

DMSO MEL-SUM-PAPER-0310

**INTEGRATED NATURAL ENVIRONMENT
AUTHORITATIVE REPRESENTATION PROCESS
(INE ARP)**

**MASTER ENVIRONMENTAL LIBRARY
(MEL)**

MEL 3.1
SOFTWARE USER MANUAL



June 2001

**DEFENSE MODELING AND SIMULATION OFFICE
ALEXANDRIA, VA**

Distribution Statement A. Approved for public release; distribution is unlimited

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Interim Draft

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PREPARED FOR:

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REVIEWED BY:

MEL PROJECT LEAD

APPROVED BY:

INE PROGRAM MANAGER
DEFENSE MODELING AND SIMULATION OFFICE

FOREWORD

The Department of Defense (DoD) Modeling and Simulation Master Plan (MSMP), DoD 5000.59-P, October 1995, identifies sub-objectives for providing authoritative representations of the natural environment, and discusses creation of Modeling and Simulation Executive Agents (MSEAs). Under separate letters the Under Secretary of Defense for Acquisition, Technology, and Logistics (USD(AT&L)) designated the Defense Mapping Agency (now part of the National Imagery and Mapping Agency), the Department of the Navy, and the Department of the Air Force as the MSEAs for the natural terrain, ocean, air, and space environments respectively.

The Master Environmental Library (MEL) project is sponsored by the Defense Modeling and Simulation Office (DMSO), and managed under their Integrated Natural Environment (INE) Program. This Software User Manual (SUM) is a configuration document for the MEL, and will be reviewed and updated as required to maintain its currency.

RECORD OF CHANGES

CHANGE NUMBER	DATE OF CHANGE	CHANGE DESCRIPTION	DATE ENTERED	ENTERED BY

TABLE OF CONTENTS

FOREWORD.....iii

RECORD OF CHANGES.....iv

TABLE OF CONTENTS.....v

LIST OF FIGURESvii

SECTION 1. SCOPE 1

 1.1 IDENTIFICATION 1

 1.2 SYSTEM OVERVIEW 1

 1.3 DOCUMENT OVERVIEW 3

SECTION 2. REFERENCE DOCUMENTS 4

 2.1 GOVERNMENT DOCUMENTS..... 4

 2.1.1 *Standards*..... 4

 2.1.2 *Other Publications* 4

 2.2 NON-GOVERNMENT DOCUMENTS..... 4

SECTION 3. SOFTWARE SUMMARY..... 5

 3.1 SOFTWARE APPLICATION 5

 3.2 SOFTWARE INVENTORY 5

 3.3 SOFTWARE ENVIRONMENT 5

 3.4 SOFTWARE ORGANIZATION AND OVERVIEW OF OPERATION 5

 3.5 CONTINGENCIES/ALTERNATIVE STATES/MODES OF OPERATION 7

 3.5.1 *Resource Site Not Responding*..... 7

 3.5.2 *MEL Access Site Is Not Responding*..... 7

 3.6 SECURITY AND PRIVACY 8

 3.6.1 *U.S. Government System* 8

 3.6.2 *Limits of Liability*..... 8

 3.6.3 *Limits of Endorsement* 8

 3.6.4 *Requirements for Labeling Classified MEL* 8

 3.7 ASSISTANCE AND PROBLEM REPORTING 9

 3.7.1 *Assistance*..... 9

 3.7.2 *Problem Reporting* 9

SECTION 4. ACCESS TO THE SOFTWARE..... 10

 4.1 FIRST-TIME USERS OF THE SOFTWARE 10

4.1.1. <i>Equipment Familiarization</i>	10
4.1.2 <i>Access Control</i>	10
4.1.3 <i>Installation and Setup</i>	11
4.2 BEGINNING A SESSION.....	11
4.3 STOPPING AND SUSPENDING WORK	12
SECTION 5. PROCESSING REFERENCE GUIDE	
5.1 CAPABILITIES	14
5.2 CONVENTIONS	14
5.3 HTML QUERY PROCESSING PROCEDURES	14
5.3.1 <i>Set Region</i>	15
5.3.2 <i>Set Date Range</i>	16
5.3.3 <i>Set Keywords</i>	16
5.3.4 <i>Set Data Sources</i>	21
5.3.5 <i>Begin Data Query</i>	22
5.3.6 <i>HTML Query Interface to Restricted Metadata</i>	36
5.4 JAVA QUERY PROCESSING PROCEDURES	40
5.4.1 <i>Set Region</i>	42
5.4.2 <i>Set Date Range</i>	43
5.4.3 <i>Set Keywords</i>	44
5.4.4 <i>Set Data Sources</i>	49
5.4.5 <i>Begin Data Query</i>	51
5.5 BROWSING MEL HOLDINGS	58
5.6 MEL TOOLS	60
5.6.1 <i>Check Order</i>	61
5.6.2 <i>Check Access Status</i>	64
5.6.3 <i>MEL User FAQ</i>	66
5.6.4 <i>MEL Software Development Kit</i>	66
5.6.5 <i>Software</i>	67
5.7 ABOUT MEL.....	69
5.7.1 <i>Introduction</i>	69
5.7.2 <i>Points Of Contact</i>	69
5.7.3 <i>MEL Sponsor</i>	71
5.7.4 <i>Publications</i>	72
5.7.5 <i>Calendar</i>	73
5.7.6 <i>Resource Sites</i>	73
5.7.7 <i>Links</i>	75
5.7.8 <i>Provide Data</i>	76
5.7.9 <i>MEL Developers</i>	76
5.8 SECONDARY LINKS	76
5.8.1 <i>Disclaimer Page</i>	76
5.8.2 <i>DMSO Home Page</i>	77

APPENDIX A. TUTORIALA-1

A.1 HTML DATA QUERY.....A-1

A.2 JAVA DATA QUERY.....A-2

A.3 HTML QUERY RESULTS.....A-3

APPENDIX B. ACRONYMS/ABBREVIATIONS.....B-1

APPENDIX C. GLOSSARY.....C-1

APPENDIX D. CLASSIFIED MEL LABELING.....D-1

D.1 APPLICABILITY.....D-1

D.2 GENERAL LABELING POLICY.....D-1

D.2.1 Classification Levels.....D-1

D.2.2 Control MarkingsD-1

D.2.3 Page Banners.....D-2

D.2.4 Web Page TitleD-2

D.2.5 Portion Marking.....D-2

D.2.6 Web Page Links.....D-2

D.2.7 Frames.....D-2

D.3 SPECIFIC LABELING POLICY.....D-2

D.3.1 Static Web Pages.....D-3

D.3.2 Dynamic Web Pages.....D-3

APPENDIX E MEL TEST AND SUPPORT SOFTWARE.....E-1

LIST OF FIGURES

FIGURE 1. MEL QUERY PROCESS6

FIGURE 2. MEL HOME PAGE.....11

FIGURE 3. HTML QUERY PAGE.....13

FIGURE 4. HTML QUERY SET REGION FEATURE14

FIGURE 5. HTML QUERY SET DATE RANGE FEATURE15

FIGURE 6. HTML FULL TEXT QUERY.....16

FIGURE 7. HTML QUERY MEL KEYWORD LISTS17

FIGURE 8. HTML FIELDDED QUERY.....18

FIGURE 9. HTML QUERY AREAL COVERAGE FIELD KEYWORD LIST.....19

FIGURE 10. HTML QUERY SET DATA SOURCES FEATURE20

FIGURE 11. HTML QUERY RESULTS22

FIGURE 12. HTML QUERY GEOGRAPHICAL DISPLAY OF DATASET BOUNDING COORDINATES23

FIGURE 13. HTML QUERY SET REGION DISPLAY OF DATASET BOUNDING COORDINATES...24

FIGURE 14. HTML QUERY STATISTICAL SUMMARY PAGE	25
FIGURE 15. HTML QUERY TEMPORAL DISPLAY OF DATASET DATE RANGES.....	26
FIGURE 16. DISABLED MEL ORDER LINKS.....	27
FIGURE 17. HTML QUERY DATASET ORDER FORM.....	29
FIGURE 18. MEL DATASET ORDER FORM	30
FIGURE 19. HTML QUERY ORDER FORM REQUEST TYPES.....	31
FIGURE 20. CREATE USER PROFILE	32
FIGURE 21. EDIT USER PROFILE.....	33
FIGURE 22. PLEASE CONFIRM DELIVERY CHOICES	34
FIGURE 23. MEL DATA REQUEST ACKNOWLEDGEMENT.....	35
FIGURE 24. RESTRICTED ACCESS LOGIN PAGE	36
FIGURE 25. NO ACCESS PRIVILEGES.....	37
FIGURE 26. RESTRICTED ITEM.....	37
FIGURE 27. RESTRICTED ACCESS.....	38
FIGURE 28. JAVA QUERY PAGE.....	40
FIGURE 29. PRESET REGIONS.....	42
FIGURE 30. JAVA QUERY SET DATE RANGE.....	43
FIGURE 31. JAVA FULL TEXT QUERY.....	44
FIGURE 32. JAVA QUERY MEL KEYWORD LISTS.....	45
FIGURE 33. JAVA FIELDED QUERY.....	46
FIGURE 34. JAVA QUERY AREAL COVERAGE KEYWORD LIST	47
FIGURE 35. JAVA QUERY SET DATA SOURCES - SITE LOCATIONS.....	48
FIGURE 36. JAVA LIST OF DATA SOURCES	49
FIGURE 37. JAVA LIST QUERY RESULTS	50
FIGURE 38. JAVA DATA SETS BY MAP REGIONS	51
FIGURE 39. JAVA DATA SETS FOR MAP DATE RANGES	53
FIGURE 40. JAVA DATA SETS BROWSE GRAPHICS	55
FIGURE 41. JAVA QUERY METADATA RECORD	56
FIGURE 42. JAVA QUERY ACCESS TO DATASET	57
FIGURE 43. JAVA QUERY DATASET ORDER FORM	58
FIGURE 44. BROWSE HOLDINGS	59
FIGURE 45. BROWSE HOLDINGS (CONTINUED)	60
FIGURE 46. CHECK ORDER ENTRY FORM	61
FIGURE 47. CHECK ORDER/SUBSCRIPTION STATUS.....	62
FIGURE 48. ORDER AND SUBSCRIPTION TABLES.....	63
FIGURE 49. CANCELLATION RESULTS.	64
FIGURE 50. MEL ORDERING STATUS AND MESSAGES FROM RESOURCE SITES	65
FIGURE 51. MEL USER FAQ.....	66
FIGURE 52. MEL SDK.....	67
FIGURE 53. MEL SOFTWARE	67
FIGURE 54. ABOUT MEL.....	69
FIGURE 55. MEL SPONSOR	71
FIGURE 56. MEL PUBLICATIONS PAGE	72

FIGURE 57. MEL CALENDAR PAGE.....73
FIGURE 58. MEL RESOURCE SITES PAGE.....74
FIGURE 59. RESOURCE SITE DESCRIPTIONS.....75
FIGURE 60. MEL LINKS PAGE.....76

LIST OF TABLES

TABLE 1. MEL-FGDC FIELD CORRESPONDENCE.....18
TABLE 2. MEL-FGDC FIELD CORRESPONDENCE.....47
TABLE 3. MEL POINTS OF CONTACT.....71

NOTE — Conventions

This Manual uses the following typographical conventions:

CAPITAL LETTERS for the names of Internet protocols, acronyms, and abbreviations.

