with the word DMSP in them. If the words "DMSP SSM/I" are entered, the system will return a list of all guide documents that have either the word DMSP or SSM/I in them.

4.6.3.2.1.2 Valid Keyword Searching

Valids keyword searching is done from a Valids List for data set, platform, sensor, project or data center. If your are unfamiliar with a listed keyword, they may select (highlight) one item then click on the Definition button. The Definition window will appear and display the definition of the item selected (highlighted). To view associated Guide documents for the selected item, click on the Guide Info button. This option provides access to guide documents written about that keyword.

4.6.3.2.1.3 From Inventory Results

From the Inventory Results users may highlight a granule and select Guide from the GoTo menu, then Guide Information for Selected Granules from the Guide cascading menu. If your are in the Detailed Inventory screen, and, therefore, are looking at a specific granule already, you can select Guide from the GoTo menu, then Guide Information for Selected Granules from the Guide cascading menu. If a granule is not selected, the current granule will be used to do the Guide search.

4.6.3.2.1.4 From Directory Results

From the Directory Results you may highlight a data set title and select Guide from the GoTo menu, then Guide Information for Current Data Set from the Guide cascading menu. If you are in the Directory Details screen, and, therefore, are looking at a specific data set already, you can select Guide from the GoTo menu, then Guide Information for Current Data Set from the Guide cascading menu. Either way, the system will ask if you want to see data set, platform, sensor, project or data center or all of above. Once you make a selection and click on the OK button, the system will perform a Guide search based on the criteria selected.

4.6.3.2.2 Directory Search Type

The Directory provides brief, concise high-level information (called DIFs) about data sets from any point in the system. This function accesses information from the Global Change Master Directory (GCMD) for B0SOT supported data only. If a you are interested in DIF information outside those data sets supported by B0SOT, then the GCMD must be accessed directly (a hyperlink to the GCMD information is available from the Welcome screen). This function has proven particularly useful for focusing and refining searches. Currently, Directory information may be accessed three ways: a Directory type search from the Search screen, from the results of an Inventory search, and from the results of a Guide search.

4.6.3.2.2.1 Directory Type Search

To perform a Directory search click on the diamond to the left of the word Directory in the Search Type selection area near the top left of the screen. Search criteria include

- Source/Platform
- Sensor
- Geographic Information (rectangle, select from map, and global granules only)
- Date/Time (continuous time range only)
- Parameters
- Data Center ID
- Campaign/Project

4.6.3.2.2.2 From Inventory Results

From the Inventory Results users may highlight a granule and select Directory from the GoTo menu, then Data set Information for Selected Granules from the Directory cascading menu. If you are in the Detailed Inventory screen, and, therefore, are looking at a specific granule already, they can select Directory from the GoTo menu, then Data Set Information for Selected Granules from the Directory cascading menu. If a granule is not selected, the current granule will be used to do the Directory search.

4.6.3.2.2.3 From Guide Results

From the Guide Results you may display a document and then select Directory from the GoTo menu, then Data Set Information for Current Guide Document from the Directory cascading menu. The system will create and launch a Directory search.

4.6.3.2.2.4 Directory Caveats

The Directory function accepts appropriate information from and passes information to other B0SOT functions so that you need not enter information a second time (unless specifically refining or revising search criteria). However, the Directory search capability only allows geographic searches by lat/lon range (rectangle), select from map and global granules only. Therefore, if you start with an inventory search where geographic information is specified in any form other than those just mentioned, then choose to perform a Directory search, the geographic information WILL NOT be passed to the Directory search. You must re-specify the geographic information.

If in the Inventory search, you did specify one of those three types, the information will be passed to the Directory Search screen and need not be retyped.

The Data set Detailed Information default display is the entire file. You may select certain pieces of information by clicking on the buttons above the text window (e.g., Attributes.....). You may also deselect an information choice to remove it from the display by clicking on the corresponding button again.

Directory Operational Scenario is as follows:

A Directory query is entered in B0SOT, which builds a Directory search message. If the query specifies a data center, the search message is transmitted only to that data center.

The data center maps the query and sends back entry identifiers for any data sets that satisfy the query in a Directory Results message. B0SOT uses the entry ID to retrieve the appropriate DIF information from the GCMD. The GCMD information is displayed in the B0SOT system interface as data set-level information.

4.6.3.2.3 Inventory Search Type

The Inventory Search function provides descriptions of pieces of data (granules) that are available for request from a data archive. This function is for accessing Inventory Information which includes the attributes of the data that will help you to distinguish between granules of data so that decisions on which granules to request may be made. Currently Inventory information may be accessed two ways: an Inventory type search from the Search screen, and from the results of a Directory search. Future enhancements include the ability to perform an Inventory search from the results of a Guide search.

4.6.3.2.3.1 Inventory Type Search

Users may perform an Inventory search from the Search screen by selecting the Inventory Search Type. The following search criteria include

- Source/Platform
- Sensor
- Geographic Information (point, rectangle, four corners, select from map, point and range, or global granules only or global search)
- Date/Time (continuous time range, or annually repeating time period)
- Parameters
- Data Center ID
- Campaign/Project
- Day/Night Flag
- Granules with Browse Products
- Data Processing Level, an option to specify a Granule Cap which will limit the amount of information returned from the archives

A special type of Inventory search is available. Users need only supply the Granule ID and its corresponding Data Set name to execute the search. The geographic coordinates are implied from the granule itself. In some cases a Datatake ID or wildcarding can be used in place of the full Granule ID, but that is at the discretion of the individual data centers.

4.6.3.2.3.2 From Directory Results

From the Directory Results you may highlight a data set title and select Inventory from the GoTo menu, then Granule Information for Selected Data Set from the Inventory cascading menu. If you are in the Directory Details screen, and, therefore, are looking at a specific data set already, you can select Inventory from the GoTo menu, then Granule Information for Selected Data Set from the Inventory cascading menu. If a granule is not selected, the current granule will be used to do the guide search.

4.6.3.2.3.3 Special Situations: "The Wall"

The EROS Data Center (EDC) has implemented a "wall" beyond which a search cannot run. This is because of the enormous number of granules for their data sets. If there weren't a wall, some searches may take a considerable amount of time to run and hundreds of thousands of granules would be returned. This is not only cumbersome to the Data Center but cumbersome for you to organize and try to review several hundred thousand data granules. EDC runs a model that

uses search criteria and data set information (if available) as you enter it to calculate an estimated time required to run the search. If this estimate exceeds a certain time (the wall) the search will not run. In this case you will receive a message asking you to narrow the search criteria, and you must organize the search to chop it up into manageable sizes.

4.6.3.2.3.4 Save Inventory Results

Inventory Results may now be saved, and written to a file or mailed to you at your request. This option is available from the Screen Functions menu located in the menubar at the top of the Inventory Results screen.

4.6.3.3 Entering Search Criteria

Information may be manually typed into a field by moving the cursor to that field and beginning typing. Use the mouse to move the cursor to the appropriate field and click the select (left) mouse button. (This will create a bold border around that box.) You may then type the valid information into that field.

Some of the fields have bottom and right scroll bars to scroll left and right, and up and down. Using the select (left) mouse button users will be able to change the view by moving the slider up and down (or side to side) in the scroll area or by pressing one of the scroll arrows.

4.6.3.3.1 Valids Lists

If you are not familiar with the valid values for a field, the Valids List can be used. This list contains the items that are valid values for that field. The B0SOT employs a system of dependent valids where the values displayed in the Valids Lists are narrowed based upon values that have already been chosen in other Dependent Valids fields. These fields include, Data Center, Data Set, Parameter, Platform/Source, Instrument/Sensor, Campaign/Project, and Processing Level. For example, if you had already specified a data center, then clicked on the List button next to the Data Set ID field, the data sets listed in the Valids List box would only be the data sets available from that single specified data center.

Any incompatible selections will have an asterisk (*) placed before it. For example, if you were to choose two data centers, and then choose a dataset from only one data center, the system would then show the other data center with an asterisk indicating that it is incompatible with the further selection of the data set.

When selecting valids, move the cursor to the List button for the field in question, click and a Valids List window will appear. The name of the field to which this list corresponds will be in the upper left corner.

There are two large display areas. The one on the left displays all the compatible values. The one on the right displays the selected values.

The buttons on the screen have the following functions:

Filter	Displays the list of available predefined filters for this field. E.g., choosing the Altimeter filter from the sensor valids list will display only compatible altimeters in the display area on the left.
Add All	Adds all the values listed in the display area on the left to the display area on the right, i.e., from All Compatible ... to Selected ...
Add	Adds the highlighted value(s) in the display area on the left to the display area on the right, i.e., from All Compatible ... to Selected...
Remove	Removes the highlighted value from the display area on the right (Selected ...).
Remove All	Removes all the values from the display area on the right (Selected ...).
Help	Displays the help for this screen in a pop-up window.
Definition	Displays a definition of the last highlighted value. Only one definition at a time can be displayed.
Cancel	Returns you to the Search screen without retaining any of the changes.
OK	Accepts any inputs and returns you to the Search screen.

4.6.3.3.1.1 Making Selections

To make the desired selection(s), click on a valid in the box to the left labeled All Compatible ... and then click on the Add button. The selection will then appear in the box to the right labeled Selected ... . Double clicking on an item will also add it to the list on the right. Click on OK to return to the Search screen.

To select values for a given field from the Valids List, click on each item.

To select multiple values for a given field from the valids list, select the first item by clicking the on that item. Hold down the CONTROL key and use the mouse to click on the other items. Note: the CONTROL key must be pressed for each subsequent choice or the previous selections from the list will be lost. To deselect any single item when several items are already selected, hold down the CONTROL key and click on the item to be deselected. If the CONTROL key is not used, all the selected items on the current page will be deselected and the item that was clicked on will be selected.

4.6.3.3.1.2 Using Filters

Predefined Filters are predefined subsettings of the valid values. For example, choosing the Altimeter filter from the sensor valids list will display only compatible altimeters in the display area on the left. To view the list of filters, click on the Filter button and a pop-up window will display the list. Click on a filter and then click on the OK button. The name of the filter will now be shown above the display area on the left side of the Valids List window and the values that are displayed will be those that are compatible with the filter and any other choices you have made in other dependent valids fields.

Type-in field

The Type-in field allows you to type in a valid value, or an accepted alias, or to use a wildcard. If a valid value or an alias that maps to only one valid value is typed-in, then the value is automatically selected and displayed in the display area on the right side of the Valist List window. If a wildcard or an alias that maps to more than one value is typed-in, then the matching valid values are displayed in the display area on the left side of the screen, so that you can choose any or all of the matching valids.

You may omit blanks and special characters in the typed-in value; if they are included, the system will check for them. Capitalization is not significant.

The system provides a feature called "wildcarding." This allows you to type part of the entry and use a "wildcard character" for the rest of the entry.

To use the "wildcard" feature, type into input area beneath the display area on the left side of the screen, and press RETURN. The alias used will be shown above the display area of the left and the values that are displayed will be those that are compatible with the wildcarded entry and any other choices you have made in other dependent valids fields.

Where you place the asterisk is of importance. Whether or not there is a blank space between the word and the asterisk is meaningful. It can result in differing values that are displayed for you.

The system allows the following formats:

- ice* - matches all valids whose first three alphabetic characters are ice.
- ice * - matches all valids whose first four characters are ice then a blank.
- *ice*
- * ice *
- * ice*
- *i ce *

The system does not allow the following formats:

- *ice
- * ice

4.6.3.3.1.3 Definition

The system allows you to access definitions of terms in the Valids List window. Highlight the term and click on the Definition button. A Definition screen window will appear containing the definition.

The buttons on the Definition screen window have the following functions:

OK	Returns you to the Valids List window.
Guide Info	Displays detailed information relevant to the defined term.
Help	Displays the help file for the Definition screen window.

From the Definition screen window, you may request to see Guide documents that are associated with that term. The system assumes that you are requesting specific document types (i.e., platform documents, instrument/source documents, etc.). This request is more specific than a Guide type search executed from the Search screen.

Two fields do not provide the Guide Info function from the Definition screen window from the Valids List window. These are Parameter and Processing Level. Currently, there do not exist parameter or processing level type documents. The Guide Info button is grayed-out and, therefore, unavailable from these two screens.

4.6.3.3.2 Geographic Options Selection

To specify a geographic area selection, move the cursor to the upper right hand area of the screen and place it on the Geographic area selection box. To display the different options for specifying a Geographic area, press and hold down the mouse button. If you choose Global Search, the coordinates will be loaded and displayed in the Geographic area of the Search screen.

4.6.3.3.2.1 Selection Map

The system will graphically display the map of the world in Plate-Carree (flat world map), North and South Pole stereographic projections at your choice and will allow you to select the area of interest for search criteria entered in the Search screen.

Map Options

- Change the type of projection by choosing corresponding option menu item from the Projection option menu in the upper-left corner of the screen. The zoom factor as well as an area previously marked on the map is kept consistent for any map projection. The center latitude and longitude of the map projection can be changed by dragging the latitude and/or longitude sliders located on the bottom and right-hand sides of the map.

- Real-time panning repositions the map center in either projection in both longitudinal and latitudinal directions. This function is provided by vertical and horizontal sliders located to the right and at the bottom of the map respectively. For North-Pole and South-pole stereographic projections the Earth can be viewed at any angle making it a general stereographic projection. The values of the center longitude and latitude in degrees are displayed in the text boxes next to the arrows at the top and on the left hand side of the map.

- Real-time zoom allows you to increase or decrease the viewable area of the globe for greater map detail or broader view. The map resolution will automatically enhance as you zoom in giving more map detail. The zoom control slider is located to the left from the map.

- Toggle the map layers and grid lines This allows you to display/hide the political boundaries and rivers on the map and also to choose the grid lines increment in degrees. These functions are accessible from the Screen Functions menu.

Drawing Functions

The Drawing Functions group is found in the upper-left corner of the screen. Clicking on one of the four toggle buttons will select the desired marking function. After it has been selected you can move the cursor into the map area and mark the area of interest by clicking and/or dragging the cursor. The latitude/longitude value text label will be dynamically shown next to the cursor position to help you determine the current cursor location. Marked point(s) lat/lon values will then appear in the text fields in the bottom of the screen and on the Search screen. There are four different ways to mark a region of interest:

- **Point** allows you to select a single point on the map. To select a point, move the cursor to the desired position and click the left mouse button. The dot and the lat/lon label next to it will show the marked position. The lat/lon values will also be displayed in the text fields in the bottom of the screen.