Boldface type for headings and references to other sections in this Manual and user actions.

Italics are used for emphasis

`Monospaced font` for keywords in computer system commands, directory path names, and file names. In proper context, the text in `[square brackets]` represents command options and text in `<angle brackets>` represents items the user should replace with applicable text.

Monospaced italic font for Internet addresses.

Acronyms and abbreviations used in this Plan are defined in **Appendix B**.

SECTION 1. SCOPE

1.1 IDENTIFICATION

This Software User Manual (SUM) pertains to version 3.1 of the Master Environmental Library (MEL), composed of the following Computer Software Configuration Items (CSCIs): MEL Access Site Software (MASS), MEL Resource Site Software (MRSS), MEL Services Architecture Software (MSAS), Public Domain and Support Software (PDSS), and MEL Test and Support Software (MTSS). This document is intended for distribution to those organizations associated with using the MEL.

1.2 SYSTEM OVERVIEW

The MEL project is sponsored by the Defense Modeling and Simulation Office (DMSO), under their Integrated Natural Environment (INE) Program. The lead development activity for the MEL Project is the Naval Research Laboratory (NRL) Marine Meteorology Division in Monterey, CA.

The MEL is an Internet-based data discovery and retrieval system that provides access to geographically distributed oceanographic, atmospheric, terrain, and near-space databases. The MEL is based on a library paradigm in which users query a “card catalog” through a MEL Access Site. The “cards” in the “card catalog” serve as the standardized description of the different types of data in the distributed library. These “cards” are metadata records that comply with the United States Federal Geographic Data Committee (FGDC) Content Standard for Digital Geospatial Metadata (CSDGM). When users locate a “card” that provides information about the desired data, they can submit an order for the data to a MEL Access Site. A MEL Access Site consists of an Internet HTTP¹ Server (i.e., Web server) providing access to Hypertext Markup Language (HTML) and Java™ interfaces, and supporting Common Gateway Interface (CGI) programs. MEL users search for or browse and order available data using a World Wide Web (WWW) browser client application on their computers. They may choose either the HTML Data Query or the Java Data Query options on the MEL Home page to interactively create a Query to locate and order information. Such Queries and Orders can include a region of interest, date range, category keywords, and data source elements. The Query checks all metadata records from the specified Resource Site(s). Query results are displayed for the user to examine the full text of the metadata record, view any browse graphics associated with the metadata record, and generate an Order Form² customized for the chosen data set. The Java Query provides an interactive interface that allows information to be visually compared, thus guiding users through a potentially large set of resulting data that meet the user's query criteria to the specific data sets of interest.

¹ HTTP - Hypertext Transfer Protocol

² Some Resource Sites do not use the MEL order form. In these cases the data is ordered directly from the Resource Site using their local ordering procedures.

Classified MEL NOTE: The Java Data Query option is not available in Classified MEL. If the link is followed, a page will come up that briefly mentions this restriction.

Users can order existing data sets, or where applicable, subscribe to receive data sets as they are produced. They may alternatively browse MEL's holdings in a hierarchy based on the MEL Thesauri, and then place an Order. Orders for data are forwarded to the applicable MEL Resource Site(s) and processed by the MRSS. This customizable software: parses these Orders; handles scheduling of requests; extracts data from local databases; formats, compresses, and delivers the data files; and notifies users by e-mail of the Order delivery.

The MEL 3.1 Release includes features in the MEL 3.0 Release, plus the following changes:

- The *MEL Home Page* in MEL 3.1 includes a link for information regarding a Classified MEL Site, and this link is directed to the *What's New* web page.
- The *What's New* web page in MEL 3.1 includes an entry for the Classified MEL. Users are directed to the MEL Access Site Administrator's email address to obtain information about accessing the site(mel_access_admin@nrlmry.navy.mil).
- The MEL 3.1 software supports dynamic content. Technologies used to implement dynamic content include:
 - Java Beans
 - Java Server Pages (JSP)
 - Extensible Markup Language (XML)
 - Extensible Stylesheet Language (XSL)

Note - All pages that implement dynamic content end in the extension .jsp

- Software and documentation have been changed to comply with web accessibility requirements, in accordance with DMSO guidance.
- The MEL 3.1 software will allow Resources Sites to restrict user access to the discovery and display of some of their metadata and to the ordering of the data it represents.
- The MEL 3.1 software uses a different method than prior versions to check site status.

- The MEL_Product_Thesaurus has been changed in MEL 3.1 to accommodate the Modular Ocean Data Assimilation System (MODAS).
- The MEL_Location_Thesaurus has been changed in MEL 3.1 to accommodate the Eastern Atlantic Ocean and the Western Mediterranean Sea.
- The MRSS Map has been updated in MEL 3.1 to reflect new sites.
- The Software Center Operator's Manual (SCOM), SUM, and MEL Metadata Guide are being updated to reflect changes in the MEL 3.1 software.

1.3 DOCUMENT OVERVIEW

This document provides guidance and instructions on using the MEL 3.1 software for data discovery and retrieval. An abbreviated tutorial is provided in **Appendix A**. Acronyms and abbreviations used throughout this document are defined in **Appendix B**, and a Glossary of common MEL terms is provided in **Appendix C**. **Appendix D** explains the Classified MEL labeling conventions. **Appendix E** pertains to the MTSS, and its distribution is restricted.

If the MEL Access Site is on a Classified network, all pages are required to display the appropriate security classification labels as banners at the top and bottom. The page titles also need to be modified to show the classifications. This is true for static as well as dynamic pages. Static pages are modified at installation time to carry an Unclassified banner. Dynamically created pages get information from the metadata, which, besides the actual data, is the only potentially Classified content in the MEL. The overall classification and Control Markings are determined dynamically based on the content being delivered.

SECTION 2. REFERENCE DOCUMENTS

2.1 GOVERNMENT DOCUMENTS

2.1.1 STANDARDS

- a. MIL-STD-498, Software Development and Documentation, Dec 94.
- b. United States. Federal Geographic Data Committee. FGDC-STD-001-1998, Content Standard for Digital Geospatial Metadata. FGDC, Jun 98.
- c. IEEE/EIA 12207-0-1996. (ISO/IEC 12207) Standard for Information Technology-Software Life Cycle Processes. New York, NY: The Institute of Electrical and Electronic Engineers, Incorporated/Electronic Industries Association, Mar 98.

2.1.2 OTHER PUBLICATIONS

- a. United States. Defense Modeling and Simulation Office. DMSO MEL-PSPEC-PAPER-010, MEL Performance Specification, Version 1.0, DMSO, Mar 98.
- b. United States. Defense Modeling and Simulation Office. DMSO MEL-SCOM-PAPER-0310, MEL Software Center Operator Manual, DMSO, Jun 01.
- c. United States. Defense Modeling and Simulation Office. DMSO MEL-SVD-PAPER-0310, MEL Software Version Description, DMSO, Jun 01.

2.2 NON-GOVERNMENT DOCUMENTS

None

SECTION 3. SOFTWARE SUMMARY

3.1 SOFTWARE APPLICATION

The MEL software provides wide-area network-based access to distributed oceanographic, atmospheric, terrain, and near-space databases. The MEL Web page supports the data discovery and retrieval functions, and provides access to project information and to email for asking technical questions, making suggestions, and reporting problems.

3.2 SOFTWARE INVENTORY

Users must have a Netscape 4.x-compliant or better Web browser client application to effectively use the MEL. Optional software includes standard decompression applications such as *gunzip* or extraction such as *untar*, and decoders for data formats such as Gridded Binary (GRIB) and Binary Universal Form for Representation (BUFR) of meteorological data. GRIB and BUFR decoders are available on the MEL web pages.

The preferred method for receiving ordered data sets is File Transfer Protocol (FTP) delivery. MEL users wishing to receive ordered data sets must have either: an FTP client on their machine if the FTP site is remote, or read access to the FTP directory if the FTP site is on the same machine as the user.

3.3 SOFTWARE ENVIRONMENT

MEL users must have appropriate Internet, NIPRNET³, or SIPRNET⁴ connectivity and reliable data throughput for optimum use of the MEL.

3.4 SOFTWARE ORGANIZATION AND OVERVIEW OF OPERATION

The purpose of the MASS is to provide a uniform interface for users to discover and retrieve data from distributed sources. The MASS supports the following six functional areas:

- User Interface
- HTML Query
- Java Query
- Order-Subscription Status
- Metadata Validation Service
- Administrative Tool

³ NIPRNET - Non-secure Internet Protocol Router Network

⁴ SIPRNET - Secure Internet Protocol Router Network

A diagram of the MEL Query process is shown in **Figure 1**. For the HTML Query and Order-Subscription Status functions, a series of CGI programs written in the Perl language generate interactive HTML pages on the fly. The Java Query function uses a Java applet to generate an interactive graphical interface, incorporating data visualization as a comparative tool. The *Metadata Validation Service and Administrative Tool* functions are used by the MEL Resource Site Administrators, and do not concern general MEL users.

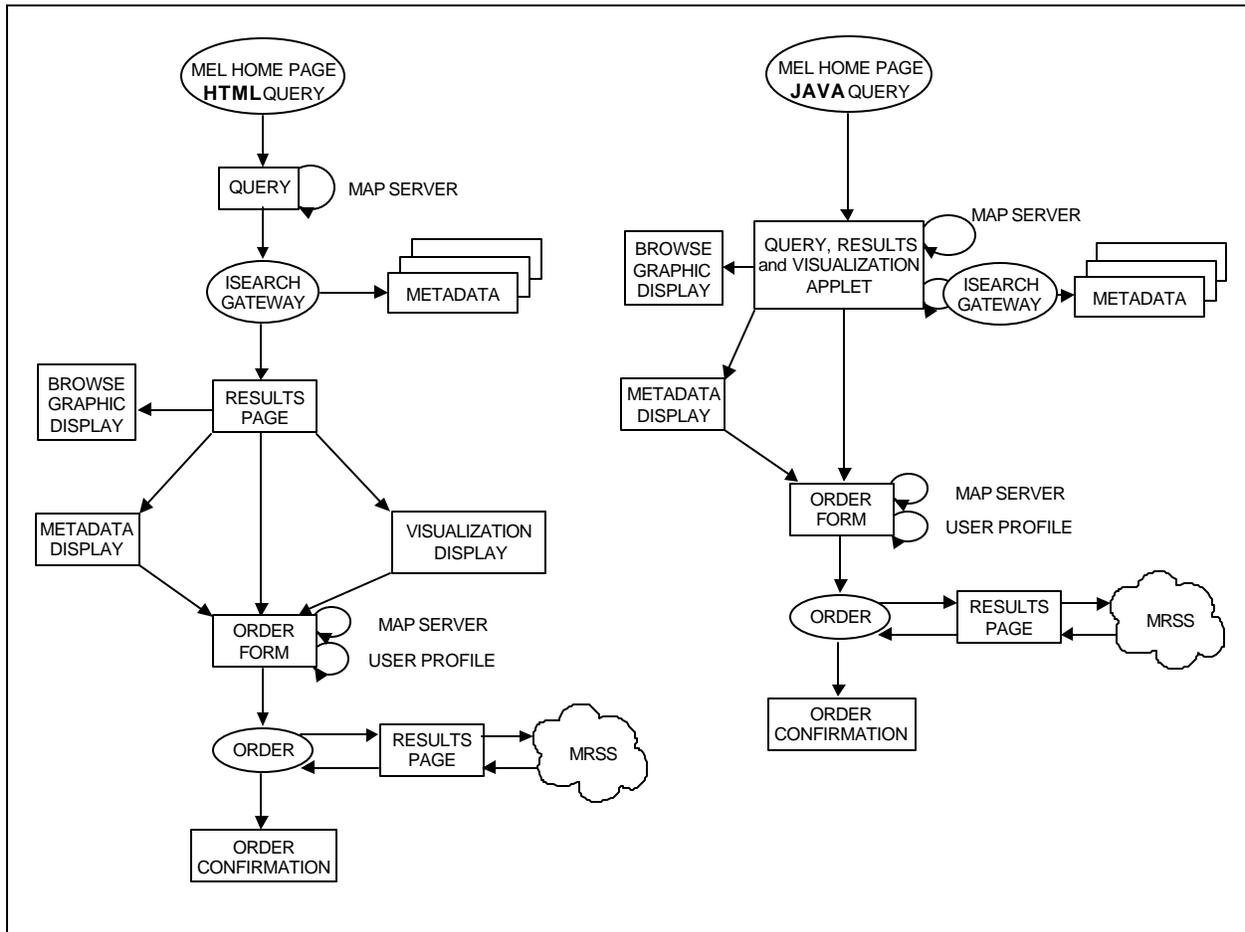


Figure 1. MEL Query Process

The MASS is a scalable application that can support sites with various configurations. The software can work from behind firewalls with controlled risk, using the CORBA⁵ interface to send a user's data request to the MEL Resource Sites. Wherever possible, the MASS uses Commercial-Off-The-Shelf (COTS) software, open systems technology, and proven public domain support software.

⁵ CORBA - Common Object Request Broker Architecture

NOTE: What is a request?

The term *request*, as used in this document, refers to a single instance of an order for a single dataset by a user. It is assigned a unique *request_id* that is used extensively by the MEL. Using the *request_id* the user can track the progress of the *request*, and Site Administrators can monitor and troubleshoot the software.

Several *requests* may be processed concurrently by the MEL. The number of concurrent requests and the number of processes are site configurable, based on available system resources.

3.5 CONTINGENCIES/ALTERNATIVE STATES/MODES OF OPERATION

3.5.1 Resource Site Not Responding

If a particular MEL Resource Site is not responding or is off-line, redundant or similar data still might be found by altering the HTML or Java Query to search all remaining MEL Resource Sites.

3.5.2 MEL Access Site Is Not Responding

If the MEL Access Site is not responding or is off-line, data sets can still be ordered directly from the MEL Resource Sites that have alternate access methods. The MEL Resource Sites may use both the MEL Order Form and their own order form. Access to these MEL Resource Sites is provided via the WWW.

3.6 SECURITY AND PRIVACY

3.6.1 U.S. Government System

The MEL and related equipment are intended for the communication, transmission, processing, and storage of United States (U.S.) Government information. They are subject to monitoring to ensure proper functioning, to protect against improper or unauthorized use or access, to verify their presence or performance of applicable security features or procedures, and for other like purposes. Such monitoring may result in the acquisition, recording and analysis of all data being communicated, transmitted, processed, or stored in the system. If monitoring reveals evidence of possible criminal activity, such evidence may be provided to law enforcement personnel. Use of the MEL constitutes consent to such monitoring. The Disclaimer page, available by a link on the MEL Home page, describes the security and monitoring agreements to which each MEL user is subject.

3.6.2 Limits of Liability

With respect to the documents available from the MEL Server, neither the U.S. Government, DMSO, Navy, NRL, nor any of their employees, makes any warranty, express or implied, including the warranties of merchantability and fitness for a particular purpose, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.

3.6.3 Limits of Endorsement

Reference within the MEL Home page to any specific commercial products, process, or service by trade name, trademark, manufacture, or otherwise, does not necessarily constitute or imply endorsement, recommendation, or favoring by the U.S. Government, DMSO, Navy, or NRL. The views and opinions of authors expressed on the MEL Home page do not necessarily state or reflect those of the U.S. Government, DMSO, Navy, or NRL, and shall not be used for advertising or product endorsement purposes.

3.6.4 Requirements for Labeling Classified MEL

The MASS is configured to operate in an Unclassified or a Classified mode during its installation. On a Classified site, all Web pages have to be labeled with respect to their classifications, and additional Control Markings may be indicated. **Appendix D** outlines the procedure that has been followed for page classification labeling.

In the Unclassified MEL, Resource Sites can restrict access to certain metadata and allow only a selected set of users to discover and view them (see **Paragraph 4.1.2**).

3.7 ASSISTANCE AND PROBLEM REPORTING

3.7.1 Assistance

As discussed elsewhere in this document, the MEL provides users with email access for technical questions, suggestions, and problems. Links to **Help** and **Contact MEL** are generally available at the top of each MEL Web page.

Any MEL related questions may be addressed to the MEL Help Desk maintained by the Modeling and Simulation Information Analysis Center (MSIAC) at the following telephone number and email address:

888-566-7672 (toll-free), 0700-1900 ET, Monday through Friday

mel_help@msiac.dmso.mil

3.7.2 Problem Reporting

Technical problems should also be reported to the MEL Help Desk discussed above.

SECTION 4. ACCESS TO THE SOFTWARE

This section contains systematic procedures for first-time, or occasional users of the MEL. Sufficient details are provided so that such users can successfully access the MEL before learning all its nuances.

4.1 FIRST-TIME USERS OF THE SOFTWARE

4.1.1 Equipment Familiarization

Not Applicable

4.1.2 Access Control

Access to the MEL Web page and Query forms is not restricted. When ordering data sets, users must create a User Profile. The establishment of a password in the User Profile provides security in the checking and canceling of dataset Orders.

4.1.2.1 Creating a Password

The MEL users provide information to create a User Profile at the time of their initial MEL order (see **Paragraph 5.3.5.3**). The User ID is the user's email address. The password is user selected and can contain up to eight characters. It is best to use a mixture of lower and upper case letters and digits.

4.1.2.2 Changing a Password

Once a User Profile has been created, the MEL user can change any of the parameters by changing the contents of the User Profile form.

4.1.2.3 Forgotten Passwords

If a password is forgotten, users may contact the MEL Access Site Administrator at the following email address and provide a contact telephone number:

mel_access_admin@nrlmry.navy.mil

4.1.2.4 Restricted Access

In the Unclassified MEL, there is an alternative HTML Query page that requires logging in. The e-mail and password that are required for login are the same as in the User Profile described previously. To gain access to restricted metadata, users need to create a User Profile. Users should contact Resource Site Administrators to get on their access control lists.

4.1.3 Installation and Setup

There are no special procedures for a MEL user to be identified or authorized to access the MEL. To order and receive data requires the creation of a User Profile as described in **Paragraph 5.3.5.3**.

4.2 BEGINNING A SESSION

After establishing a connection to the Internet via a Web browser, the MEL can be accessed at the following Uniform Resource Locator (URL): <http://mel.dmsomil>

Figure 2 depicts the top-level MEL Home Page, which provides a launch-point for linking to other MEL pages.

Master Environmental Library One-Stop Shop for Environmental Information

About MEL | **HTML Data Query** | **Java Data Query** | **MEL Tools** | **Help** | **Tutorials** | **Find** | **Site Map** | **Contact MEL** | **Home Page**

WARNING: This is a U.S. Government Computing Site. Please read [disclaimer](#) before proceeding.

The Master Environmental Library (MEL) is a Defense Modeling and Simulation Office ([DMSO](#)) sponsored, one-stop site for ordering environmental information. Through MEL, users can locate and order environmental information that resides at different United States military and government sites. [New in MEL](#)

MEL Data Discovery & Delivery

Query	Review	Order	Receive
Use the MEL interface to locate data of interest.	Review data descriptions found through MEL.	Place one time orders or subscribe to data in MEL.	Data is sent to an anonymous FTP address or picked up at data source.

To create a Data Query in order to locate environmental data or information, click on the grey "HTML Data Query" or "Java Data Query" menu bar buttons at the top of every MEL page. Alternately, [Browse Data in MEL](#), by viewing MEL's holdings. To get help, click on the yellow "Help" button at the top of every MEL page.

Figure 2. MEL Home Page

This page contains the following four primary links displayed just under the MEL title banner:

- **About MEL** - Contains links to additional MEL documentation and information
- **HTML Data Query** - An HTML form for submitting a text-based metadata query
- **Java Data Query** - A Java form for submitting a graphics-based metadata query
- **MEL Tools** - Provides access to support tools and tools for the MEL

The following secondary links, also found on most MEL Web pages, can be used to obtain additional MEL information:

- **Help** - General MEL Help features
- **Tutorials** - MEL online tutorials for novice users
- **Find** - A MEL function for searching the MEL Web site (*Note that this is not for searching the MEL's metadata collection*)
- **Site Map** - Displays the MEL Web-site Map
- **Contact MEL** - A link to send email comments or report MEL bugs to MEL personnel
- **Home Page** - Return to the MEL Home page

The MEL Home page also contains the following secondary links to the following Web pages:

- The **Browse Holdings** page which provides access for browsing MEL holdings
- The **Security Notice and Disclaimer** page
- The **DMSO Home** page

A menu bar at the bottom of most MEL pages provides links for quick access to the MEL Home Page, About MEL, Browse Holdings, HTML Data Query, Java Data Query, and MEL Tools.

4.3 STOPPING AND SUSPENDING WORK

Users in the middle of fetching a new HTML page can interrupt the action by linking to another URL in the Web browser, or by stopping or closing the browser program. Since the MEL is stateless, one can leave for a period of time and resume the searching or browsing of the results, etc.

When Orders take some time to fulfill, it may be possible to cancel the order. Active subscriptions can also be canceled or suspended. Already suspended subscriptions can also be resumed (see **Paragraph 5.6.1**).

SECTION 5. PROCESSING REFERENCE GUIDE

5.1 CAPABILITIES

The MEL uses a Web browser to create interactive forms that let users discover and retrieve environmental data sets. An HTML Query interface is provided for quick searches and ordering, while a Java Query interface provides a highly interactive form for developing more complex and selective queries. Users can also browse MEL holdings through a hierarchy of links based on the MEL Thesauri.

5.2 CONVENTIONS

The MEL does not have any unique conventions, such as the use of colors in the displays, audible alarms, or rules for assigning names and codes. It uses a vocabulary associated with environmental and geospatial information.