- **Rectangle** allows you to select a range of latitude/longitude values which delimit a rectangular area on the map. To mark a rectangle you must first position the cursor in the map, press left mouse button and drag the cursor to the destination point holding the left button down. The rectangle on the map will dynamically grow or shrink until you release the button. When the button is released the corner point values of the rectangle will appear in the text fields in the bottom of the screen and in the Search screen. The area is now selected. To edit the area you may position the cursor at another location on the map and repeat the operation until satisfied with the selection. The starting point (the point where the mouse button was first pressed) will remain the same.

- **Range** is very similar to rectangle with one exception: The location where the mouse button was first pressed will be the center point of the selected rectangular area. The red dot and a text label next to it will show the lat/lon position of the center of the rectangle. You may edit the area by positioning cursor near any corner point of the rectangle, pressing the left mouse button and dragging the cursor. The area will re-shape following cursor movement until the mouse button is released. The lat/lon values of the corner points as well the latitudinal and longitudinal range will be displayed in the text fields below the map.

- **Polygon** allows you to select an area delimited by a four-corner polygon. The cursor must be positioned at the first desired point. Press left mouse button and drag the cursor to the position of the second point and release the button. The line between two points will show on the map. Press the button again near the second point and drag the cursor to the location of the third point, then release the button. The line between second and third points will be drawn. Press the button again near the third point and drag mouse to the location of the fourth corner. The polygon will close and will be re-shaping following the mouse movement until the button is released. The polygon is marked. Now it is possible to edit the location of any corner by positioning the cursor near corresponding corner point, pressing left mouse button and dragging cursor to a new location.

Note: There are some limitations on the polygonal area shape. Namely, it must be convex and must be marked in clockwise direction. The marking algorithm will not allow points in counter clockwise direction or non-convex shapes. It is also possible to mark a region covering a pole. The same rules for shape and order of the points apply.

The selected area points' coordinates will be shown in the boxes at the bottom of the screen and in the Search screen. After the area has been selected you may go back to the Search screen. The selected area boundaries will be reflected in the geographic area box.

The buttons at the bottom of the screen are shortcuts for commonly used commands. The Search Screen button closes the Coordinate Selection Screen and returns back to the Search screen. The Clear Selected Area button cancels the selection. This can also be achieved by choosing another Drawing Function from the Drawing Functions box. The Close button closes the screen.

4.6.3.3.2.2 Geographic Area Caveats

The Directory search capability allows geographic searches by the following search types: Rectangle, Select from map, and Global granules only.

The following Data Centers do not support corner point searches: JPL, LaRC, GHRC and NOAA-SAA. In these cases, if you specify a search by entering Polygon points, these Data Centers calculate the bounding rectangle and then run a rectangle search. You will be notified that these Data Centers revised the geographic search criteria. This message will be standard across all these Data Centers. Data Centers will put the requested fields in the "fields not mapped" area since, in this case, the Data Centers aren't really mapping your input directly into their database.

4.6.3.3.3 Date and Time Ranges

There are two different types of time ranges available. You can specify a continuous time range, or an annually repeating time range (e.g., the last 10 summers). Specifying Date/Time criteria is optional.

4.6.3.3.3.1 Continuous Time Range

Enter the start and end dates and times of the continuous time range of interest in the Start Date/Time and End Date/Time fields. The format is YYYY-MM-DD for the date, and HH:mm:ss.ss for the time. If a time is not entered, the start time will default to the beginning of the day (00:00:00) and the end time will default to the end of the day .

4.6.3.3.3.2 Annually Repeating Time Range

Enter the start and end dates and times of the temporal range over which the annually repeating time period should be repeated. The format is YYYY-MM-DD for the date, and HH:mm:ss.ss for the time. If a time is not entered, the start time will default to the beginning of the day (00:00:00) and the end time will default to the end of the day .

You must also specify the start and end dates for the interval. The format is the Julian date (DDD).The Help file provides a list of Julian dates for a regular (not a leap year) calendar year.

If a scientist wanted information for the last 10 summers, the start and end dates would be 1986-06-22 and 1996-09-21. This covers the 10-year span. To specify summer, the scientist must enter the Julian date range. The beginning date would be represented by 173 and the ending date would be represented by 265.

4.6.3.3.4 Save and Restore of Search Criteria

You can save search criteria for later retrieval. After entering the search criteria, select Save Search from the Screen Function menu. In the GUI, you may also click on the Save Search button. The system will pop-up a window prompting you for a name to be entered for the search criteria.

To retrieve search criteria that has already been saved, select Retrieve Search from the Screen Functions menu. You may also click on the Retrieve Search button. The system will bring up a window with all the search files that have been stored. Selecting one of these files will result in the system retrieving that search criteria and displaying it on the screen.

If a set of search criteria is saved and named default, that search criteria will be automatically loaded into the Search screen each time a new session of B0SOT is begun.

If you are running the client from your own local machine, a mechanism is available to specify a search criteria file load from the command line. (See the EOSDIS IMS Installation Guide available from the EOSDIS IMS Home Page) for details.

4.6.3.4 Results

4.6.3.4.1 Guide Search Results

The Document Score

When results are first returned, there is a list of document titles preceded by a score. The score is normalized to 1000 where 1000 is the highest score. A high score means that the document came close to matching the search criteria. For example, there is an SSM/I sensor document and there is a DMSP-F8 platform document that mentions the SSM/I sensor. If the query is for sensor=SSM/I, the SSM/I sensor document should get a higher rating because it would have the word "sensor=SSM/I" more times than the platform document. The other document will return but with a slightly lower rating.

Viewing Guide Documents

From the document list you can click on the document name to view that document. This will bring up a Guide document. Items that are highlighted indicate that there are supporting documents available that may be of interest. To access these click on the highlighted item. There may be some in-line graphics or images. To improve performance, some images were included in-line as a "postage stamp" size version. If you click on the image, the system will bring up a full size image. You can go "back" to the previous document. To go back further than the last document, keep clicking the Back button, or use the History List option available under the Screen Functions menu. The Find button allows users to search for word(s) in the current guide document. For example, if you enter the word "platform", and either presses the RETURN key or clicks on the Find button, a search through that document will be done.

The cursor will go to the first occurrence of the word "platform" in the Guide document.

The Document History List

This Document History not only lists all of the documents seen, it also lists the documents that you can go forward to based on the hyperlink information in the "current" document. It is available from the Screen Functions menu bar options. To select an item from the History List, position the cursor over the item and double click.

4.6.3.4.2 Directory Search Results

Once a search is executed, the system will respond with a Communications Results Status screen that will inform you of the searching and network activity. A completed search at a data center is indicated by the button labeled Data next to the particular data center being bolded. After all searches have completed, you can view the data received. You can click on the Data button. In the case of a problem with a particular Data Center, View the Comments.

Once a search is performed, you will be provided with menu bar options to view:

- Data set Brief Description
- Data set References
- Data set Personnel
- Data set Archive Information
- Data set Attributes which include (but are not on a menu):
  - Directory Entry Identifier
  - Directory Entry Title
  - Director y Entry Start and Stop Date
  - Sensor Name
  - Source Name
  - Originating Center
  - Campaign or Project
  - Storage Medium
  - Parameter Measured
  - Discipline Keywords
  - Coverage
  - Location Keywords
  - General Keywords
  - Revision Date
  - Science Review Date
  - Future Review Date
  - Quality

Data is automatically sorted by data center. The system displays the data sets of only one archive at a time. The order of the archives is the same as that displayed on the Results Screen. You may display the data sets of a different Data Center by using the Next Data Center option. To select a data set for display of its Detailed Information, click on the Count button located to the left of the data set name, and then click on the Detail Directory button at the bottom of the screen.

4.6.3.4.3 Inventory Search Results

Once a search is executed, the system will respond with a Communications Results Status window that will inform you of the searching and network activity. A completed search at a data center is indicated by the button labeled Data next to the particular data center being bolded. You can click on the Data button. In the case of a problem with a particular Data Center, you should click on the View Comments button.

4.6.3.4.3.1 Inventory Results Screen

A completed search will generate Inventory Results which are organized by Data Center (primary sort) and Data set (secondary sort) by default. Inventory Results screen includes data set level information such as

- Data Center
- Data set Name
- Source
- Sensor
- Number of granules returned for this data set

It also provides granule summary information including

- Sort criteria
- Northernmost Latitude
- Easternmost Longitude

Start date and time for this granule, the flag that denotes whether or not a browse product or coverage are available for this granule, and if the granule has been marked for Order, Browse, Detail information or Coverage

Results may be reorganized by using the Sort By option under the Screen Functions menu. Users may indicate both a primary and a secondary sort key.

Also, you may mark granules for Detailed information, Order, and, if Browse and/or Coverage is available, set the flag to "Y" to mark for Browse or Coverage.

4.6.3.4.3.2 Detailed Inventory Information

Once you mark a granule(s) for Detail, those Inventory details may then be accessed. From the GoTo menu select Detailed Information, then for Granules from the cascading menu. The Detailed Inventory Information for the marked granules will be displayed one granule at a time. This screen includes the Additional Information field which is data set specific information that the Data Center staff deemed important information for you to view in deciding whether or not to request a granule.

4.6.3.4.3.3 Selection List

The Selection List option provides the capability to view only those granules that you have selected (or highlighted).

Using the Selection List

Going between the Inventory Results List and the Selection List works much like a toggle. On the Inventory Results screen, there is a Selection List button at the bottom of the screen in addition to a Selection List option in the Screen Functions menu. When selected, you will see the same screen (it will repaint) but with only those granules selected. On this Selection List screen, there is an Inventory Results button at the bottom.

Marking

You can "mark" granules from the Selection List. Any "marking" in the Selection List will not be updated in the Inventory Results list until you toggles back to the Inventory Results list. If you are in the Selection List and "mark" granules for Detailed information, then GoTo Detailed Information for Granules, the system will only show the "marked" granules from the Selection List--not those that were marked but not "selected" in the Inventory Results list. However, when users go back to the Inventory Results screen, and then GoTo Detailed Information for Granules, they will see everything that was marked in both the Selection List and Inventory Results screens whether they are highlighted or not.

Sorting

You can only sort granules in the Inventory Results screen. But once sorted in the Inventory Results list, granules will appear in the Selection List in the same order. So in a sense, you can sort the Selection List by going back to the Inventory Results, resorting the granules, and returning to the Selection List.

4.6.3.4.4 Selecting and Marking

Selecting is not the same as Marking. Selected items may or may not be marked. Marked items may or may not be selected.

4.6.3.4.4.1 Selecting

In the Inventory Results, to select granules, simply position the cursor on the granule of interest and click the mouse button. To select multiple values for a given field select the first item by clicking the on that item. Hold down the CONTROL key and use the mouse to click on the other items. Note: the CONTROL key must be pressed for each subsequent choice or the previous selections from the list will be lost. To deselect any single item when several items are already selected, hold down the CONTROL key and click on the item to be deselected. If the CONTROL key is not used, all the selected granules on the current page will be deselected and the granule that was clicked on will be selected.

To select granules that are contiguous, select the first granule by clicking on that item. Press the SHIFT key and click on the last item of desired granules. The system will highlight the first item selected, the second item selected, and all those in between.

In the Directory Results, click on the Count button to the left of the data set to select it. The CONTROL key need not be used to select multiple data sets.

Screen Functions

To select all the granules, use Select All Granules from the Screen Functions menu. To deselect the granules on all pages, use Unselect All Granules from the Screen Functions menu.

4.6.3.4.4.2 Marking

You can mark granules in the Inventory Results and Selection List screens for Coverage Map display, Browse display, FTP Browse, Detailed Information, and/or Order. You can also mark granules in the Browse screen for Order, and in the Coverage Map screen for Browse and Order. In order to GoTo one of these other options, "mark" granule(s) first.

To mark items, focus on the Marking columns on the right side of the screen. The default value showing is "N". Move the mouse to the "N" in the appropriate column and row, and click on that "N". In the Detail Info, Coverage and Order columns, the "N" will change to a "Y" indicating that the granule is now marked. In the browse column, the "N" will change to "IB" for Integrated Browse or "FB" for FTP Browse. If Browse is not available, the system will display a message saying "Browse is not available for this granule." Click the OK button on the pop-up to continue.

Important note: Marking and GoingTo Browse or Coverage Map performs the action on the granules that are "marked". Whether they are "selected" has no bearing. E.g., you have three items "marked" for Browse in the Inventory Results List but not "selected", and four items "marked" for Browse in the Inventory Results List and they ARE "selected". If you go to GoTo Browse there will be seven Browse items. Then, still at the Inventory Results screen, if you "mark" five more items for Browse, then use GoTo Browse, there will be twelve Browse items.

Screen Functions

You can also mark items by way of the menu bar. Select the items then choose Mark... from the Screen Functions menu. To unmark items by way of the menu bar, select the items then choose Unmark... from the Screen Functions menu.

4.6.3.5 Coverage Map

The coverage map screen provides a graphical representation of the geographic coverage of selected inventory granules. At your choice, the world map can be displayed in two projections: Plate-Carree (flat world map) and Stereographic (globe). The following controls over map appearance are provided:

- Display or hide the lakes and rivers, political boundaries and a lat/lon grid lines with a given interval.
- Position the map by clicking the left mouse button at the location of the mouse in the map. The map will center on the point where you clicked.
- Display the back (invisible) face of the globe in dimmed colors for the stereographic projection.
- PAN (or "spin") the globe in a north, south, east, or west direction at increments in real time.
- ZOOM in or out in real time. The map resolution will automatically adjust giving you greater detail for zoomed-in views.
- Sequentially cycle through and display the granules that are marked for coverage from B0SOT
- Inventory Results screen, one at a time.
- Mark "Retain Granule Current Coverage", a granule to remain displayed on the map while stepping through the other granules.
- Choose to mark a granule for order, for any granule displayed on the map.
- Choose to mark a granule for browse, for granules which have browse products associated with them.
- Delete (hide) a granule from results list.

In addition, the following information is displayed in the text fields in the upper-left corner of the screen: data center - originator of the granule, data set name, granule ID, date/time, geophysical parameters of the product, and the availability of an integrated and/or FTP browse product for this granule.

The buttons at the bottom of the screen are shortcuts for the most commonly used commands. The Next Granule button will take you to the next granule that was requested. The Previous Granule button will take you to the previous granule that was selected. The Coverage Description button will display a description of the currently displayed coverage for better understanding of the coverage details. The Close button will close the current window, or if no other windows are open, it allows you to exit B0SOT.

4.6.3.6 Browse

This function allows you to "see" their data before ordering.

4.6.3.6.1 Local (FTP) Browse

This function allows a B0SOT user to locate and retrieve browse products for selected B0SOT datasets for use with other viewers. B0SOT DOES NOT display these products. Instead, you must use whatever display tools are available on their machine or at their facility. The User Profile must contain first and last names and an e-mail address to run the search.

Local (FTP) Browse Operational Scenario

You perform an Inventory search (which may or may not include the request to see only those granules for which browse products exist). The system returns results including a field called "Browse Available," which indicates whether a browse product exists for a given granule. This information is displayed on the results screen for further action (where further action may be to see a coverage map, a browse product or delete a granule or group of granules). If you want to see browse products for any number of granules, then they must be marked for FTP Browse. Once the granules are marked for FTP browse and that function has been executed, the granule(s) unique identifier information is passed by B0SOT to the Data Center. The Data Center should send back a quick acknowledgment message to B0SOT indicating that they received the request for browse data. This acknowledgment message will also indicate that you will be receiving detailed instructions for browse data access and point of contact information via e-mail as soon as the browse products are on-line and ready for transfer.

The Data Center will make the browse product available in an anonymous FTP account on the Data Center host machine in at most 24 hours. The product will be put in a directory within the anonymous FTP account. As soon as the browse products are available, the Data Center will send an e-mail instructing you where to find the browse data and how to access the product via FTP. This notification will contain the account information, directory name, the file name(s) of the product(s) and their associated file types and sizes. If the browse product metadata is also available via the anonymous FTP account, then the Data Center will include the directory from where these files could be copied. The product will be available in this account for 72 hours following the initial 24 hour period. You are responsible for determining whether your host machine has adequate disk space to hold the browse products; to log onto the correct Data Center machine(s) to access the browse product(s); to traverse to the correct directory indicated by the browse results e-mail message then type: get < browse_product_name > (to transfer one file)

or

mget < wild card character > (to transfer multiple files) and to obtain the software necessary for displaying the browse products on their local workstation.

4.6.3.6.2 Integrated Browse

This screen allows you to view browse raster images that represent the data product(s) of interest and order data products for selected B0SOT data sets without use of special graphics equipment.

This feature allows you to look at product(s) represented by raster images with the pallet that was sent with the product. You can pan the browse image in vertical and horizontal directions; zoom in/out to see greater image detail; view additional images (layers) in the HDF file if they are available; order the data granule represented by the image; or see the product metadata. You can also save the file for viewing with other software (if the client is running on your own workstation).

When a regional image is displayed, the screen will also display the following:

A small coverage map showing exactly where the image falls on the Earth. The outer blue polygon delimits the coverage by this product, while the inner red polygon shows the viewable area of the image that is currently shown in the image area. The inner box will shrink/grow with the zoom change. It will also move within the coverage box according to the panning sliders positions. For global granules, only a blue circle surrounding the globe will be shown. You can also pan the world map independently of the browse image to see other areas. This may be useful to determine the location of the coverage area if it is too small. The panning of the map is achieved by dragging the lat/lon sliders located at the sides of the map.

- Data center - originator of the granule
- Data set name
- Granule ID
- Date/Time
- Parameters of the product

The buttons at the bottom of the screen are shortcuts for the most commonly used commands. The Next Granule button will take you to the next granule that was previously requested. The Previous Granule button will take you to the previous granule that was selected. The Browse Request Status button will take you to the Browse request Communication Status screen. The Description button will display a description of the current browse selection. The Legend button will display a color legend of the current browse selection. The Next Layer button will take you to the next layer of the browse image that is currently displayed. The Previous Layer button will take users to the previous layer of the current browse image that is displayed. The Layer List button will display the list of image layers for the granule. The Close button will close the current window, or if no other windows are open, it allows you to exit B0SOT.

Integrated Browse Operational Scenario

You perform an Inventory search (which may or may not include the request to see only those granules for which browse products exist). The system returns results including a field called "Browse Available," which indicates whether a browse product exists for a given granule. This information is displayed on the results screen. You can see a coverage map, a browse product, or delete a granule or group of granules to refine the search. If you want to display browse products for the granule(s), then all of the granule's ID information (the Data Center, data set and granule triplet) and browse method will be written into a browse request message and sent to the appropriate Data Center(s).

At this point, you have the option to choose method of browse - "Integrated Browse" or "FTP". The "Integrated Browse" option means that all browse products available for display would be requested from the Data Centers(s) for display B0SOT. "FTP" would mean that you want all products staged by the Data Center(s) and placed in Data Center anonymous FTP accounts for later transfer. If you want to display browse products for the granule(s), then all of the granule identifier information and method of browse (Integrated Browse or FTP) is passed to the appropriate Data Center(s). The Data Center(s) send the browse products back to B0SOT in HDF format. B0SOT has a Browse

Status screen indicating which browse product(s) have arrived. Once all images are physically on the B0SOT machine, the status screen will bold the Image button on the right side of the screen, and you will be able to see the image displayed on the Integrated Browse Product Display screen. This system displays one product at a time. You may step through products from different datasets and from different Data Centers without any special procedures to otherwise traverse these.

If you select a granule for browse that has more than one image associated with it, the images will be viewable. A set of buttons next to the bottom left corner of the browse image will become activated (bold).

4.6.3.7 Order Data

Information pertaining to orderable data products will be displayed for you. A dialog can then be established through the interface with individual Data Centers to make a data order. The User Profile must contain at least first and last names, city, country, phone number, Internet e-mail address, and affiliation category and type.

Data Subsetting

Basic data subsetting is indicated at the bottom of the Package Options screen. Currently, only temporal and spatial are supported. Availability of this feature differs among data sets and data centers. Available options are in black, unavailable options are greyed out.

Order Data Operational Scenario

There are two ways to mark granules for Order from the Inventory Results screen. You can select the granule(s), choose Screen Functions from the menu bar, and then choose Mark... for Order from the cascading menu. Or you could click and toggle from N to Y in the Order column on the right side of the Inventory Results screen.

If a granule is "packaged" one per package, users will be able to mark/unmark for Order. Here the granule marked/unmarked is packaged together with other granules, then the Member Granules screen pops-up showing all the other granules from the current search that are packaged together. You can mark/unmark all these granules together by clicking on the OK button at the bottom of the Member Granules screen. Clicking the Cancel button will not alter the previous markings. From here, you should select the GoTo menu, and then choose Order Data. Here the user's selected packages are displayed so that you can specify the processing and media options. To select the options, click on the particular package, then click on the Package Options button. The system will bring up the Package Options Selection screen for the package. Make selections and click on the OK button.

Note: If this operation is performed on the first package in the list, you may choose the same option for the rest of the unselected packages. The default is to mark all.

Use the Next Data Center and Next Data Set buttons to progress through all the marked granules, until a pop-up appears that says "No more Data sets.". Click on the OK button in the pop-up window to close it and return to the Order Data screen.

There is a Duplicate Order button for submitting orders of more than one copy of an order for a particular data set. To submit the Order, you should select the Screen Functions menu and then choose Submit Order, or click on the Submit Order button at the bottom of the screen. The Order Data Search Status screen will appear. After successful completion of an Order, the data centers send back the contact information. This may be viewed by clicking on the Contact Information button for each data center.

4.6.3.8 Comments

Comments Description

The Comments function will allow you to create comments to send to the B0SOT system staff. You are encouraged to send comments at any time. This function will access a line editor in which users may create a comment. You may save the comment and later access it to add further comments throughout B0SOT. The Comment will be sent upon exiting B0SOT .

To access this function, first go to the User Profile and fill out the user information. After doing so, return to the Go To Menu bar and select Comments. Move the mouse to the text area and click the left mouse button. You may now type in the comment. The up and down Arrow keys can be used to move between lines of text. When you are finished, click on the Close button, or click on the Send Comments button.

The Close function will save the comment and allow you to leave Comments without sending it. If you have already sent the comment, Close will return you to the previous location in the system.

Comments Caveats

The User Profile must contain at least first and last names, city, country, phone number and affiliation category and type. Please include an Internet e-mail address.

4.6.3.9 System Limitations

To view an updated listing of the system's limitations and known problems, go to the Welcome screen and access the hyperlink.

4.6.3.10 Command Definitions/Descriptions

The following table contains command definitions and descriptions for B0SOT.

Table 4-2. Command Definition and Descriptions

Command	Definition/Description
Abort Search	Aborts all searches that are not complete. Information returned from completed searches will be available for display.
Arrow keys	Move one space at a time or one line at a time.
Browse	This option will provide access to browse products for selected granules (those "marked-for-browse).
Cancel	Cancels the current action. If you are in a pop-up window, this will take you back to the previous screen without accepting any information that you into the pop-up window. If you are in a screen (e.g., comments or user profile) cancel will put you back where you were before you entered this screen.
Clear Field	Clears the input from the field at which the cursor is located.
Clear Form	Clears the entire screen.
Click	Quickly press and release the mouse button.
Comments	Allows you to generate comments. Upon entering this screen you can begin a comment or add to previous comments (if you have already started one). You may call this up anywhere throughout the system for re-editing. Your comment will be sent to the B0SOT staff upon exiting the system. At any time during your B0SOT session, you may send the comment.
Contrast/Brightness	Allows you to adjust the contrast and brightness by using the mouse to move sliding scale bar.
Copy from Billing	Copies address information from the Billing contact information that you supplied in the Billing form to the form currently on the screen. This is only available from the user profile screen when you are at the User or Shipping form.
Copy from Shipping	Copies address information from the Shipping contact information that you supplied in the Shipping form to the form currently on the screen. This is only available from the user profile screen when you are at the User or Billing form.

Table 4-2. Command Definition and Descriptions (cont.)

Command	Definition/Description
Copy from User	Copies address information from the User contact information that you supplied in the User form to the form currently on the screen. This is only available from the user profile screen when you are at the Billing or Shipping form.
Coverage Map	Provides a coverage map indicating the general location of a specific granule on the globe.
Data Center Information	Provides information about the data center holding the data set, the unique identifier used by the data center to point to the data set, and a person to be contacted at that center for information on data access.
Data set Attributes	Provides high-level information on various attributes of the data set including Directory Entry Identifier, Directory Entry Title, Directory Entry Start and Stop Date, Sensor Name, Source Name, Originating Center, Campaign or Project, Storage Medium, Parameter Measured, Discipline Keywords, Coverage, Location Keywords, General Keywords, Revision Date, Science Review Date, Future Review Date, and Quality.
Data set Brief Description	Provides a high-level summary about the data set.
Data set Personnel	Provides information about the Investigator, Technical Contact and Author associated with the current data set and textual description. The Investigator is the person who headed the investigation or experiment that resulted in the acquisition of the data described. The Technical Contact is a person who is knowledgeable about the technical content of the data (quality, processing methods, units, available software for further processing, etc.). However, please call the associated Data Center first as they also have knowledgeable staff who can answer many of your questions. The Author is the person responsible for the accuracy of the information content of the data set textual description.
Data set References	Provides a few key bibliographic references pertaining to the current data set.
Directory Information	Retrieves brief a textual description about the data set associated with the selected granule. If a previous directory search was performed and the directory information is readily available, the information will be displayed immediately. If the granule does not have directory information readily available, the system will perform an automatic directory search.
Del	Backspaces by deleting one character at a time.
Exit B0SOT	Exits the B0SOT system from any location in the system. You will be prompted f you really want to leave the system before completing the exit.
Grid	Toggles gridlines on or off the browse or coverage display.
Grid Interval	Allows you to set the grid interval between 5 and 45 degree increments.
Help on Commands	Provides definitions and information on the various commands available through the menu bar.
Help on Functions	Provides definitions and information on the various functions available through the menu bar. Example functions include sending comments about the system, accessing the user profile, directory, inventory, coverage, and browse information, and requesting and ordering packages.

Table 4-2. Command Definition and Descriptions (cont.)

Command	Definition/Description
Help on Screen	Invokes help menu on the current screen.
Help Select Item	Invokes help on the field on which the cursor is located.
Help on System	Provides descriptions and information on various aspects of B0SOT.
Inventory Details	Displays detailed information about specific granules. This option is available from the Inventory Results screen. Once you have selected specific granules and have marked them for inventory details, this menu option will display the granule details.
Inventory Information	Retrieves granule level information associated with all selected data sets.
List	Brings up a list of Valids for a particular field. In the valids list you use the up and down Arrow keys to move through the list. Click to select keywords. You may select as many as you like. When you finish making your selection, select OK to accept the information, or Cancel to cancel the information.
Mark for Order	Allows you to select granule(s) for request. To finalize your request and submit it to the Data Centers, you must go to Order Data to provide specific order information before you exit B0SOT.
Mark for Browse	Allows you to select a granule(s) for viewing associated browse products. This option can only be exercised if the Browse Available flag is IB for integrated browse or FB for FTP Browse.
Mark for Detail	Allows you to select a granule(s) for detailed inventory information. Once you make this selection you GoTo Detailed Information to access the detailed information.
Next Data Center	Displays information for the next Data Center when information from multiple Data Centers is available. This is available at the Inventory Results when data are organized by Data Center and Data set.
Next	Takes you to the next "group" of information. For example in the Inventory Results, granules are organized by "sort key". Available "sort keys" include Data set, Archive, Source, Sensor, and Archive and Data set (default). In these cases, it will take you to the next lowest level "sort key" unless you are at the last. By lowest level, we mean if there are multiple sort criteria (e.g., in the case of Archive and Data set) the lowest level would be the secondary sort key (in this case, Data set). When there are multiple sort criteria there is a separate key to sort the primary key (e.g., ESC-k for Next Archive). Note: The item name "Next " as it appears in the menu bar changes depending on the current sort key.
Ok	Accepts input and integrates the information into the screen display.
Order Data	Allows you to create a request for data based on granules that you marked-for-order. It will provide you options for data packaging, format and media. Your request may subsequently be sent to the Data Centers.
Political Boundaries	Toggles the political boundaries on or off the browse or coverage display.
Previous	Takes you to the previous "group" of information.
Remove Granules	Allows you to hide all granules selscted from the Inventory Results list.
Restore Deleted Granules	Allows you to re-display all granules that had been hidden from the results list.
Rivers/Lakes	Toggles lakes and rivers on or off the browse or coverage display.

Table 4-2. Command Definition and Descriptions (cont.)