5.3 HTML QUERY PROCESSING PROCEDURES

Figure 3 depicts the top portion of the HTML Query Page.

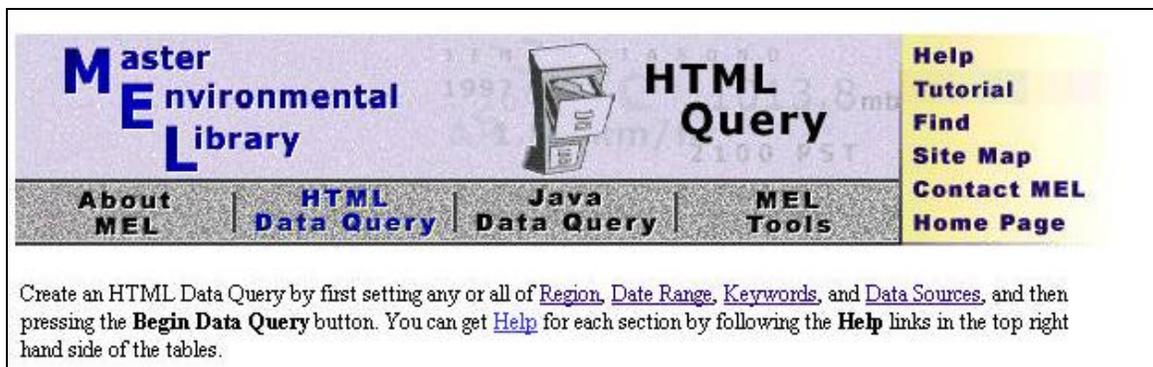


Figure 3. HTML Query Page

The remainder of the HTML Query Page contains the following four main sections for the user to describe the environmental information desired:

- Set **Region**
- Set **Date Range**
- Set **Keywords**
- Set **Data Sources**

5.3.1 Set Region

The region of interest may be defined by using either the Interactive Map as shown in **Figure 4**, or by specifying latitude and longitude as described below.

Set Region [Help](#)

Specify a query region by entering values or by clicking on the map to zoom.

Northernmost

Southernmost

Westernmost

Easternmost

Figure 4. HTML Query Set Region Feature

5.3.1.1 Interactive Map

To use the Interactive Map feature, click on the map position of interest. The map automatically narrows the field of view and expands the map to fill the region of interest. The latitude and longitude boundaries of the map are automatically updated in the accompanying text fields.

This process may be repeated as often as desired to narrow the area to a particular region. Click **Set to Global** to return the map to the original global region.

5.3.1.2 Specification of Longitude and Latitude Range

Instead of using the Interactive Map feature, latitude and longitude limits may be specified in degrees. Text boxes are provided to enter values for the **Northern**, **Eastern**, **Southern**, and **Western** boundaries of the desired area.

Drop-down lists alongside each input field allow for setting the basic direction. For example, to define a region entirely north of the equator, both **Northernmost** and

Southernmost fields should be set to **N**. Click **Redraw Map** to show the specified region of interest.

NOTE: There is a current limitation in the system. A region of interest that crosses the International Date Line is not allowed. If such a region is specified and a Query is submitted, an error page informs the user of this limitation.

5.3.2 Set Date Range

The **Set Date Range** feature shown in **Figure 5**, is used to specify the dates of the Query for which metadata is searched. The date range is in Greenwich Mean Time (GMT).

Figure 5. HTML Query Set Date Range Feature

From the **Set Date Range** box, users may set the date range using any of the following options:

- Data for a specified number of days or dates. A pull down menu permits the selection of: the **last 7 days**, the **last 30 days**, the **last 365 days**, **year to date**, and **current date**.
- Data for a range of dates. A combination of pull down menus and entry fields allow dates to be defined for the start and end of the search period. This method provides the most flexibility in defining the date range.
- Data for **before**, **after**, or **equal to** a specified date.
- Data for all dates. This is the default setting.

5.3.3 Set Keywords

Set Keywords is used to define the keywords used in a query. The two methods by which keywords can be chosen are: *Full Text Query*, and *Fielded Query*. In both methods, multiple keywords may be entered or selected. Any time there are multiple keywords, the

keywords will be combined by a logical operator (i.e., AND, OR). The operator OR means one or more keywords must be found while the operator AND means all keywords must be found. Phrases may be entered but these must be surrounded by double quotes. Wild cards are allowed only at the end of a keyword as in `temp*`, which means words such as temper, temperature, and tempest would match the query. In order to enter specific keywords, either the *Fielded Query* or *Full Text Query* must be used. Both of them cannot be used in the same query.

5.3.3.1 Full Text Query

In this type of keyword searching, specified keywords will be searched in all the fields of the metadata that have been indexed. The MEL Keywords can be typed directly into the text input box, as shown in **Figure 6**. Any keyword can be typed into the text input box. However, only data that exactly matches those keywords will be returned. If it is not known whether a keyword actually describes data in the MEL it is best to first look at the keyword list (see below) to determine if it does, or no data may be found. If more than one keyword has been entered, the keywords will be combined by the logical operator (AND, OR) selected.

Figure 6. HTML Full Text Query

The MEL keywords can also be selected from keyword lists. To display the keywords for the MEL, click the **Select** button. A new page will be displayed showing keywords organized into alphabetical lists as depicted in **Figure 7**. The purpose of the keyword lists is to provide help in locating actual keywords used in the MEL, so that a Query based on these keywords would always result in matches.

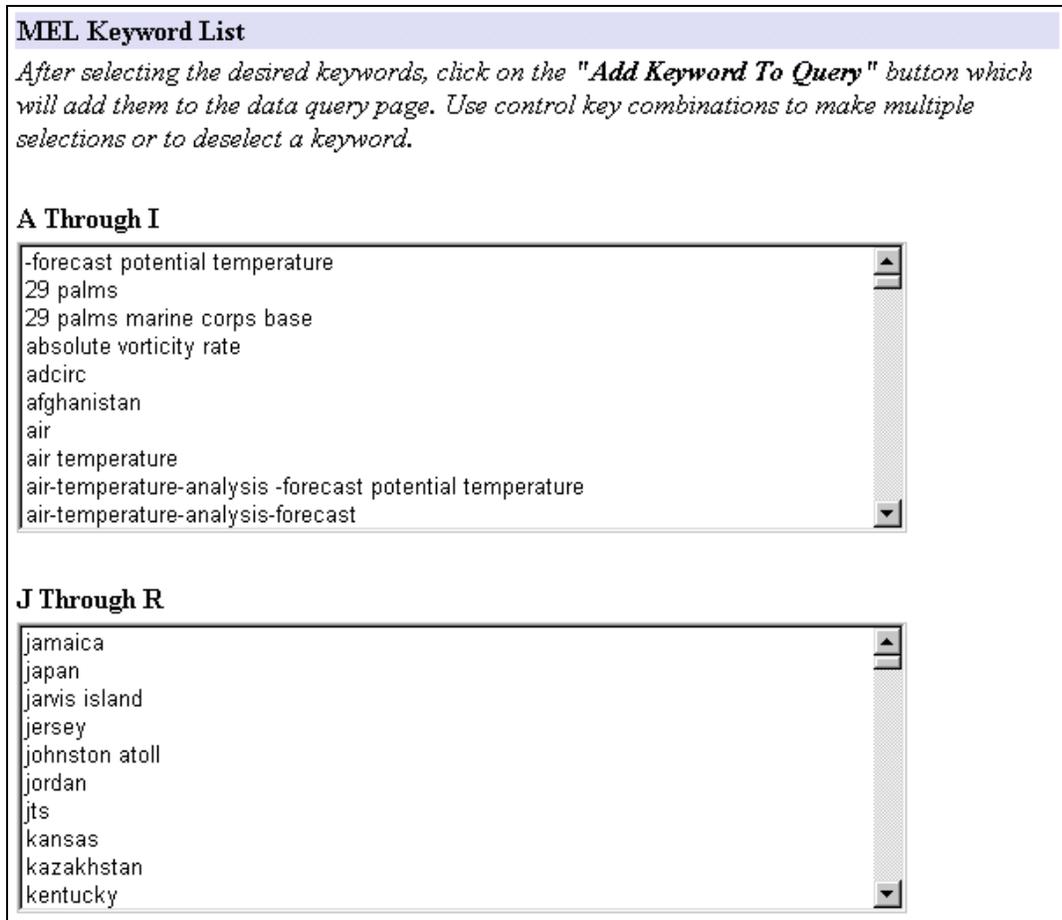


Figure 7. HTML Query MEL Keyword Lists

Keywords can be selected from as many lists as desired. Multiple keywords can also be selected from the same list. Select one or more keywords from one or more lists by clicking on that keyword. To select multiple keywords, use a control key combination.

In Windows systems, use a left mouse click plus the control key.

In UNIX systems, just mouse click multiple items.

In Macintosh systems, use Command plus mouse click.

When all keywords are selected, click **Add Keyword to Query**. The screen returns to the *HTML Data Query* page, where all selected keywords have now been added to the keyword text box.

5.3.3.2 *Fielded Query*

Fielded Query can also be used to define the keyword Query as shown in **Figure 8**.

Set Keywords -- Fielded Query [Help](#)

Fielded Query searches specific fields. An alternative method is to use Full Text Query. Choose the field in which you want to search and then type in word(s) or select from list. Phrases must be quoted ("relative humidity"), wildcards only at end (temp).*

Operator	Field	Text Input	
	Areal Coverage		Select
OR	Areal Coverage		Select
OR	Areal Coverage		Select
OR	Areal Coverage		Select

Use Full Text Query

Figure 8. HTML Fielded Query

The MEL uses the FGDC metadata content standard for its catalog documents. *Fielded Query* is useful when there is a need to locate information in specific metadata fields. For example, it is allowed to query only the metadata originator field for keywords. The fields listed for searching are MEL specific and may not reflect the actual FGDC field name that is being searched. Some of the choices may be searching the same field in the metadata. For instance, the same keyword searched under *Areal Coverage* and *Environmental Domain* will yield the same results. The following **Table 1** shows which listed field names search which FGDC metadata fields:

Table 1. MEL-FGDC Field Correspondence

MEL Specific Field	FGDC Field Searched
Areal Coverage	Stratum Keyword
Attribute Label	Attribute Label
Entity Type Label	Entity Type Label
Environmental Domain	Stratum Keyword
Exercise/Simulation Name	Theme Keyword
Location	Place Keyword
Originator	Originator
Product Name	Theme Keyword
Resource Type	Geospatial Data Representation Form
Scientific/Engineering Field	Theme Keyword
Temporal Coverage	Temporal Keyword

When multiple keywords are entered in the same text field, they are combined with an OR operator in the query. More complex Queries can be composed by selecting a field, specifying a keyword in the text box, selecting an operator and then repeating the process for another line. Up to four terms can be combined with logical operators in this fashion.

Keywords can also be selected from keyword lists specific to the currently selected field. To display the keywords for a specific field, click the **Select** button that appears next to it. A new page will be displayed showing the keywords that are actually used in this section of the metadata (refer to the example in **Figure 9**). The purpose of the keyword lists is to provide help in locating actual keywords used in the MEL so that a Query based on these keywords would always result in matches.