Command	Definition/Description
Search	Takes you to a search screen from other screens in the system. OR Executes a search if you are already at the search screen.
Sort by	Allows you to sort the list of granules returned from your search. The default is a primary sort by Archive and a secondary sort by Data set. Other sorting options available through the "Sort by" option include by Data set, by Source, by Sensor, by Start Date/Time, and by Archive.
Sort by Data Center	Sorts the entire list of granules by Data Center.
Sort by Data Center and Data set	Sorts the entire list of granules by Data Center (primary sort), then by Data set (secondary sort). When granules are organized this way, the Next Data set option will move within data sets at one data center. To get to data sets at other data centers you must first do Next Data Center.
Sort by Data set	Sorts the entire list of granules by Data set.
Sort by Sensor	Sorts the entire list of granules by Sensor.
Sort by Source	Sorts the entire list of granules by Source.
Sort by Start Date/Time	Sorts the entire list of granules in chronological order based on the beginning of data collection by the sensor. Keep in mind that some data granules may span days, weeks, months... so the time represented by the data granule is not necessarily instantaneous. This feature is helpful in finding coincident data.
Status	Takes you to the Results Status Screen and displays the status of your last search.
Tab	Moves from field to field.
User Profile	Takes you to the User Profile Screen where you can specify contact information and set your preferred work environment.
Welcome	Takes you back to the initial screen in B0SOT.
Zoom	Expands the detail of information.

4.7 Earth Science Online Directory (ESOD)

ESOD serves as the directory service for EOSDIS. It provides brief descriptions of data products, software tools, and services. It also serves to facilitate collaborative research by allowing scientist to advertise their own data, software, and services. There are two ways to access ESOD: one is integrated into the search and order tool B0SOT and the other is directly through the ESOD interface. The directory entries or "ads", as they are called, include a description and, as applicable, key metadata to identify them. Some may provide contact information so that you may follow-up on and gain access to information of interest. Other ads will provide direct hyperlinks to the specified data product, tool, or service. ESOD also stores similar information about EOSDIS-sponsored data products, tools, and services.

Here's how it works

ESOD permits free text searching on ads as well as advanced metadata searching on dataset advertisements. When a you perform a free-text search, for example, "drought Iowa USA 1995," ESOD returns a list of ads that includes these terms in its description or title. Then, you may browse through the ads to identify the most relevant for your needs and access the source information through a hyperlink provided in the ad or using other access instructions included within the ad.

4.7.1 Types of Advertisements

There are two basic types of ads: Data Advertisements and Service Advertisements.

Data Advertisements

Data ads describe a collection of Earth Science data that are logically related in some defined way, such as being from the same instrument, being processed to the same level, revolving around a certain measurement, etc.

Advertisements have descriptors associated with them. These include the platform (or satellite) name, the sensing instrument name, the analysis source, the campaign name, any spatial and temporal keywords, processing level, and the spatial and temporal extent of the collection. The ESOD allows users to search for data ads based on these metadata. Advertisement submitters can also provide additional metadata parameters to help describe the data collection.

Service Advertisements

Service ads describe any ads other than data ads. These ads fall into three categories: Web Service, Non-Web Service, and Installable Service.

- Web Service ads usually advertise a web site related to Earth Science established by some organization. Such web sites might describe an organization, provide access to specific data sets, allow users to search through data archives, give instructions on how to download software applications, or provide any other variety of information of interest to the Earth Science community. These ads generally include a hyperlinked URL to connect to the web site.

- Non-Web Service ads usually describe resources available to the Earth Science community that are not accessible over the World Wide Web. This might include references to books or journal articles, information available by mail or telephone, or instructions on how to access remote systems via telnet or dial-up access.

- Installable Service ads are a special set of ads that advertise software that can be installed by the ESOD onto your local workstation and, specifically, integrated into the EOSDIS X/Motif Desktop. Installing these ads requires that your workstation be properly configured. Performing this configuration is described on the applicable page within the ESOD application.

4.7.2 To Search All Advertisements Through ESOD

The ESOD Search All interface is a simple, free-text search engine as the screen capture of a portion of the HTML form below illustrates.

Type in one or more search words in the first form field on the page and hit return.

The search returns all data product and service advertisements containing all the search words in either their title or description. By default, 10 ads are returned at a time. If you wish, you may change these defaults by changing the selected fields in the search options portion of the page. When these fields are modified, you can submit the search by clicking on Submit.

After the search is submitted, a new page will load with the search results. The results are listed in alphabetical order. Each item in the list shows the title of the ad, a "NEW" symbol if it is less than 30 days old, and an identification of the type of ad. Click on the title of any of the ads to load the ad itself. The contents of the ad may then be reviewed.

Click on Next n hit(s) to retrieve the next set of ads in your search results.

Click on either of the Save entries . . . links, to save a downloadable version of the results to your local machine.

What should you do when . . .

Your search produces no results

First, check your spelling. If everything looks correct, then try to be less specific in your query. For instance, the query "AVHRR Iowa" may be too specific; the query "AVHRR" or "Iowa" may be more appropriate.

Try a different word or synonym. If you are searching for ads associated with "precipitation" but none are returned, you might want to try other synonyms such as "rainfall" or "snowfall" as alternate search words.

Don't use more than 10 search keywords, which is the current limit.

Your search produces too many results

Be more specific. Try to think of words that uniquely identify what you're looking for. Some words are of little value because they identify lots of items.

You get an error from the Search Tool

The Search Tool will return an error message if it has trouble with your query. If you receive cryptic text or error codes, please let us know: our address is

DAACadministrator@DAAC.xxx.xxx.

Thanks!

4.7.3 Advanced Search of Data Advertisements

The Search Data interface is a specialized search engine that allows you to search the metadata of ads for data products. When you submit an ad for data products, you define certain metadata to describe these data sets. This metadata includes attribute information, such as

- Platform and instrument name
- Temporal coverage limits
- Geographic coverage for the collection

To use this form, select one or more of the attributes, temporal, or geographic criteria.

In the Attribute Criteria section of the form, select which, if any, of the criteria you wish to select. For example, if you wish to limit your search to a particular Moderation Group, select that group.

Under the Geographic Coverage Criteria, you may specify the bounding rectangle to enclose your search. This rectangle, bounded by a maximum north and south latitudes, and maximum east and west longitudes, defines the limits of your search area. The search will return only data products that have any data within this geographic region. The default selection covers the entire globe; however, you may reduce it to be as small as you need it. Latitudes north of the Equator and Longitudes East of the Greenwich Meridian are designated as positive values. Latitudes south of the Equator and West of the Greenwich Meridian are negative values.

Under the Temporal Coverage Criteria, you may specify the beginning and ending dates of the range to enclose your search. The search returns only data products that have any data within this time period.

By default, 10 ads are returned at a time. If you want, you may change this default.

When the search criteria are completely specified, you can submit the search by clicking Search. After submitting the search, a new page will load with the search results. The results are listed in alphabetical order. Each item in the list shows the title of the ad, a NEW symbol if it is less than 30 days old, and an identification of the type of ad. By clicking on the title of any of the ads, you load the ad itself. You may then review the contents of the ad.

If you click on Next n hit(s), the next set of ads in your search results will be retrieved. If you click on either of the Save entries ... links, a downloadable version of the results is saved to your local machine.

4.7.4 Contribute an Advertisement - Basic Overview

The Contributions area of ESOD allows you, a provider of Earth Science information and data, to advertise your resources to the Earth Science Community. The first page of this area provides access to a basic overview of the Contribution process and to the three functions you can perform: Create, Update, and Delete Directory Entries.

ESOD accepts two basic types of ads: data ads and service ads. These ads must be a resource for the Earth Science community and will be available to the public.

To ensure high quality, appropriate entries in this directory, all contributions are reviewed by a moderator for the group in which you place the entry. This moderator may

- Accept without any change
- Accept with changes
- Reject your contribution

In any case, you will be notified of what happens. Contributions include new entries, updating entries, or requests to delete entries. You determine who the moderator for a group is by looking at the detailed description of the group.

Because of the moderation process, your contribution will not immediately affect the directory. So, you will be sent a electronic mail message containing your contribution. Keep this as a reference until your contribution is reviewed. You will be notified by electronic mail when it is accepted or rejected.

Before you can submit an ad, you must register your organization as a provider, if it has not already been registered. This registration is also moderated, so it takes at least a day before a new provider can submit ads. Once your provider has been registered, you will be contacted via e-mail. After your provider has been registered, you will be able to submit ads at any time.

There are two methods to submit an ad. You may either fill out an on-line form, which should meet the needs of most advertisers, or you may use an FTP template for data ads and upload this to ESOD. The FTP template provides the opportunity to enhance your data ad with additional metadata entries. The template uses ESOD-specific HTML tag parts to document those portions of your description that relate to ECS standard attributes. These ESOD-specific tag parts reside in the ESOD database to facilitate searching. Primarily, providers of advanced data should consider using this template file.

When you use the on-line form, you may also include HTML tags in your description. Please try to restrict entries to HTML 2.0 to allow everyone on the Web to see them. This allows you to include appropriate links to other locations, images, etc.

Some notes on hyperlinks between entries should be emphasized. ESOD utilizes the Web's hyperlink facilities to clarify relationships between our entries. A given organization usually offers several data collections and services. A service can apply to one or more data collections. There are three important ramifications of these hyperlink facilities.

1. Each advertisement has a unique identifier (ID) that is used by contributors to hyperlink to them.
2. If you wish to link together a set of ads, you should attempt to get the related ad IDs before contributing a data or service advertisement.
3. If you do not get the IDs when you submit the ad, you can always modify it later.

Finally, if you create several entries in the same session, it may seem a little complicated linking them together. Since they are not moderated, they "disappear" until they are approved. However, when they are submitted, they still get an ID. This ID will be displayed when the ad is submitted and in your electronic mail copy. You can use this ID to hyperlink, even though the entry isn't yet publicly displayed.

4.7.5 Contribute an Advertisement - Create an Ad

Select Provider

The first step in creating a new ad is to select your provider. Select your provider from the list and press Select. If you wish to register a new provider, select Create New Provider.

Create New Provider

If you need to create a new provider, a form will be displayed for you to provide information about your provider. On this form provide

- The title or name of your organization that will be listed as the provider
- A brief description of the provider
- Its mission

You must then select which moderation group should review your provider registration. Then, select how long your provider should be active; you may select up to 12 months, after which you must either renew your registration, or it will be removed from public display. Next, you may optionally provide a URL for the provider site. Finally, you must supply your e-mail and phone number and, optionally, any comments to the moderator to help with the review of your registration.

When you have completed this form, you may either Preview or Send Your Request to Moderator.

When you send your registration, you will receive a confirmation of your submission. This will contain a ID of the Provider number. Note this number. You will receive notification of approval of the provider by e-mail.

After you submit your provider registration, you must wait until it is approved before you can continue with an ad submission.

Select Type of Advertisement

Once you have selected (or created a new) Provider, you will go to a screen to select the type of ad you wish to create. You may choose from

- Create Data Advertisement
- Create Web Service Advertisement
- Create Non-Web Service Advertisement
- Create Installable Service Advertisement

If you choose Create Data Advertisement, you may choose either: Using Simple Fill-Out Form or Using Advanced FTP Template; the Simple Fill-Out Form is the default.

Press Create Ad to advance you to the correct form.

4.7.6 Contribute an Advertisement - Create Data Advertisement Using Simple Fill Out Form

If you select Create Data Advertisement Using the Simple Fill-Out Form, a new page will be displayed. This form requests all the basic information to submit a data ad. Here you must enter the product name (which will also be the title of the ad) and a product acronym that will be a short name for the product. The provider ID should be automatically filled out by the application by your choice on the Select Provider screen and normally would not need to be changed. The Version ID is your designation of the version, release, or revision of this product/service (1, 2, or 3; or A, B, or C; or Alpha, Beta, etc).

Then, you may optionally define a geographic coverage for the product by specifying bounding rectangle. This rectangle, bounded by a maximum north and south latitudes, and maximum east and west longitudes, defines the geographic limits of the product. The default selection covers the entire globe; however, you may reduce it as small as you need. Latitudes north of the Equator and Longitudes East of the Greenwich Meridian are designated as positive values. Latitudes south of the Equator and West of the Greenwich Meridian are negative values.

Then, you may optionally define a temporal coverage for the product by specifying the beginning and ending dates defining the limits of the product.

You may optionally define the instrument name and platform name associated with this product.

The optional product URL is the internet address to access your product. The optional User's Guide URL is the internet address to access additional documentation about your product.

The optional product revision date is your designation of when this product/service was last updated or revised.

Next, you select how long your ad should be active; you may select up to 12 months, after which you must either renew your ad, or it will be removed from public display.

If your data are stored at one of the Distributed Active Archive Centers (DAACs) and other archive centers, specify that under Archive Center.

Enter a detailed description of your data product under description, enough information to let users know what information you are providing and how they should use it. Make it as comprehensive as you feel necessary; however, try to keep to less than a screen of information to avoid overloading the user. You may also include HTML tags in your description. Please try to restrict entries to HTML 2.0 to allow everyone on the Web to see them. This allows you to include appropriate links to other locations, images, etc.

Under related services, you may establish hyperlinks between ads. ESOD utilizes the Web's hyperlink facilities to clarify relationships between our entries. If you wish to link together a set of ads, list the IDs of other ads related to this entry.

Then select which moderation group should review your ad and, optionally, any comments to the moderator to help with the review of your registration.

When you have filled out this information, press Next.

On the next screen, please fill out the contact person information. When you complete this, you may preview your ad or send it to the moderator.

When you send your ad, you will receive a confirmation of your submission. This will contain a ID of the ad number. Note this number. You will receive notification of approval of the ad by e-mail.

4.7.7 Contribute an Advertisement - Create Data Advertisement Using Advanced FTP Template

If you select Create Data Advertisement Using the Advanced FTP Template, a new page will be displayed. This page contains a link to FTP template-specific help. To download the template, click Download and follow the associated instructions.

Once you have completed the template, place it on a public (i.e., anonymous) FTP site from which ESOD can pull the file. After you have placed the file on public FTP site, insert the address of the this site in the first field of the on-line form on the same page from which you downloaded the template (Create Data Advertisement Using the Advanced FTP Template -> Download).

Then select which moderation group should review your provider registration. Finally, supply your e-mail and phone number and, optionally, any comments to moderator to help with the review of your registration.

When you send your ad, you will receive a confirmation of your submission. This will contain a ID of the ad number. Note this number. You will receive notification of approval of the ad by e-mail.

4.7.8 Contribute an Advertisement - Create Various Service Advertisements

If you selected any of the Create Web/Non-Web/Installable Service Advertisement options, a new page will be displayed. The forms for all three of these ads are very similar and will be described together. Special fields will be discussed separately.

All the forms request that you enter a Title for the Advertisement.

Enter a detailed description of your service under description, enough information to let users know what information, software, or service you are providing and how they may use it. Make it as comprehensive as you feel necessary; however, try to keep to less than a screen of information to avoid overloading the user. You may also include HTML tags in your description. Please try to restrict entries to HTML 2.0 to allow everyone on the Web to see them. This allows you to include appropriate links to other locations, images, etc.

Next, select how long your ad should be active; you may select up to 12 months, after which you must either renew your ad or it will be removed from public display.

The provider ID should be automatically filled out by the application by your choice on the Select Provider screen and normally would not need to be changed.

Under Related Services, you may establish hyperlinks between ads. ESOD utilizes the Web's hyperlink facilities to clarify relationships between our entries. If you wish to link together a set of ads, list the IDs of other ads related to this entry.

Then select which moderation group should review your provider registration. Finally, supply your e-mail and phone number and, optionally, any comments to the moderator to help with the review of your registration.

In the Web Service Advertisement Form, you also enter a Service URL, which is the internet address to access your service.

The Installable Service Advertisements are a special set of ads that advertise software that can be installed by the ESOD directly onto a user's workstation and specifically integrated into the EOSDIS X/Motif Desktop. If you wish to turn one of your applications into an installable application, you'll need to follow a set of special instructions. In the Installable Service Advertisement Form, you also enter a FTP URL. This is a public (i.e., anonymous) FTP site from which ESOD can pull the installable application after you have prepared it, tarred and compressed it into a file. You must also provide the size of the application after it is untarred.

When you have completed this form, you may either Preview or Send Your Request to Moderator.

When you send your ad, you will receive a confirmation of your submission. This will contain a ID of the ad number. Note this number. You will receive notification of approval of the ad by e-mail.

4.7.9 Contribute an Advertisement - Update an Ad

If you select Update Directory Entry, you access a form in which you can enter the ID of the ad you wish to update. If you don't remember the ID, you can select Browse Directory Entries to review an alphabetical listing.

Once you enter the ad ID and submit it, the appropriate form based on the type of ad is displayed. These forms are similar to the Create Directory Entry Forms; however, the form fields are already filled with the existing information. You need only update the fields that you wish to change.

Supply your e-mail and phone number and, optionally, any comments to moderator to help with the review of your update request.

When you send your update, you will receive a confirmation of your submission. This will contain a ID of the Advertisement number. Note this number. You will receive notification of approval of the update by e-mail.

4.7.10 Contribute an Advertisement - Delete an Ad

If you select Delete Directory Entry, you access a form in which you can enter the ID of the advertisement you wish to delete. If you do not remember the ID, you can select Browse Directory Entries to review an alphabetical listing.

Once you enter the ad ID and submit it, the ad is displayed. To delete the ad, supply your e-mail and phone number and, optionally, any comments to moderator to help with the review of your deletion request.

When you send your deletion request, you will receive a confirmation of your submission. This will contain a ID of the Advertisement number. Note this number. You will receive notification of approval of the deletion request by e-mail.

4.8 Document Acquisition Search Tool

The Data Acquisition Request Tool (DART) provides motif-style graphical user interfaces (GUIs) to enable science users to submit Data Acquisition Requests (DARs), which are user scheduling data acquisition requests for the Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) instrument. These requests are submitted through ECS to the ASTER Ground Data System (GDS) in Japan. The ASTER GDS controls scheduling of the ASTER instrument and provides the collected data as level 1A and level 1B data to the EROS Data Center.

4.8.1 Main Window

The Main Window of the Data Acquisition Request Tool (DART) uses a tabstack for primary navigation tool.

The three tabs on the main window are:

- Summary, which allows you to view a condensed presentation of xAR work, query parameters, and the returned results of submitted xAR request that are stored locally (on a hard drive or LAN).

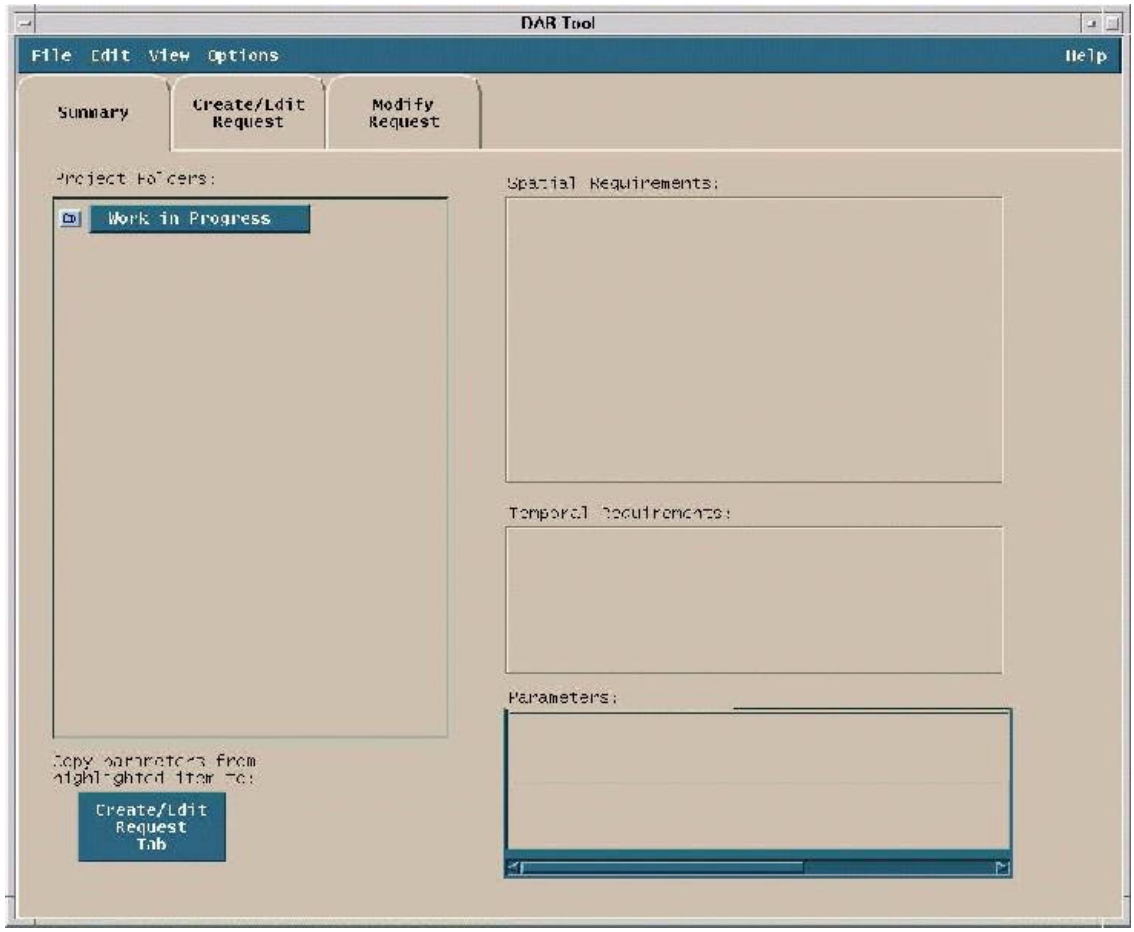


Figure 4-1. Summary Tab

- Create/Edit Request allows you to create a new xAR request or to edit the parameters of a previous xAR Request that is locally stored.

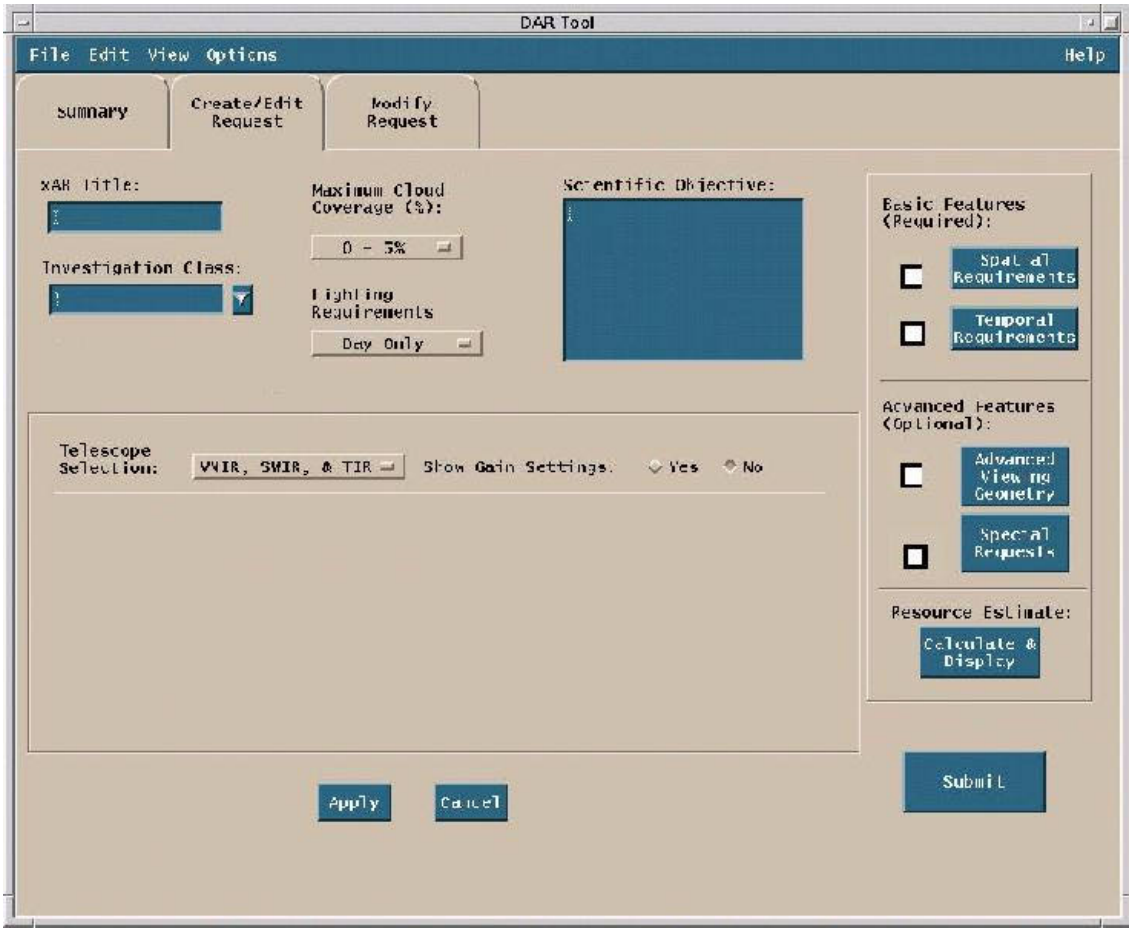


Figure 4-2. Create/Edit Request Tab

- Modify Request allows you to search the ASTER database located in Japan for level 1A and level 1B data products stored there and fulfill the parameters of your request.

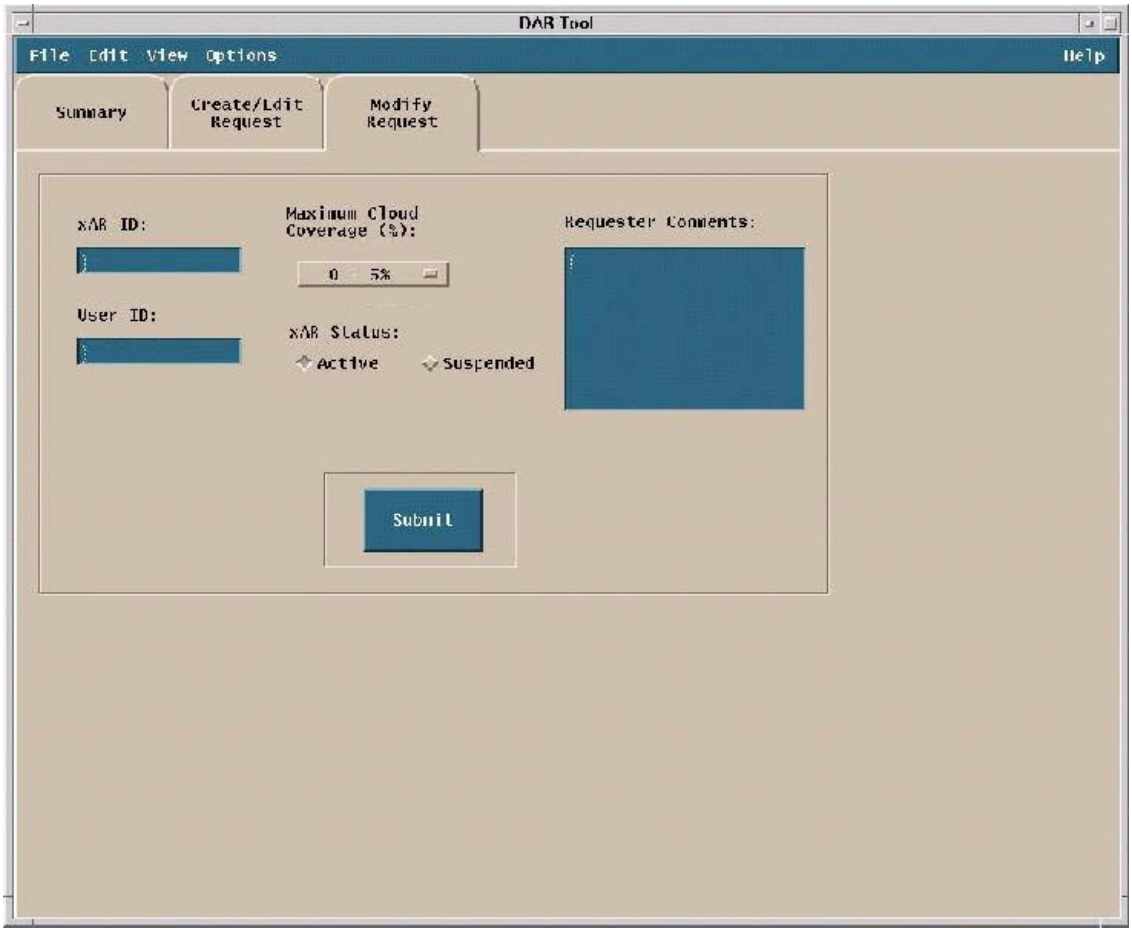


Figure 4-3. Modify Request Tab

When you launch the DAR tool from the desktop, the first tab, Summary, appears with the following four functional areas:

1. Project Folders
2. Spatial Requirements
3. Temporal Requirements
4. Parameters

Project Folders are similar to a file manager. They display the xAR work that is stored locally (a hard drive or LAN), including xAR requests you may be still working on and the parameters of xARs that have been sent.