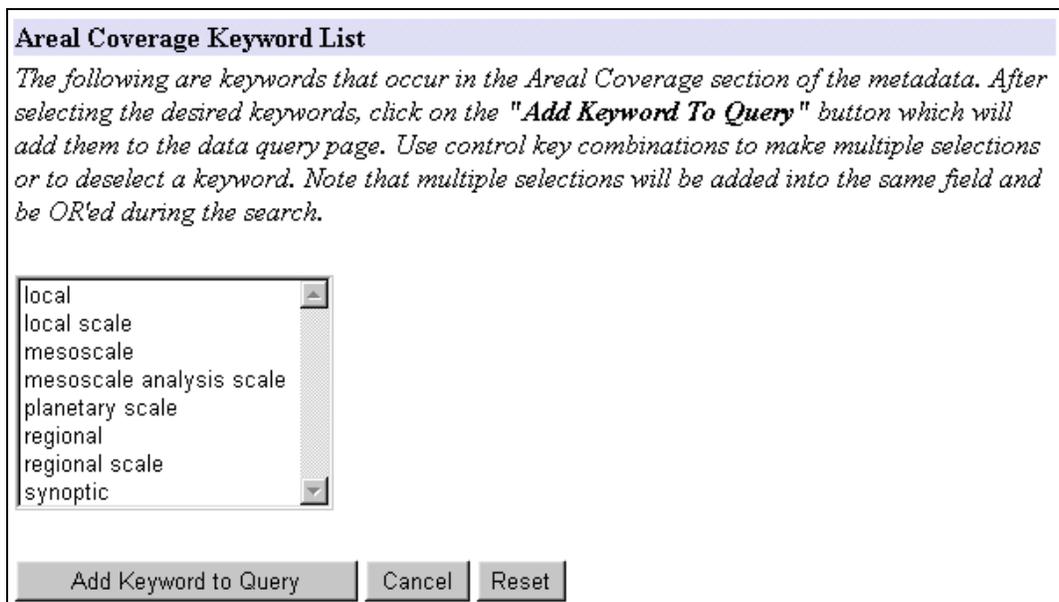


Figure 9. HTML Query Areal Coverage Field Keyword List

Multiple keywords can be selected from a list. Select one or more keywords from a list by clicking on that keyword. To select multiple keywords, use one of the following control key/mouse actions:

- In Windows systems, use a left mouse click plus the control key.
- In UNIX systems, mouse click multiple items.
- In Macintosh systems, use Command plus mouse click.

When all keywords are selected, click **Add Keyword to Query**. The screen returns to the *HTML Data Query* page where all selected keywords have now been added to the text box of the particular field for which the list was requested.

5.3.4 Set Data Sources

The **Set Data Sources** feature of the *HTML Query* form (**Figure 10**) is used to specify searching all available data sources, or to limit the search to a specific source or sources. A data source is a site or facility that is a data repository. Data sources provide summaries of their data in the form of metadata records that can be searched through the MEL Access Site.

Figure 10. HTML Query Set Data Sources Feature

The default is **ALL DATA SOURCES**. To change the setting, deselect **ALL DATA SOURCES** and select the desired data source name. Multiple data sources may be highlighted using standard key combinations.

After selecting the data sources, select the maximum number of records (also referred to as data sets) that will be returned from each data source (there may be fewer). For example, if three data sources are selected and the display option is set to the first 20 records from each data source, then a maximum of sixty data sets will be returned. However, if two data sources only had one data set each that satisfied the query and the third data source had twenty data sets that satisfied the query then twenty-two data sets would be returned. If a data source had forty data sets that satisfied the query, only twenty would be returned for that data source.

The data sets that satisfy the query are grouped by data source and listed in alphabetical order. If the records shown are a subset of the total records found to match the Query, then

the records shown represent a random selection of these records, otherwise, they appear in alphabetical order by title. What this means is that if the display is set for ten records and thirty records are found, a random selection of ten of the thirty records are displayed, not simply the first ten. To locate a specific record it may be necessary to query additional records.

Users can view the MEL Ordering status of all or specified data sources by clicking on the **Check Status** button. The page that comes up also displays any messages that may have been posted by the Resource Sites (see **Paragraph 5.6.2**).

Users can also get a brief description of the data source(s) by clicking the **View Description** button. The page that comes up gives a description of the institution and the type of resources they make available through the MEL (see **Paragraph 5.7.6**).

5.3.5 Begin Data Query

When all necessary parameters have been entered, click **Begin Data Query** to process the HTML Query. Information will be returned stating which data sources, and corresponding data sets, are available to satisfy the request.

5.3.5.1 Query Results

As shown in **Figure 11**, the Query Results page displays the list of data sets returned from the search, grouped by data source. The group heading displays the Data Source name and logo, as well as links to its description and the homepage of the institution. There is information on how many items from this data source satisfied the Query. Ordering status messages or specific messages from Resource Sites are also displayed in this group heading. Further, if the Resource Site maintains restricted metadata, it is indicated with a message. For each dataset, several links are provided to obtain more information about the dataset and to order the data. Links may be displayed at the bottom of a group of data sets to enable retrieval of more data sets from that data source.

Query Results: **2 datasets matched your query.**

Query results are grouped by data source. Within a data source, datasets are ordered by how well they met the keyword query criteria. Each dataset has links for "Data Description" (details about the dataset) and ordering ("MEL Order" or "Alternative Access"). A data source navigation bar is visible when additional datasets can be displayed. The "All Datasets" link on the navigation bar displays an alphabetized list of all datasets meeting the query criteria. Datasets can also be visualized. By default, all datasets are visualized. To visualize only specific datasets, select the "Some" radio button, check the desired datasets and then press the visualize button.

All Visualize Bounding Areas Visualize Date Ranges Reset
 Some

	NRLMRY - Naval Research Laboratory Monterey		
	Total matched: 2	Datasets returned: 1-2	Description Homepage

1. COAMPS Korea - Data Archived 19980905 - 19990519, korea_nest2_appl, Coupled Ocean Atmosphere Mesoscale Prediction System

[Data Description](#) Links to data : [MEL Order](#)

2. COAMPS Korea - Data Archived 19990523 - 20000601, korea_nest2_appl2, Coupled Ocean Atmosphere Mesoscale Prediction System

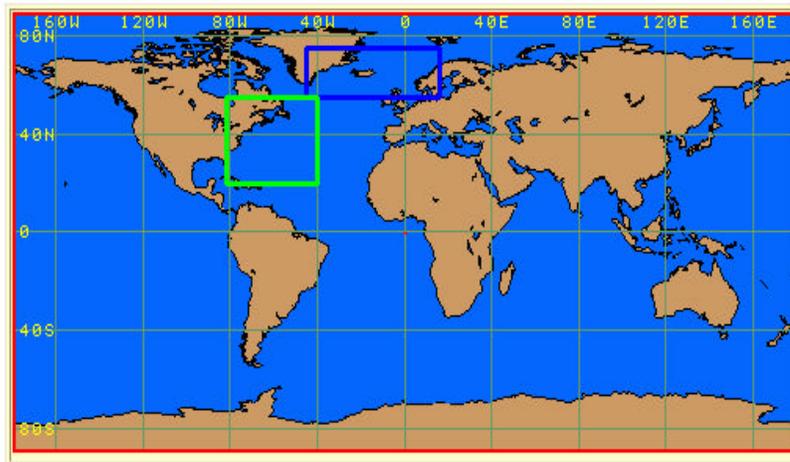
[Data Description](#) Links to data : [MEL Order](#)

Figure 11. HTML Query Results

A **Visualize Bounding Areas** button near the top of the *Query Results* page can be used to view the bounding areas of one or more data sets (**Figure 12**). Click **ALL** to view the bounding areas for all of the data sets, and then click **Visualize Bounding Areas**. To view the bounding areas for only specific data sets, click **Some**, click the box just to the left of each desired data set, and then click **Visualize Bounding Areas**.

Geographical Display of Dataset Bounding Coordinates

The colored rectangles shown on the map below represent unique geographical areas covered by the datasets.



Dataset Listing by Bounding Coordinates

 ... Bounding Coordinates: [W = -45.00] [E = 16.00] [N = 75.00] [S = 55.00]

1. OTIS Greenland Sea - Data Archived, Optimum Thermal Interpolation System
[NRLMRY] [Data Description](#) Links to data : [MEL Order](#)

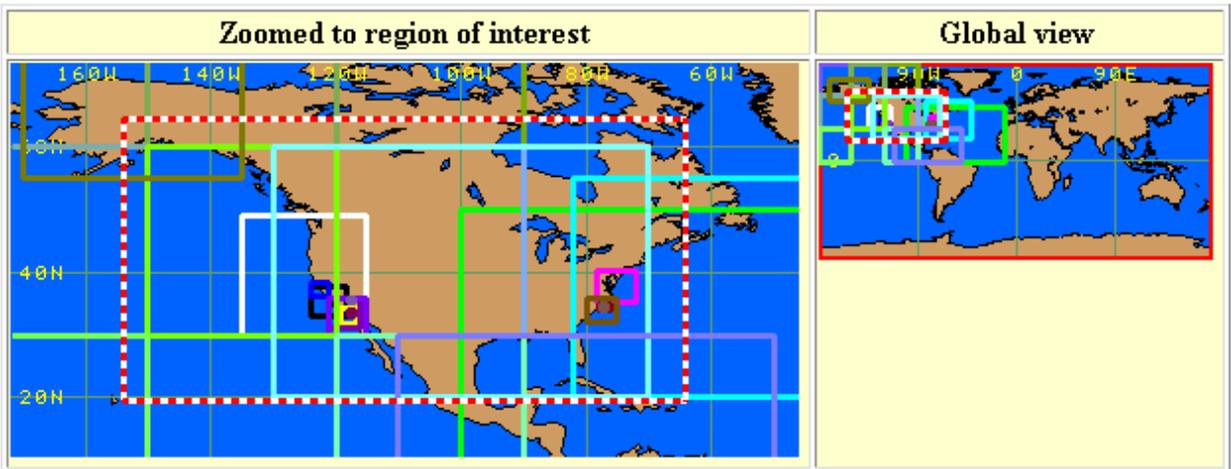
6. OTIS Greenland Sea - Current 24 days, Optimum Thermal Interpolation System
[NRLMRY] [Data Description](#) Links to data : [MEL Order](#)

Figure 12. HTML Query Geographical Display of Dataset Bounding Coordinates

If a sub region was defined during the **Set Region** selection (made during the search process), there will be two maps in the *Visualization* page, i.e., one that is zoomed to the sub region and one showing the global map (see **Figure 13**). A statistical summary of the region of interest covered by each dataset may be obtained by clicking the checkbox **Show Bar Graph** when visualizing bounding areas and then clicking **Visualize Bounding Areas**.