1. Select an xAR Request and then the copy parameters button to populate the Spatial Requirements and Temporal Requirements and discrete fields with information relevant to the highlighted request. For instance, if you highlighted a folder in the Project Folders area containing all the results of a specific request,
2. The Spatial Requirements area would fill with a low-resolution image of the area of interest with outlines of all the xAR images that fulfill your request.
3. The Temporal Requirements area would populate with the xAR request lifetime, repeat interval, and acquisition windows. When a single xAR is highlighted in the Projects folder area, a low-resolution image of the spatial data from that xAR appears in the Spatial Requirements areas and information about the specific xAR lifetime appears in the Temporal Requirements area.
4. The Parameters would populate with a text list of all the saved parameters for any DAR request that is highlighted in the Project Folders area.

If you wish to edit the contents of a xAR request stored locally (i.e., finish an incomplete xAR request that was saved or edit a previous xAR request for which the parameters had been saved), then you can select the desired item from the Project Folders list by clicking on it and then depressing the pushbutton below the Project Folders area that directs you to Copy parameters from highlighted item to: a button that says to Create/Edit Request Tab.

The action will cause all parameters stored for the highlighted item to populate the appropriate fields in the Create/Edit Request tab where the you may inspect and/or edit them.

4.8.2 Create/Edit Request

From the Create/Edit Request tab, you may access all fields necessary or desirable for completing a DAR request or to edit existing xAR parameters. Navigate the following three screens to create or edit a xAR request. In addition, there are several additional functions that are available via popup windows.

The first screen shows the contents of the Create/Edit Request tab, which contains many of the elements necessary to create or edit a DAR request. It also has a series of pushbuttons to invoke the spatial requirements and temporal requirements window as well as other advanced user options and special requests. Each DAR element is discussed in greater detail below.

The DAR elements controlled directly on the Create/Edit Request tab include:

- xAR Title
- Investigation Class
- Maximum Cloud Coverage
- Lighting Requirements
- xAR Status, Scientific Objective
- Telescope Selection, and Gain Settings

The secondary windows and dialogs that can be spawned from the Create/Edit request tab include:

- Spatial Requirements
- Temporal Requirements
- Advanced Viewing Geometry
- Special Requests
- Resource Estimate

To invoke the secondary windows or popup dialogs for each of these functional groups, press the appropriate pushbutton on the right-hand side of the interface. A checkbox has been placed to the left of each pushbutton indicating that you've visited the location. This gives you a visual reference to show screens you've visited and saved entries or changes. So, when you visit a secondary window or popup screen, make entries or edits, and apply them, a checkmark appears in the checkbox next to the pushbutton that invoked the window in which the entries or changes were made.

You must enter spatial and temporal requirements to complete a xAR request. In these fields, specify the area and time, respectively, for the ASTER image data you are requesting. Advanced Viewing Geometry includes the functionality to specify look and Sun angle if there are specific requirements for a particular DAR request. Special Requests include functionality to increase the priority of a request or expedite the delivery of scientific information. The Resource Estimate option executes an algorithm that estimates the number of scenes that will be returned from the xAR request.

Finally, there is a button labeled Submit in the lower right-hand corner of the Create/Edit tab. When you have supplied all the xAR parameters to be input, press Submit to send the xAR request to ASTER Ground Data System (GDS).

4.8.3 Data Elements of Create/Edit

xAR Title

xAR Title is a user-definable field containing a text-entry field allowing an entry of up to 32 characters. With it you may supply a name or xAR Title to the DAR. The xAR Title is the name by which the DAR request will be stored, unless you otherwise specify.

Investigation Class

Under the heading Investigation Class is a combination box containing a list of geographical, climatological, and atmospheric sciences. Through the combination box, select the category of scientific research that most closely describes the research for which the DAR request is being placed.

Maximum Cloud Coverage

Specify the maximum acceptable cloud coverage for scene images taken by the ASTER telescopes with the Maximum Cloud Coverage option button. The options button contains a list of all the allowed threshold choices for Maximum Cloud Coverage. Cloud Coverage is one of three parameters that can be modified after the DAR has been submitted.

Lighting Requirements

The Viewing Geometry area allows you to specify the Lighting Requirement, Sun Angle, View Swath, and Look Angle for the query. Lighting requirements are selected via a radio box and the default choice is Day Only.

Scientific Objective

A 256 character text field is provided so that researchers can provide a brief statement explaining the scientific objectives that a given DAR request is intended to support.

Telescope Selection

On the ASTER instrument platform, three telescopes are available for observing ASTER DAR data:

1. Visible and Near-Infrared spectrum (VNIR)
2. Short wave and Infrared spectrum (SWIR)
3. Thermal Infrared spectrum (TIR)

The DAR design allows you to specify which telescope(s) should be activated for the xAR request. To select the telescope for your requested DAR observation, go to the Create/Edit screen section labeled Telescope Selection.

Of the three telescopes available, you may select one of five different telescope combinations. An option list is provided to pick from the five available combinations. The five combinations available to the user include

- VNIR, SWIR, & TIR -- The full activation of all bands of the VNIR, SWIR, and TIR telescopes together.
- VNIR Only -- The activation of all bands of the VNIR telescope only.
- VNIR Stereo Only -- The activation of only the stereo settings of the VNIR telescope.
- SWIR & TIR -- The activation of all bands of the SWIR and TIR telescopes. In this mode, no bands of the VNIR telescope are activated.
- TIR Only -- The activation of the TIR telescope only. In this mode, no bands of the VNIR and SWIR telescopes are activated.

Gain Settings

In addition to selecting the telescopes for the DAR observation, you may also request changes to the Gain Settings for the different band ranges available on the VNIR and SWIR telescope. VNIR has three bands to observe three different ranges of wavelength in the visible spectrum of light; SWIR has six bands to observe six different ranges within the short wave spectrum. Because of the nature of the observation made by TIR telescope (thermal data), it has no user-defined gain settings. Immediately beneath the Telescope Selection area is another section labeled Gain Settings. In the Gain Settings area, you may request that the gain settings be changed for any or all bands of the VNIR or SWIR telescopes during the data take for their DAR request. For Bands 1, 2, and 3 (VNIR), you may set select from high, medium, and low gain settings. For Bands 4, 5, 6, 7, 8, and 9 (SWIR), you may set select from high, medium, low, and very low gain settings. By default, the gain settings for all bands for both telescopes are set to high. The gain setting for each band can be changed via on option button that is provided on the interface for each user-modifiable band.

The ASTER science team anticipates that a majority of DAR requests will use the default gain setting (high) for all bands during most observations, making it unnecessary for the gain setting area be visible at all times, so, the radio box labeled, Show Gain Settings (found next to the Telescope Selection options button) allows you to control whether or not the Gain Setting controls are visible. The default setting for Show Gain Settings is No. In the No position, gain setting controls are not displayed. In the Yes position, the Gain Setting controls become visible immediately below the Telescope Selection area.

Different telescope combinations affect the bands that are available for a particular observation. For instance, when you select VNIR Only, you need not set the gain settings for the SWIR telescope since you've specified that SWIR not be used. In instances where a particular telescope setting makes particular gain setting choices unnecessary, the unavailable gain setting button choices are disabled to ensure that you may change only the gain settings relevant to your telescope selection. The following list indicates all five possible telescope combinations that are available and the bands that are enabled as a result: When VNIR, SWIR, and TIR is selected, all bands are enabled. When VNIR Only is selected, Band 1, Band 2, & Band 3 are enabled. Bands 4-9 are disabled.

When VNIR Stereo Only is selected, only Band 3 is enabled. Controls for all other bands are disabled. When SWIR and TIR is selected, Band 4, Band 5, Band 6, Band 7, Band 8, and Band 9 are enabled. Bands 1-3 are disabled. When TIR Only is selected, all bands are disabled.

When you've completed the Create/Edit main screen, depresses Apply to accept the settings.

4.8.4 Spatial Requirements

The Spatial Requirements Screen allows you to define an Area of Interest (AOI) and specify coverage criteria such as sampling, cross-track fragmentation and area of interest duration for the request. The Spatial Requirements screen uses a tabstack to organize a variety of functions related to the map display in a way that is logical and that keeps them in close proximity to the map display.

The functional organization includes three tabs:

- Pan and Zoom
- Map Display Controls
- Coverage Details

Currently, the functionality of the map display had not been implemented. This design may undergo some modifications to accommodate the mapping tool as it is integrated to support the necessary mapping functionality. However, to the extent possible, this design will be preserved.

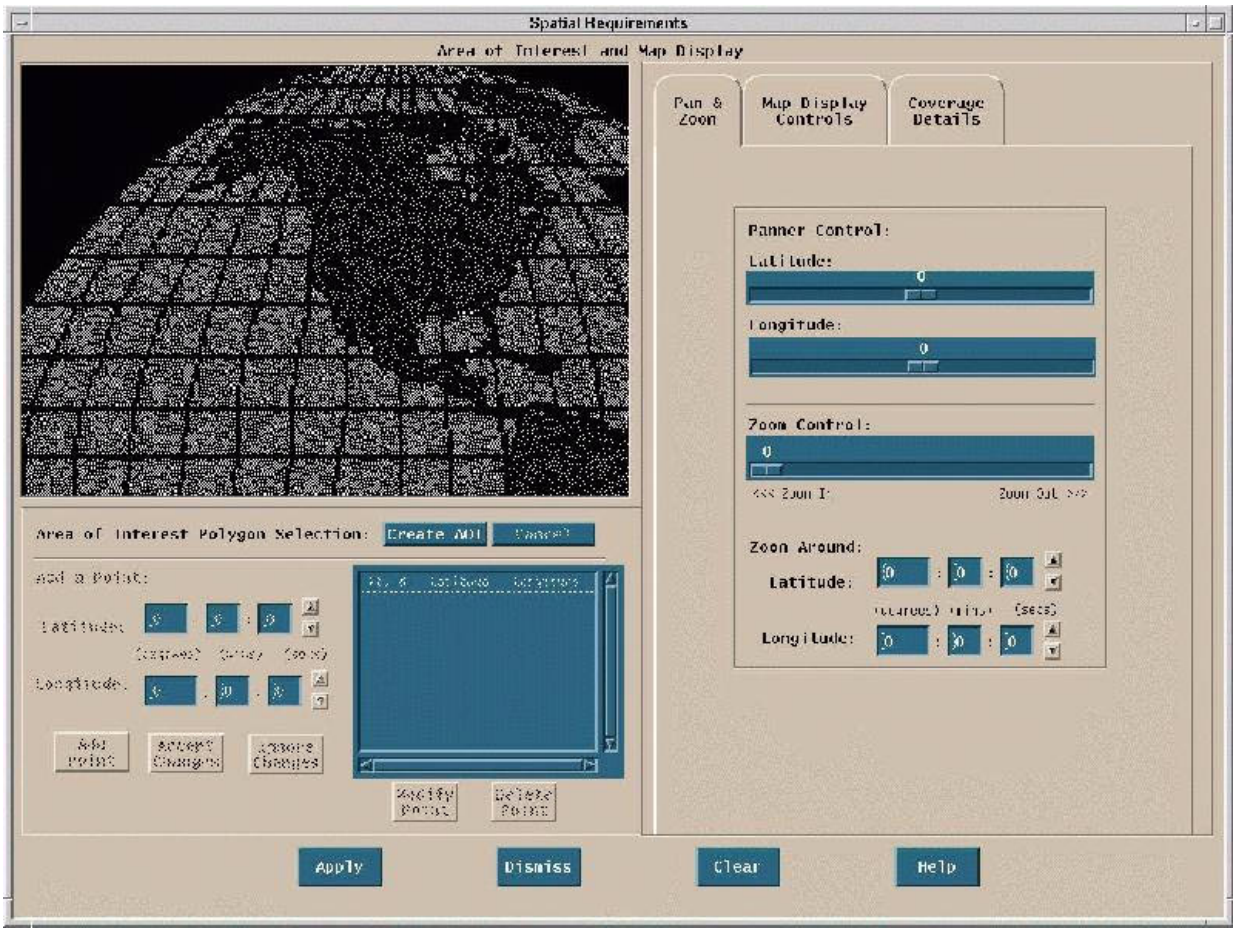


Figure 4-4. Pan & Zoom

The Spatial Requirements screen has several states on the map. These states allow you to perform various spatial selections while working with the map rather than the options of the Pan and Zoom tab. Select the state you would like to use by pressing the right mouse button to display the pulldown menu of state choices. Select Add Points, Pan, Zoom In, or Zoom Out from the pull down menu.

Each selection allows you to work directly with the map. You may also go to the Pan and Zoom tab and AOI and Map Display page to work with the options provided that perform the same functions as the states do when working with the map.

Creating the Area of Interest Polygon

Look immediately below the map display for a group of options labeled AOI Polygon Selection. This area contains the options that control text entry and modification of points in the AOI polygon. Most of these controls are initially disabled except for a pushbutton labeled Create AOI. When you depress the Create AOI pushbutton, the other AOI Polygon Selection options are enabled, and the map display area enters the polygon selection mode. In this state, an AOI polygon can be defined by one of two mechanisms: mouse operations on the GIS or text entry.

After Create AOI has been depressed, you will be able to move that mouse over the map display and click the first mouse button to place a point of the AOI polygon, then continue to place points. After each point is placed, the polygon should be redrawn on the map. Also, the coordinates for each point placed by the mouse operation should appear in the extended list widget in the Area of Interest Polygon Selection section.

The other method to enter points in the AOI polygon is to enter the latitude and longitude of the point (if the coordinates are known) in the text fields provided and then depress the button labeled Add Point. You will also be able to edit or delete a point via mouse operation or by keyboard. To edit a point via mouse, you will be able to click on the point where it is located on the map and drag it to a new location. Another option is to click on or tab to a point entry in the extended list to highlight it and depress the button labeled Modify Point. This action will result in the latitude and longitude text fields becoming repopulated with the coordinate data selected. At this point, you may modify the entry in the appropriate text fields and depress the accept changes or ignore changes button to either apply or reject the edit action.