Geographical Display of Dataset Bounding Coordinates

The colored rectangles shown on the map below represent unique geographical areas covered by the datasets. The red and white dashed rectangle shows the region of interest defined in the query



Dataset Listing by Bounding Coordinates

- ... Bounding Coordinates: [W = -123.90] [E = -118.26] [N = 37.76] [S = 33.17]
1. GOES_10 - Central California - Latest Image
 [NRLMRY] [Data Description](#) Links to data : [MEL Order](#) [Alternative Access](#)
- ... Bounding Coordinates: [W = -123.96] [E = -121.09] [N = 38.39] [S = 36.10]
2. GOES_10 - San Francisco Bay - Latest Image
 [NRLMRY] [Data Description](#) Links to data : [MEL Order](#) [Alternative Access](#)
- ... Bounding Coordinates: [W = -100.00] [E = -10.00] [N = 50.00] [S = 0.00]
3. GOES_8 - Tropical Atlantic - Latest Image
 [NRLMRY] [Data Description](#) Links to data : [MEL Order](#) [Alternative Access](#)

Figure 13. HTML Query Set Region Display of Dataset Bounding Coordinates

The bar graphs will appear at the end of the page (see **Figure 14**).

Statistical Summary

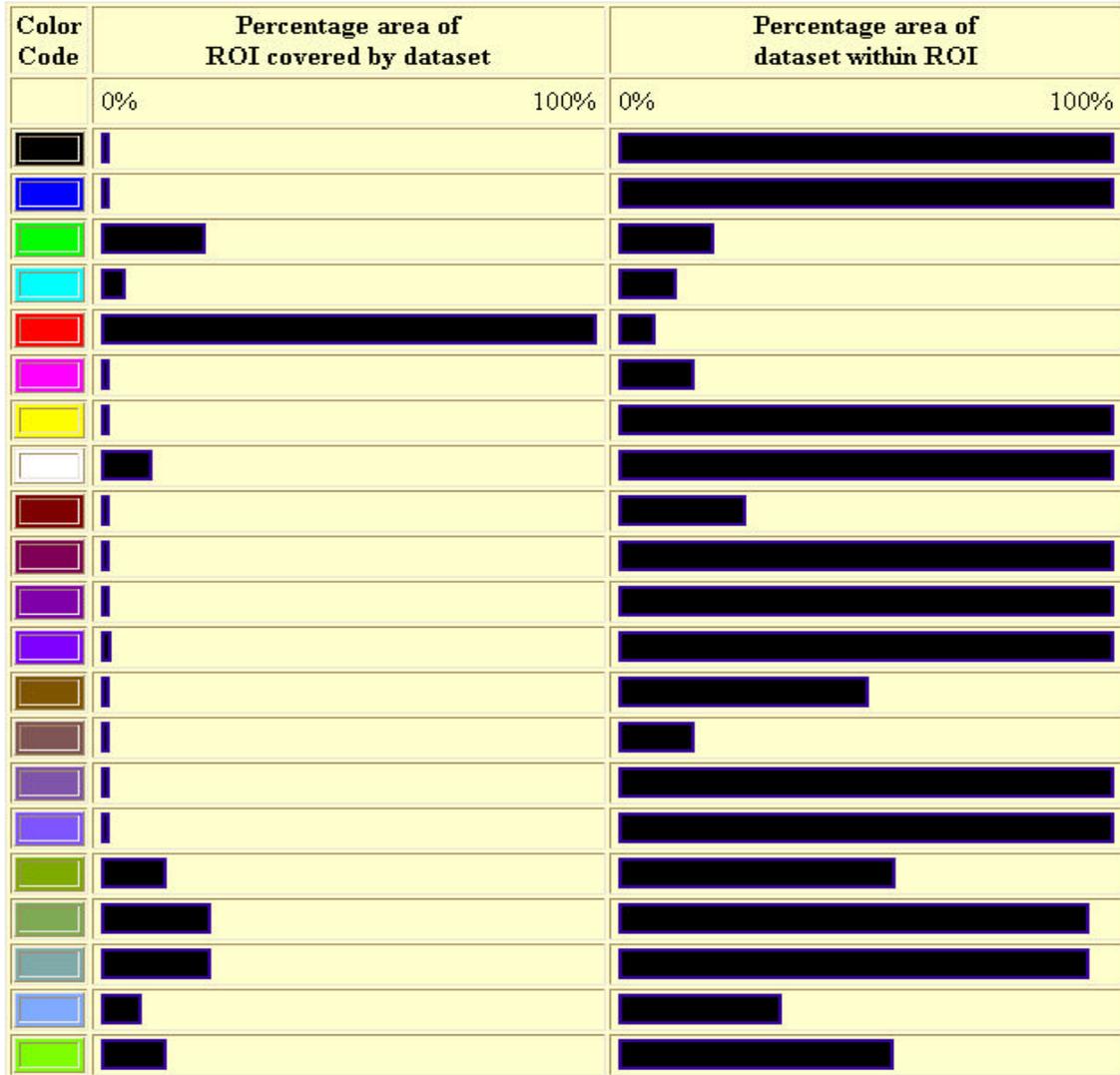


Figure 14. HTML Query Statistical Summary Page

A **Visualize Date Ranges** button near the top of the *Query Results* page can be used to visualize the date ranges of the data sets. If a date range was not specified, the date ranges are displayed against a time line that extends from the minimum to the maximum dates of the returned data sets. If a search date *was* specified, there will be a second timeline that zooms in to the date range specified. To visualize date ranges, select either **All** or **Some** for dataset selection. If **Some** is selected, then also click the box to the left of the records of interest. Click **Visualize Date Ranges**. **Figure 15** is an example of the **Temporal Display**.

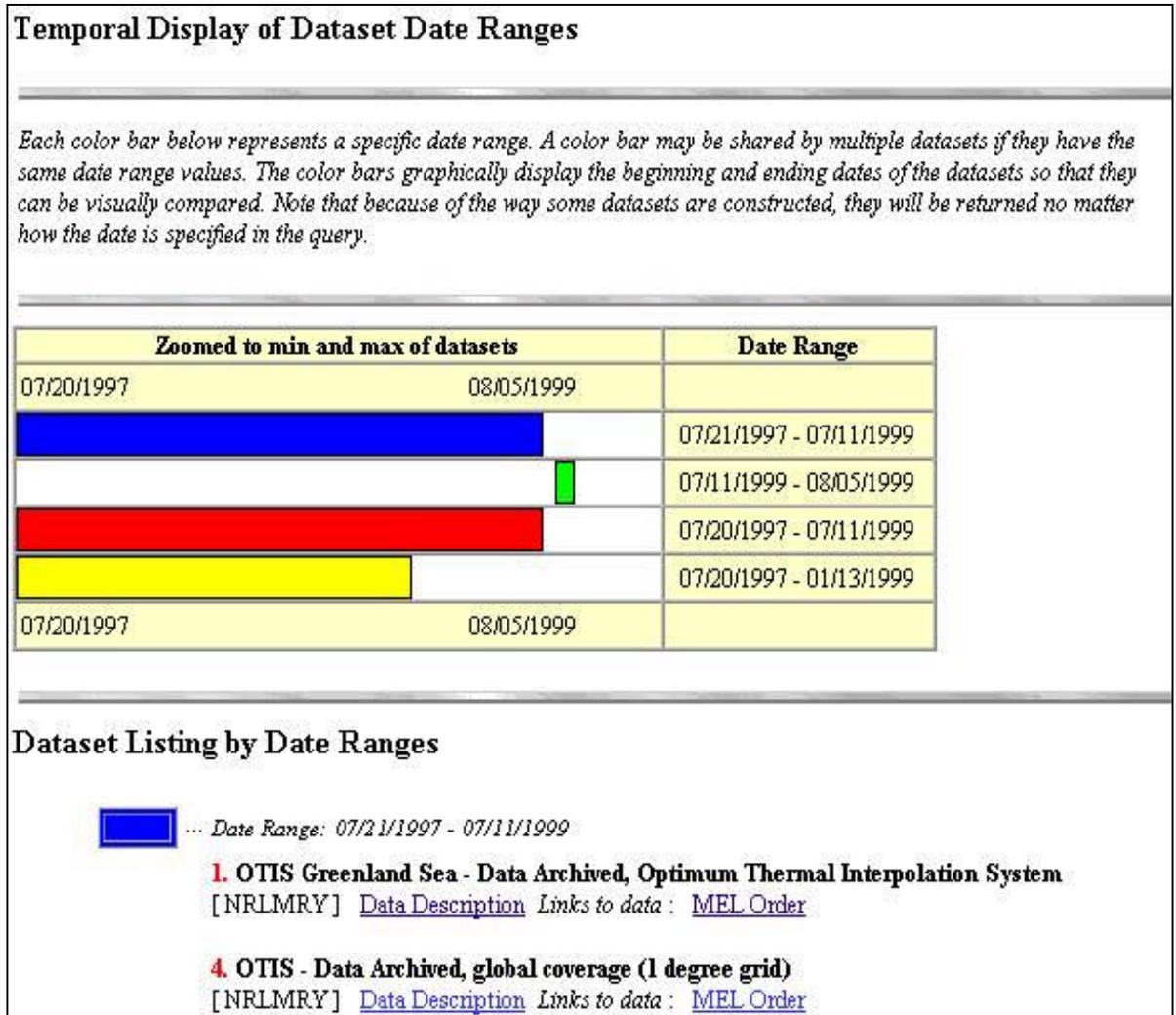


Figure 15. HTML Query Temporal Display of Dataset Date Ranges

Reset will return the buttons and boxes on this screen to their original values. **All** is the default setting.

Each data set is shown with links for data description and ordering information. Follow the **Data Description** link to read details about the data set. Follow the **MEL Order** link to place a MEL order for this data set. Note that the **MEL Order** link may be

disabled (grayed out) if the MEL Ordering from the data source is not currently available. In this case, there will be a message to that effect in the data source header information at the beginning of the group of results (see **Figure 16**). See **Paragraph 5.6.2** for further explanation. Follow one or more **Alternative Access** links for additional access points to this data. If applicable, links to **Browse Graphics** are provided.

	NRLMRY - Naval Research Laboratory Monterey		
	Total matched: 2	Datasets returned: 1-2	Description
<ul style="list-style-type: none"> • Ordering is currently not available from this data source 			
<p><input type="checkbox"/> 1. COAMPS Korea - Data Archived 19980905 - 19990519, korea_nest2_appl, Coupled Ocean Atmosphere Mesoscale Prediction System Data Description <i>Links to data : MEL Order</i></p> <p><input type="checkbox"/> 2. COAMPS Korea - Data Archived 19990523 - 20000601, korea_nest2_appl2, Coupled Ocean Atmosphere Mesoscale Prediction System Data Description <i>Links to data : MEL Order</i></p>			

Figure 16. Disabled MEL Order Links

Links to additional records (if any) that match the query are shown near the bottom of the window. Click **Get next ## from each data source** or **Get all ## data sets**.

Classified MEL NOTE: The *Query Results* page in a Classified MEL will carry an overall classification at the top and bottom that is determined solely from the classifications and Control Markings of the titles of the result set. The classification and Control Markings of the title will precede the title in parenthesis. See **Appendix D** for valid classifications and how overall classifications are determined.