Map Display Controls

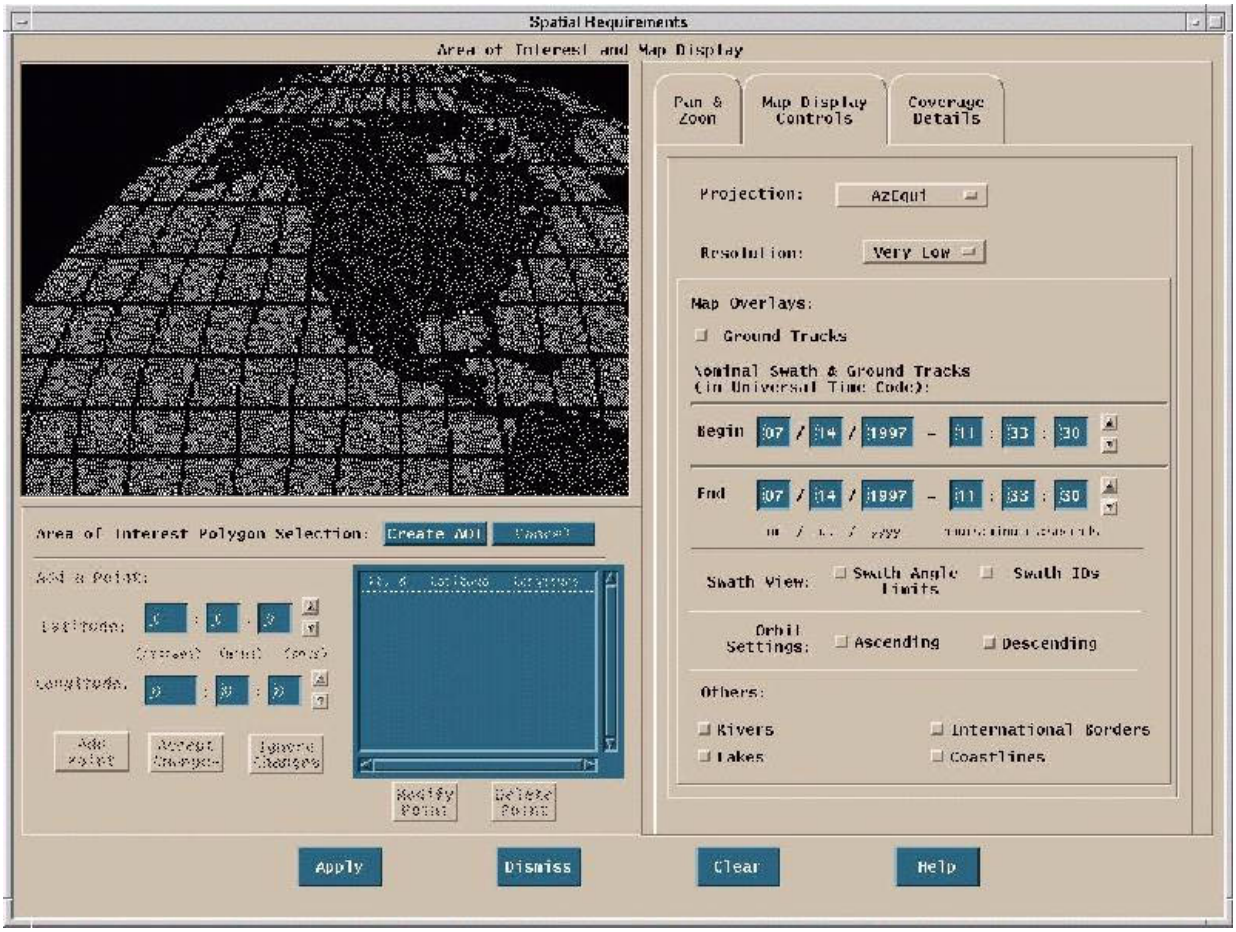


Figure 4-5. Map Display Controls Tab

The second tab is Map Display Controls.This tab contains the controls responsible for map display, including the type of map, its resolution quality, and the projection of map overlays (such as rivers, borders, etc.). In addition, this includes views of the ASTER satellite's ground track and view swath for a user-specified period.

You will use a combination box to select both the projection and the resolution of the DAR. The ground track and swath views begin and end date and times can be entered using the keyboard into a text field or with the up and down arrows to the right of the text fields (these must be in Coordinated Universal Time). The Swath View has two checkbox choices: Swath Angle Limits and Swath Ids. The Orbit Settings have the checkbox choices of Ascending or Descending. The final selections on the Map Overlay section are four checkboxes that a user may check to identify the requests to have rivers, lakes, international borders, and/or coastlines included in their DAR.

Coverage Details

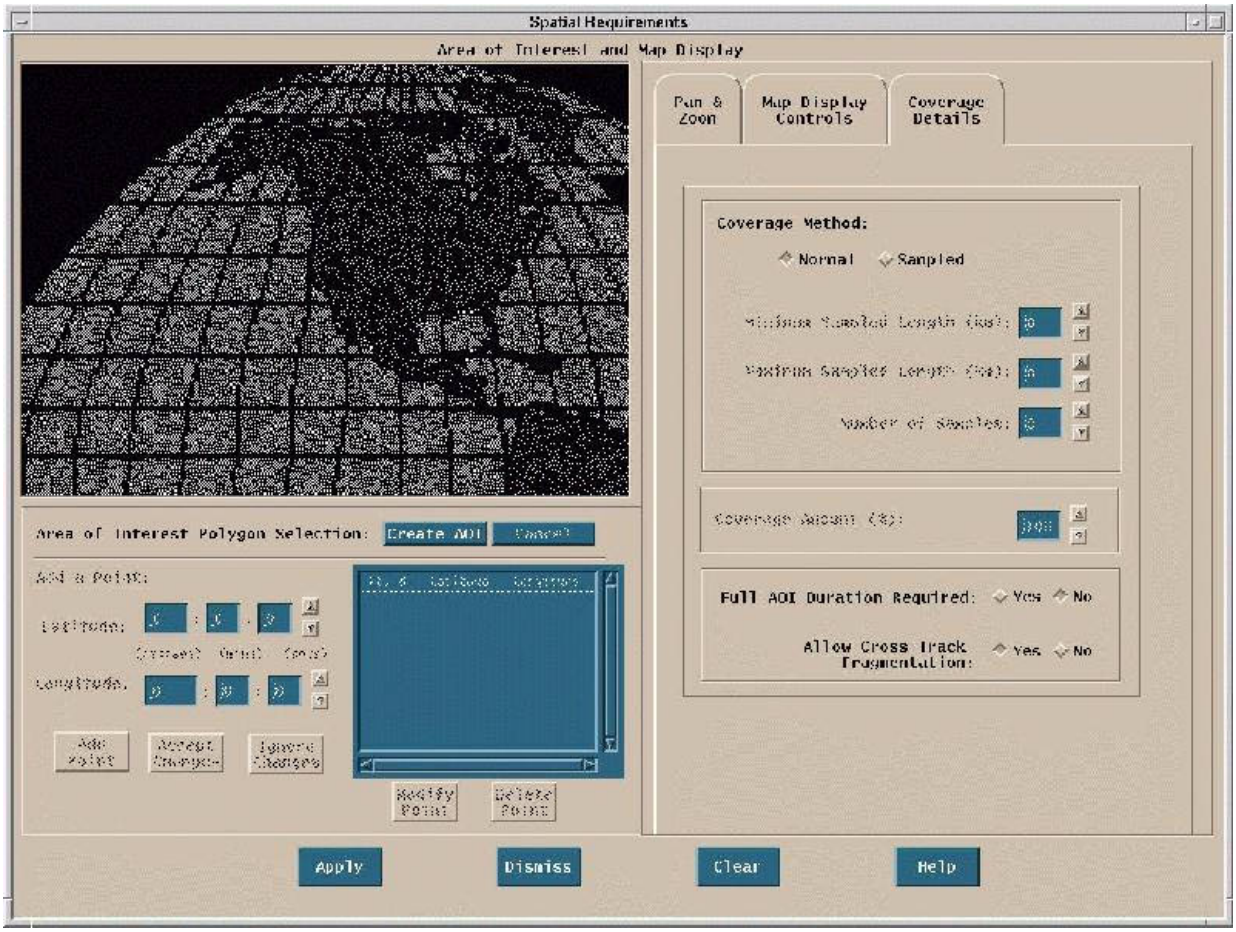


Figure 4-6. Coverage Details Tab

The third is Coverage Details. Primarily, this tab possesses the controls responsible for selecting coverage method (normal or sampled), specifying whether full duration AOI is required (yes or no), and specifying cross-track fragmentation (yes or no). If you select coverage method, normal, the controls used to set the sampling parameters (minimum sampled length, maximum sampled length, number of samples, and coverage amount) should be disabled (greyed-out). Even though Coverage Amount is disabled, it should show a value of 100 percent. If you select sample for coverage method, this interface enables the controls used to set the sampling parameters (minimum sampled length, maximum sampled length, number of samples, and coverage amount), and the you may set these parameters.

When you've selected the AOI and set all the desired parameters set, depress Apply to accept the settings. When you've pressed Apply, the check box beside the Spatial Requirements push button on the Create/Edit Request becomes checked-off and the user-specified spatial requirements are applied.

4.8.5 Temporal Requirements

Use this window to specify the time (in days) that the Area of Interest (AOI) described in a DAR request are to be observed or request multiple observations at regularly scheduled intervals in a single DAR request. This window allows you to enter temporal information either textually or graphically.

xAR Lifetime

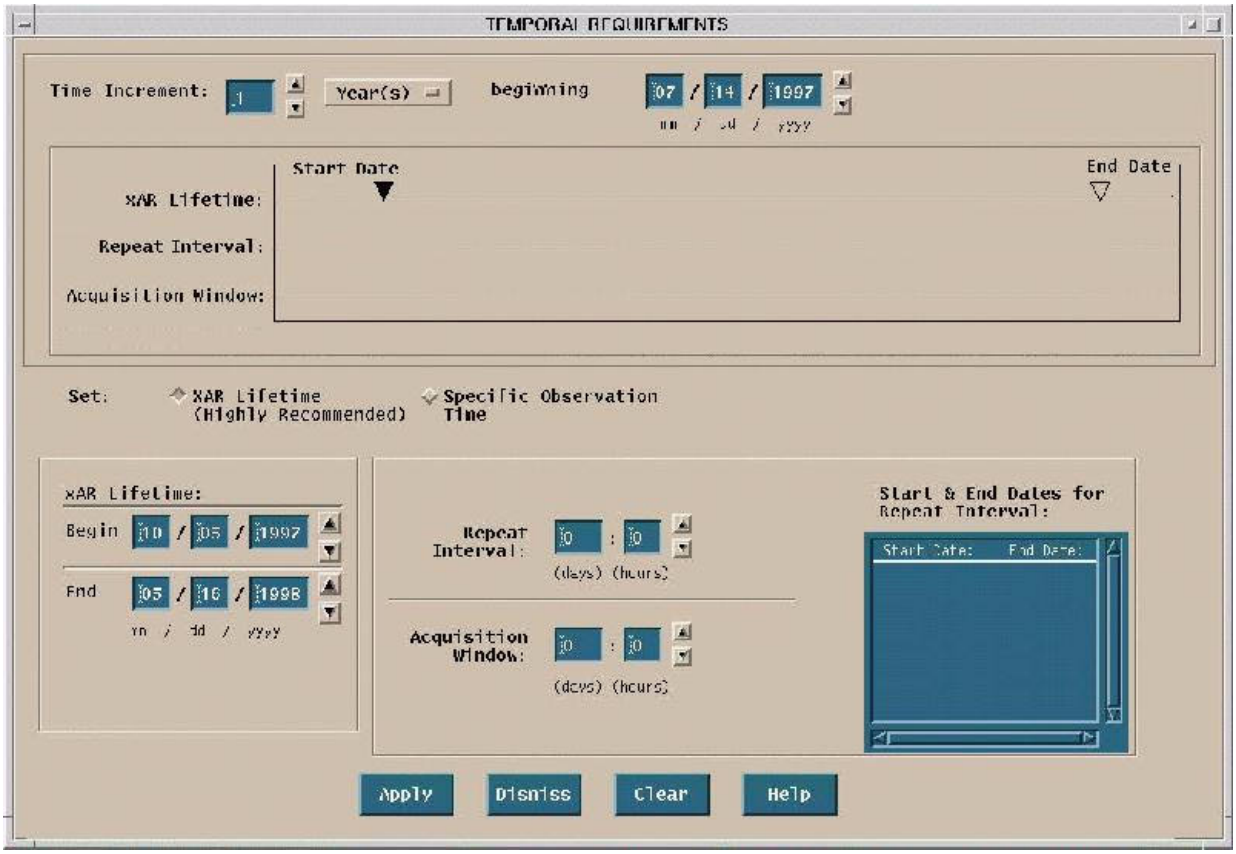


Figure 4-7. xAR Lifetime Window

Use this screen to select the times at which observations for a specific xAR is to occur. For most observations, you must set the xAR Lifetime, which is the duration over which image data can be taken. So, you enter the date you wish observations to start and then, the date you wish them to end.

In some instances, you may wish to request multiple observations of the same AOI at regularly scheduled intervals rather than get a steady stream of data during the entire xAR lifetime. If the you decide not to have a steady stream of data about a particular AOI but want image data from the same AOI at regularly timed intervals, choose the option to request multiple observations of the AOI.

Set two parameters to request multiple observations: Repeat Interval and Acquisition Window. They are interdependent, so both must be set to create multiple observations.

- Repeat Interval, expressed in days and hours, is the amount of time separating the start of each desired observation.
- Acquisition Window, also expressed in days and hours, refers to the duration of a data take within each Repeat Interval.

The interface can be used to enter the parameters of xAR Lifetime, Repeat Interval, and Acquisition Window both graphically and textually.

Time Increment, at the top of the screen, contains the text fields, arrow buttons, and option list for you to set the amount of time that is displayed in the timeline located directly beneath. The timeline, part of the Temporal display, is primary where you'll enter temporal information graphically. You will be able to interact with the Start Date and End Date pointers in the Temporal to set the xAR Lifetime. The Acquisition Window and Repeat Interval appear on separate lines, directly beneath the line for the xAR lifetime. You may interact on a timeline for both these parameters; the sequence doesn't matter.

Entries for xAR Lifetime, Repeat Interval, and Acquisition Window made in the Temporal display are represented automatically in the appropriate text fields described following. Likewise, entries or edits made in the text fields for xAR Lifetime, Repeat Interval, and Acquisition Window will automatically update the Temporal display. All Repeat Interval and Acquisition Window information is displayed in two places: on the Temporal display and in an Extended List found to the right of the text controls labeled Start & End Dates for Acquisition Interval.

Specific Observation Time

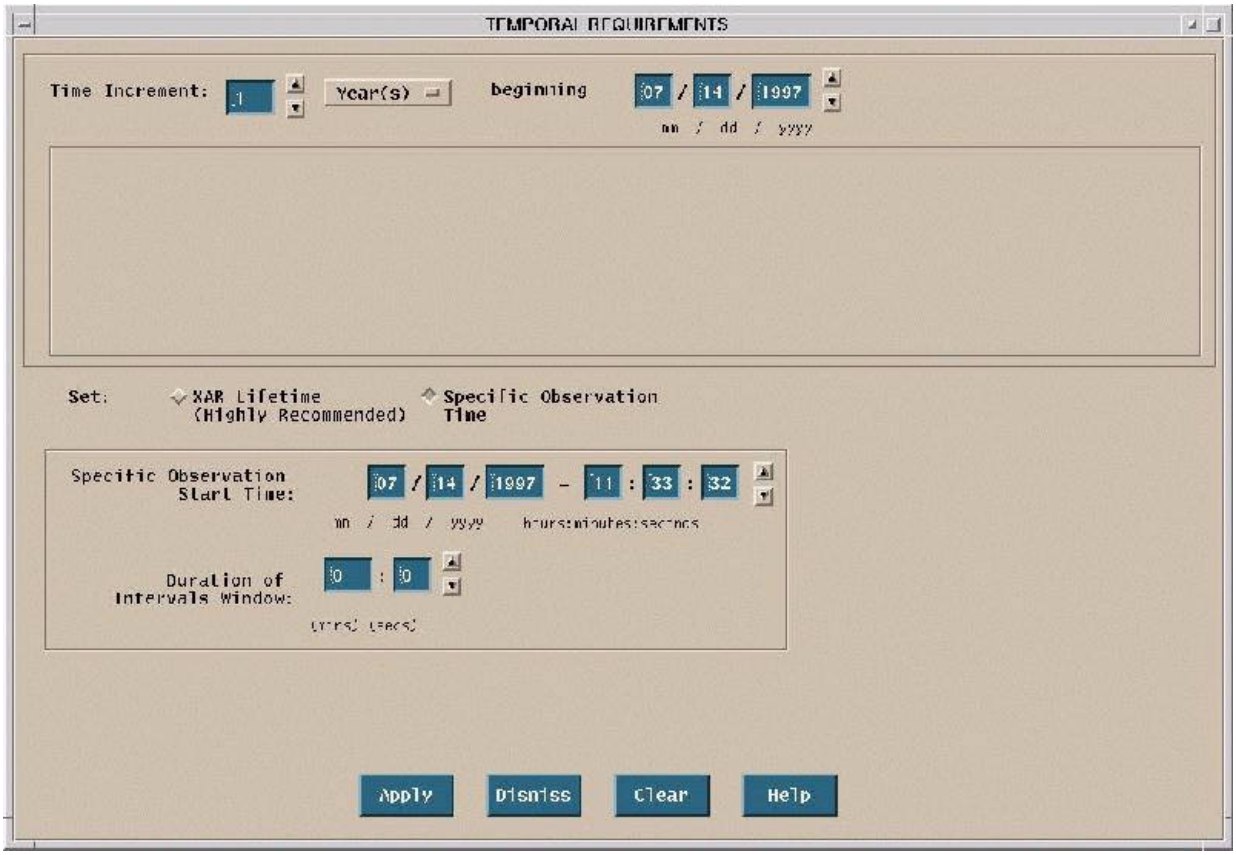


Figure 4-8. Specific Observation Time Window

In a few instances, you may wish to select a Specific Observation Time. The Specific Observation Time option should not be used often, and its use is constrained by both time and space. If you select this option, you must provide a specific day and time as well as the duration of time that ASTER instruments are to be left on. Day and time must be specified with precision to the second, and duration is expressed in minutes and second. Due to limitations of satellite hardware, the duration of a specific observation cannot exceed 16 minutes per orbit. Also, if you enter a Specific Observation Time, any AOI data you enter is disregarded because the ASTER instruments can image only what is directly beneath the satellite at the specified time.

To set a Specific Observation Time, you must select Specific Observation Time. This button is immediately below the Temporal display. Once the Specific Observation Time is selected, the Temporal display and Time Increment controls are disabled. Also, the text fields to set xAR Lifetime, Repeat Interval, and Acquisition Window are replaced with text fields to set the start time and duration of the Specific Observation Time. Specific Observation Time can be set only with these text controls. No graphical input is possible.

When all temporal requirements for the DAR Request have been set, depresses the Apply button to accept the settings. When Apply is pressed here, the check box beside the Temporal Requirements pushbutton of the Create/Edit Request tab becomes checked off.

4.8.6 Advanced Viewing Geometry

This option allows you to specify acceptable look angles, Sun angles, and/or view swaths for a given DAR request. To access any or all these options, press Advanced Viewing Geometry found on the Create/Edit Request Tab. That action invokes an Advanced Viewing Geometry popup dialog containing look angle, Sun angle, and view swaths options.

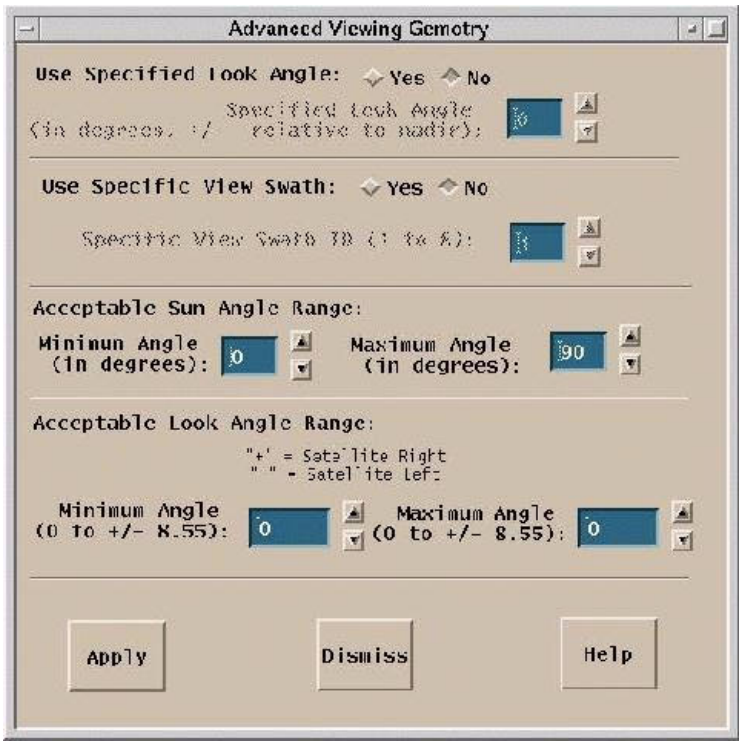


Figure 4-9. Advanced Viewing Geometry Option

Select Use Specified Look Angle and Use Specific View Swath by using the radio boxes provided. The default for both is No. If you select Yes to Use Specified Look Angle, then you must provide the Specified Look Angle. If you select Yes to Use Specific View Swath, then you must provide an integer value for Specific View Swath ID. The fields to enter Use Specified Look Angle and Use Specific View Swath are disabled until Yes for either option is selected.

You may specify minimum and maximum degree angles for the Sun angle and look angle by either numeric text entry or by using the arrows buttons to the right of the text field to set numeric values within the field.

When you've set the desired cloud coverage, data transmission requirements, and viewing geometry, depress OK to accept the settings. When OK is pressed here, the check box beside Advanced Viewing Geometry of the Create/Edit Request tab gets checked off.

4.8.7 Special Request

Here you may specify special treatment of alternate arrangements for the delivery of ASTER data. Invoke a Special Requests by depressing Special Requests on the Create/Edit Request Tab.

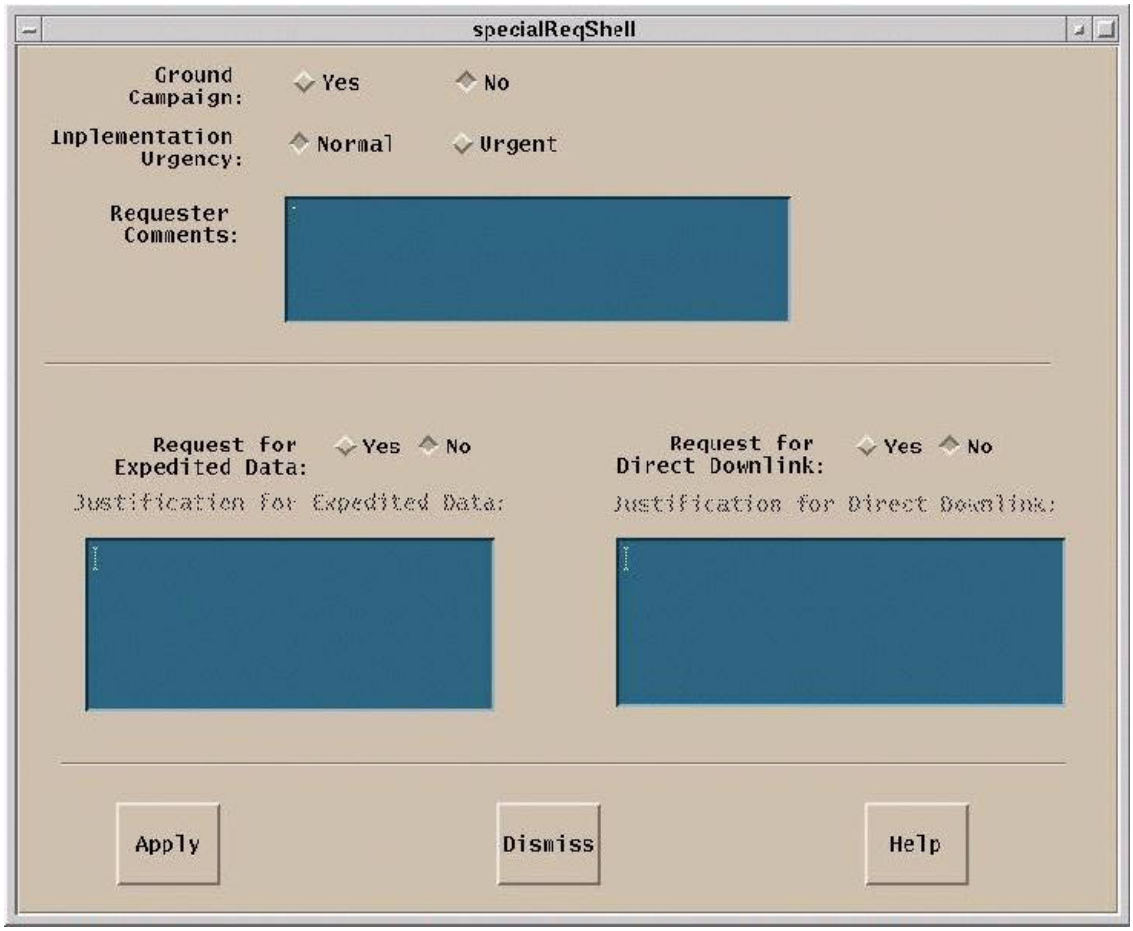


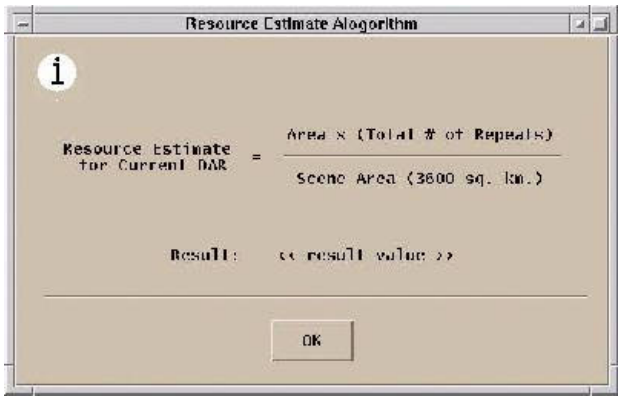
Figure 4-10. Special Request Dialog

On this dialog, specify ground campaign and implementation urgency, request for expedited data or direct downlink, and provide additional comments on the nature of the science, or to justify special or preferential treatment of data.

One of your choices, Implementation Urgency, allows you to choose between Normal and Urgent priority. The default setting is Normal. If you select Urgent, the xAR Lifetime must be set to begin and end within 18 days following the request. Any request in which the xAR lifetime exceeds 18 days cannot be flagged Urgent. Conversely, if you flag a request Urgent prior to setting Temporal Requirements and attempt to enter a xAR lifetime end time that exceeds18 days (following the day the request is being submitted), your entry will not be allowed.

4.8.8 Resource Estimation Algorithm Dialog

The Resource Estimate option executes the following algorithm that estimates the number of scenes that will be returned from the xAR request.



AOI x total # of repeats = #of scenes 3600 sq km (1 scene area)

Figure 4-11. Resource Estimation Option

This estimate is calculated when you depresses Resource Estimate, found on the Create/Edit Request tab of the DART main window. The result of the calculation is displayed in an information dialog; depress OK after viewing the result.

4.8.9 xAR ID Dialog

Submit is in the lower right-hand corner of the Create/Edit tab immediately below the checklist on the Create/Edit Request tab of the DART main window. When you've supplied all the xAR parameters to be input, depress Submit to send the xAR request to ASTER GDS. When Submit is pressed, a xAR ID should be returned to you from GDS several seconds later and displayed in a message dialog.

Figure 4-12. Submit

If you haven't supplied all required elements of the DAR request before you depress Submit, a dialog appears advising you of the parameters that you still need to define.

4.8.10 xAR ID Database Query

4.8.11 Submission Information for Current xAR

When you view the parameters for an existing or previously submitted xAR, you may wish to see the xAR ID, the original xAR submission date, or the last date modified. Also, if DART capabilities are extended to instruments aside from ASTER at some point in the future, it may be useful to see what instrument(s) were specified to execute the xAR request.

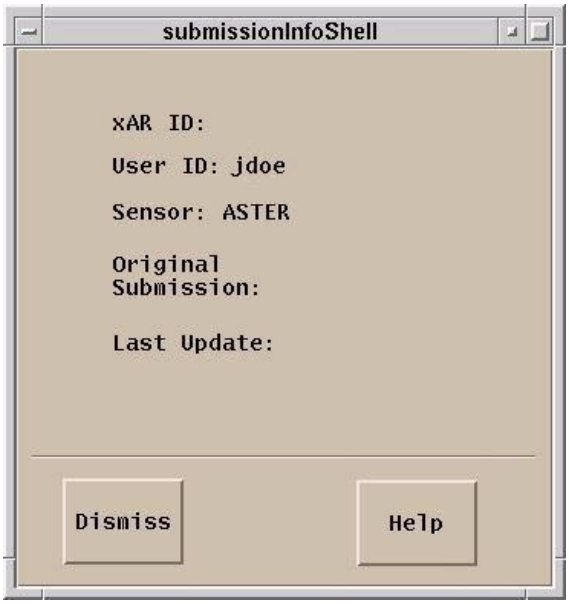


Figure 4-13. View

Under the View menu, depressing Submission Information for Current xAR opens a dialog box that allows you to see the xAR ID, Requester ID, Sensor, Original Submission date, and last update of a DAR request that has been previously submitted to ASTER GDS.