When the Bounding Areas are visualized, the overall classification of the page will depend on the titles as well as the bounding coordinates of the results set. The classifications of the bounding coordinates and the titles will precede them in the display.

When the Date Ranges are visualized, the overall classification of the page will depend on the titles as well as the date ranges of the results set. The classifications of the date ranges and the titles will precede them in the display.

If the metadata is missing a valid security classification, the link to “Data Description” will be disabled (grayed out) and a link to a page that explains the problem will appear next to it labeled “[Inaccessible]”.

5.3.5.2 Data Description

Each data set record is defined by a metadata record like the one shown in **Figure 17**, using the FGDC CSDGM format to list information about the data set grouped into the following categories:

- a. Identification Information – Provides basic information about the data set, including description, bounding coordinates, and keywords.
- b. Data Quality Information (optional) – Provides a general assessment of the quality of the data set.
- c. Spatial Data Organization (optional) – Describes how spatial information is represented in the data set information.
- d. Spatial Reference Information (optional) – Describes the reference frame for the coordinates in the data set and how to encode the coordinates.
- e. Entity and Attribute Information – Provides information about the content of the data set, including the entity types, their attributes, and the domains from which attribute values may be assigned.
- f. Distribution Information – Provides information about the distributor of and options for obtaining the data set.
- g. Metadata Reference Information – Provides information on the currency of the metadata information, and the responsible party.

After reviewing the metadata record, the data set may be ordered by selecting **Generate Order Form** (see **Figure 17**) at the top of the metadata record. The data set may also be ordered by selecting the **MEL Order** link on the data set *Query Results* page.

Generate Order Form

DTED0 - Digital Terrain Elevation Data Level 0 (DTED0) - N90,W180

Metadata Sections:

- [Identification Information](#)
- [Data Quality Information](#)
- [Spatial Data Organization Information](#)
- [Spatial Reference Information](#)
- [Entity and Attribute Information](#)
- [Distribution Information](#)
- [Metadata Reference Information](#)

Identification Information:

Citation:

Citation Information:

Originator: NIMA - National Imagery & Mapping Agency

Publication Date: 19961101

Title:

DTED0 - Digital Terrain Elevation Data Level 0 (DTED0) - N90,W180

Edition: Ed. 1 -

Geospatial Data Presentation Form: Model

Figure 17. HTML Query Dataset Order Form

Note that the **MEL Order** link will be disabled (grayed out) if the MEL Ordering from the data source is not currently available. In such a case, the **Generate Order Form** button will also be missing from the metadata display. See **Paragraph 5.6.2** for further explanation on the unavailability of the MEL Ordering.

Classified MEL NOTE: In the Classified MEL, the classification of the metadata display page will be determined from the *Metadata Security Classification* field in the metadata. Even if the metadata contains classifications and Portion Markings in its other fields, these are disregarded for overall determination. It is assumed that the metadata creator has correctly determined the overall classification of the metadata, i.e. that is consistent with the Control Markings (see **Appendix D**).

5.3.5.3 MEL Dataset Order Form

The *MEL Dataset Order Form* shown in **Figure 18** is used to order the record. The layout of the form depends on the specific data set selected. Some order forms will offer choices to subset the data associated with the complete data set, and others will not. If help is required with a specific order form, use the contact information in the *Data Description* for the given data set to obtain the necessary help.

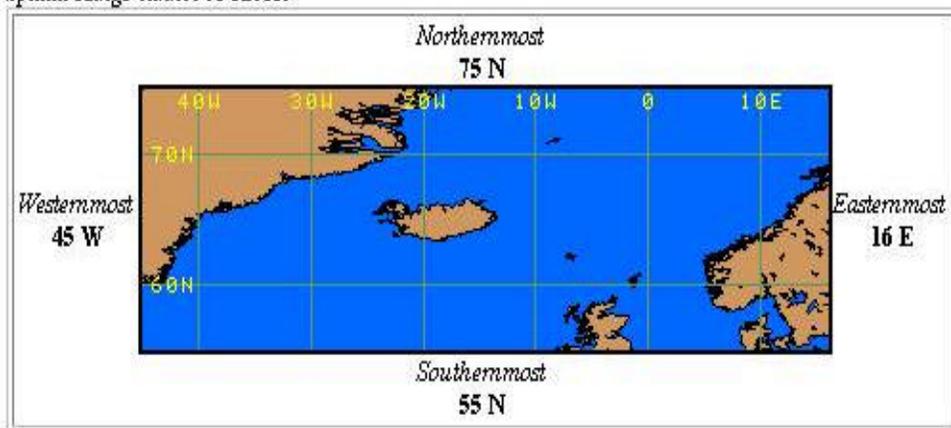
MEL Dataset Order Form for:

OTIS Greenland Sea - Data Archived, Optimum Thermal Interpolation System

Order data from the selected dataset using the form below. First review the data. Each order form is customized for a specific dataset. There may be areas to enter or to select values that will further subset (customize) the data ordered. These areas have headers that are shown in red. If no choices are made in these areas, all selections shown will be returned.

COVERAGE OF DATASET (Latitude/Longitude in degrees):

Spatial Range cannot be subset

**DATE/TIME RANGE** (GMT-YYYYMMDDhh. hh):

WARNING: The archive represents a very large collection of data. Please limit this order to three weeks of data or less. Orders for more than three weeks of data may be truncated.

Figure 18. MEL Dataset Order Form

Data set

The name of the data set for the given order is specified near the top of the order form (e.g., OTIS Greenland Sea - Data Archived, Optimum Thermal Interpolation System).

Coverage of Data set

The Coverage of Data set section indicates both numerically and graphically the region covered by the given data set.

Request Type

The three options provided for ordering the dataset are: **SUBSCRIBE** to the data set and have the data extracted and sent on a regular basis, **NOTIFY** the user by email when new data is available (no data is delivered), or **GET** the data set and deliver it

one time only. The mutually exclusive options for the Request Type are shown in **Figure 19**.

<p>REQUEST TYPE:</p> <ul style="list-style-type: none"><input type="radio"/> SUBSCRIBE to data as it is produced (push to your delivery site).<input type="radio"/> NOTIFY me via email every time the data is available (no data delivery).<input checked="" type="radio"/> GET the data as a single request.
--

Figure 19. HTML Query Order Form Request Types

SUBSCRIBE

Subscription orders are delivered to the specified address as soon as the data set can be accessed and delivered. An updated data set is delivered any time the requested dataset is updated, modified, or extended.

NOTIFY

Users are notified as soon as the dataset is accessible. A new message is sent whenever the data set is updated, modified, or extended. No data set is sent with this request type, only a notice.

GET

Get orders are delivered to the specified address as soon as the data set can be accessed and sent.

Other Choices

Some order forms will offer choices to further subset the data associated with the complete data set, and others will not. If help is required with a specific order form, see the contact information in the *Data Description* for the given data set.

<p>Classified MEL NOTE: The overall classification of the <i>Order</i> page is determined from the classifications and Portion Markings of the title, the coverage of the data set, the date-time range of the data set and any other sections that have been Portion Marked and appear in the page (see Appendix D).</p>

User Profile

A text entry box is provided near the bottom of the order form to enter an email address. This required field is used to identify a set of information about each MEL user, known as a *User Profile*.

The **Create New User Profile** and **Edit User Profile** buttons are used to create a user profile for the first time or to change an existing profile, respectively. Each of these procedures starts by entering an email address in the displayed Email box. The entire email address must be used, such as, *doej@itsi.dma.mil*.

Create a New User Profile

To create a new *User Profile* from the *MEL Order Form*, enter a complete email address in the "Email" box and click **Create New User Profile**. **Figure 20** shows the *Create User Profile* screen.



The screenshot shows a web form titled "Create User Profile". At the top, there is a horizontal line. Below it, the text "Email (used as login name):" is followed by a text input field containing "me@home.com". Underneath, the instruction "Enter your new password twice to create a new profile" is displayed. There are two "Password:" labels, each followed by a text input field containing six asterisks. To the right of the second password field is a grey button labeled "Create User Profile". At the bottom of the form, there is another horizontal line.

Figure 20. Create User Profile

Move the pointer to the first "Password" box and enter the desired password (asterisks will be displayed for security purposes). Move the pointer to the second "Password" box and retype the password again (to verify the previous password entry). Click **Create User Profile** to display the *Edit User Profile* form depicted in **Figure 21**.

Edit User Profile

To order data from MEL, a user profile must exist. Required information is labeled in **red**. All other information is optional but is helpful in understanding MEL's users. When finished editing your user profile, press the "Save User Profile" button.

User Information

Name:

Email:

Phone:

Fax:

Organization:

Project:

Address:

City: **State:** **Zip:**

Figure 21. Edit User Profile

Type the appropriate entries into the form. When the *User Profile* form is complete, click **Save User Profile** to record the information at the MEL Access Site. The display will return to the *MEL Order* page. Click **Submit Order** to continue.

Edit User Profile

If the previously established User Profile for the email address is incorrect, click **Edit User Profile**. Move the pointer to the "Password" box and type the password associated with the User Profile. Click **Edit Profile**. This action displays the *Edit User Profile* form as discussed above (**Figure 21**). Make changes as desired in the fields provided and click **Save User Profile** when completed.

Submit Order

Clicking **Submit Order** will display the "Please Confirm Delivery Choices" page as shown in **Figure 22**.

Please Confirm Delivery Choices

Data Delivery Information

Delivery Method:

Delivery URL * :

Confirmation:

* If the Delivery Method above is *Anonymous FTP Delivery*, an anonymous ftp URL of the form: *ftp://your_anonymous_ftp_domain/path_to_delivery_directory* is required.

Figure 22. Please Confirm Delivery Choices

Two options are provided for the delivery of the ordered data. If the preferred delivery method is to transfer the ordered data to a local FTP server, the user should choose **Anonymous FTP delivery to your site** from the *Delivery Method* list. This choice requires an entry in the **Delivery URL** box. The form of the URL should be:

ftp://<your_anonymous_ftp_domain>/<path_to_delivery_directory>

If the ordered dataset is to be downloaded from the Resource Site FTP server, the *Delivery Method* option is set to **Anonymous FTP pickup at the Resource site**.

The *Confirmation* field is set to **EMAIL** as the default. This means the user will receive an email message confirming the delivery of the ordered data set. Set the option to **NONE** if order confirmation is not desired. Click **OK** to transmit the data request, or **Back To Order Form** to return to the *Order* form. A *MEL Data Request Acknowledgement* similar to the one depicted in **Figure 23**, will be displayed.

MEL Data Request Acknowledgment

Your request has been assigned order ID: nima-2176-o

The order is being processed by the: National Imagery and Mapping Agency.

See text of order

You can [check on your orders](#). However, if your order can quickly be fulfilled, it may not show up.



[Home Page](#) | [About MEL](#) | [Browse Holdings](#) | [HTML Data Query](#) | [Java Data Query](#) | [MEL Tools](#)

Figure 23. MEL Data Request Acknowledgement

Note the assigned order number (i.e., nima-2176-o). This number is used if it becomes necessary to request assistance from the MEL System Administrators regarding the order. Click **See text of order** to view the details of the order. You can also follow the link “check on your order” to check the status of orders and subscriptions. Note, however, that the order just submitted may not appear in this list if it has already been serviced.

5.3.5.4 Alternative Access

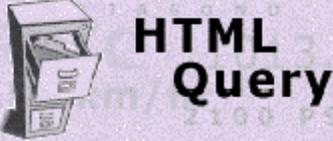
Some data sets offer a *Alternative Access* link to additional information about ordering the data set. In some cases, a Resource Site will have its own non-MEL ordering mechanism and data may only be ordered through this alternative access point.

5.3.5.5 Browse Graphics

Some data sets will offer one or more images or other visual description of the data set. Click the **Browse Graphic** icon to view the graphic.

5.3.6 HTML Query Interface to Restricted Metadata

As mentioned in **Paragraph 4.1.2.4**, in the Unclassified MEL there is an alternative HTML Query page that requires logging in. Once users point their browsers to this alternative URL, they are presented with a login page as shown in **Figure 24**. Users must enter their e-mail and password to get in. However, users will only gain access if they are on at least one Resource Site's access control list.

				Help Tutorials Find Site Map Contact MEL Home Page	
About MEL	HTML Data Query	Java Data Query	MEL Tools		

Restricted Access Login Page

Please use your E-mail address and password to login.

Email Address:

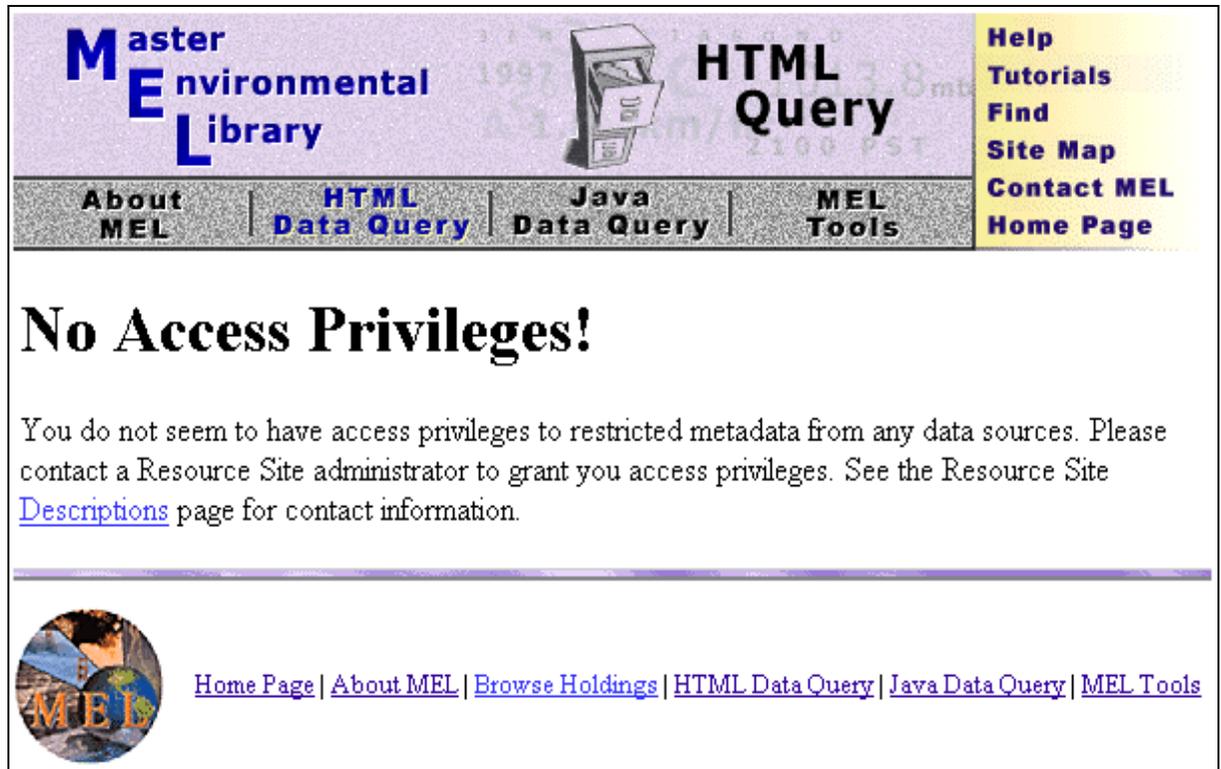
Password:

If you can't remember your password, contact the MEL administrator: Cindy Curtis at curtis@nrlmry.navy.mil or (888) 566-7672 to get a new one.


[Home Page](#) | [About MEL](#) | [Browse Holdings](#) | [HTML Data Query](#) | [Java Data Query](#) | [MEL Tools](#)

Figure 24. Restricted Access Login Page

If they are not on an access control list of a Resource Site that maintains restricted metadata (not all Resource Sites do), they will be presented with a page that states “No Access Privileges” (see **Figure 25**). This indicates that they do not have access privileges.

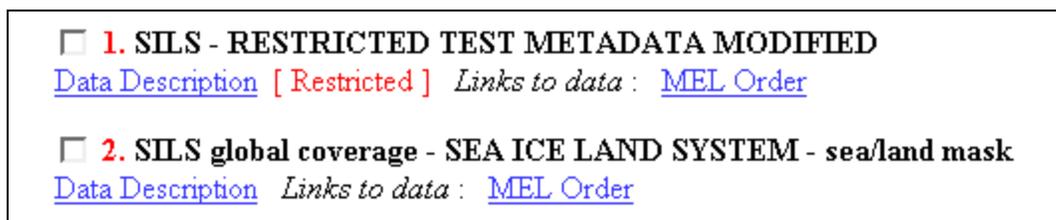


The screenshot shows the Master Environmental Library website. At the top left is the logo 'Master Environmental Library'. To its right is an icon of a computer monitor displaying a document, with the text 'HTML Query' next to it. Further right is a yellow navigation bar with links: 'Help', 'Tutorials', 'Find', 'Site Map', 'Contact MEL', and 'Home Page'. Below this is a grey navigation bar with links: 'About MEL', 'HTML Data Query', 'Java Data Query', and 'MEL Tools'. The main content area features a large heading 'No Access Privileges!' followed by a paragraph: 'You do not seem to have access privileges to restricted metadata from any data sources. Please contact a Resource Site administrator to grant you access privileges. See the Resource Site [Descriptions](#) page for contact information.' At the bottom left is a circular logo with 'MEL' and a globe. At the bottom right is a horizontal navigation bar with links: 'Home Page | About MEL | Browse Holdings | HTML Data Query | Java Data Query | MEL Tools'.

Figure 25. No Access Privileges

Once a user has gained access, the HTML Query process is exactly the same as described in the previous sections except that they now have access to restricted metadata as well. Some other differences are:

- The navigation bar that links to HTML Query at the top and bottom pages will take the user to a default *HTML Query* page that is still in the restricted domain. In other words, users are already logged in and have access to restricted metadata.
- If a search returns restricted metadata in the result set, the item is denoted in **Figure 26** on the *Results* page or the *Visualization* pages.

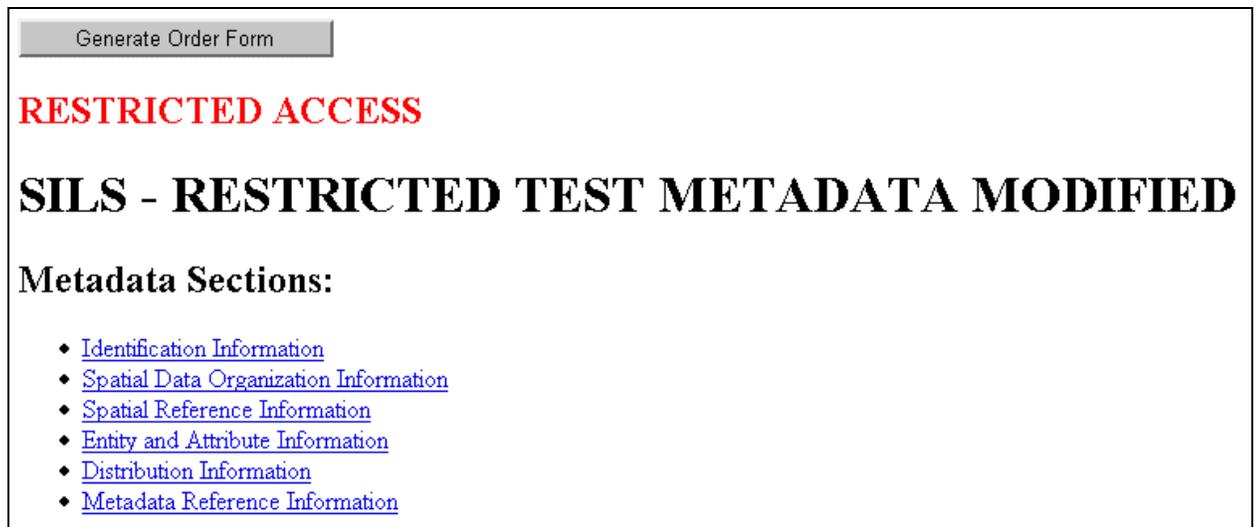


The screenshot shows a search result box with two items. Each item is preceded by a checkbox and a red '1' or '2'. Item 1 is '1. SILS - RESTRICTED TEST METADATA MODIFIED' with a blue link 'Data Description [Restricted]' and a blue link 'Links to data : MEL Order'. Item 2 is '2. SILS global coverage - SEA ICE LAND SYSTEM - sea/land mask' with a blue link 'Data Description' and a blue link 'Links to data : MEL Order'.

Figure 26. Restricted Item

If restricted metadata is displayed, the *Display* page will indicate this with the title "RESTRICTED ACCESS" in red as shown in **Figure 27**. This will also be true for the *Order* page if the dataset is orderable through the MEL.

The message indicating that a Resource Site maintains restricted metadata is not displayed if a particular user already has access to the metadata.



Generate Order Form

RESTRICTED ACCESS

SILS - RESTRICTED TEST METADATA MODIFIED

Metadata Sections:

- [Identification Information](#)
- [Spatial Data Organization Information](#)
- [Spatial Reference Information](#)
- [Entity and Attribute Information](#)
- [Distribution Information](#)
- [Metadata Reference Information](#)

Figure 27. Restricted Access

5.4 JAVA QUERY PROCESSING PROCEDURES

The **Java Query** page shown in **Figure 28** allows the user to specify the parameters of the desired environmental data. While the HTML Query is primarily text-oriented, the Java Query is primarily graphics-oriented.

Classified MEL NOTE: The *Java Data Query* option is not available in Classified MEL. If the link is followed, a page will come up that briefly mentions this restriction.

The Java applet allows the definition of a query, the listing of the returned results, and the mapping of those results to attributes for visualization purposes. These three functions comprise the top-level tabs of the applet (the mapping function tab is available when results are displayed). To define and perform a query, click the **Define Query** tab. Four sub-tabs appear that allow setting of the region of interest, the date range of interest, the keywords, and the data sources to search.

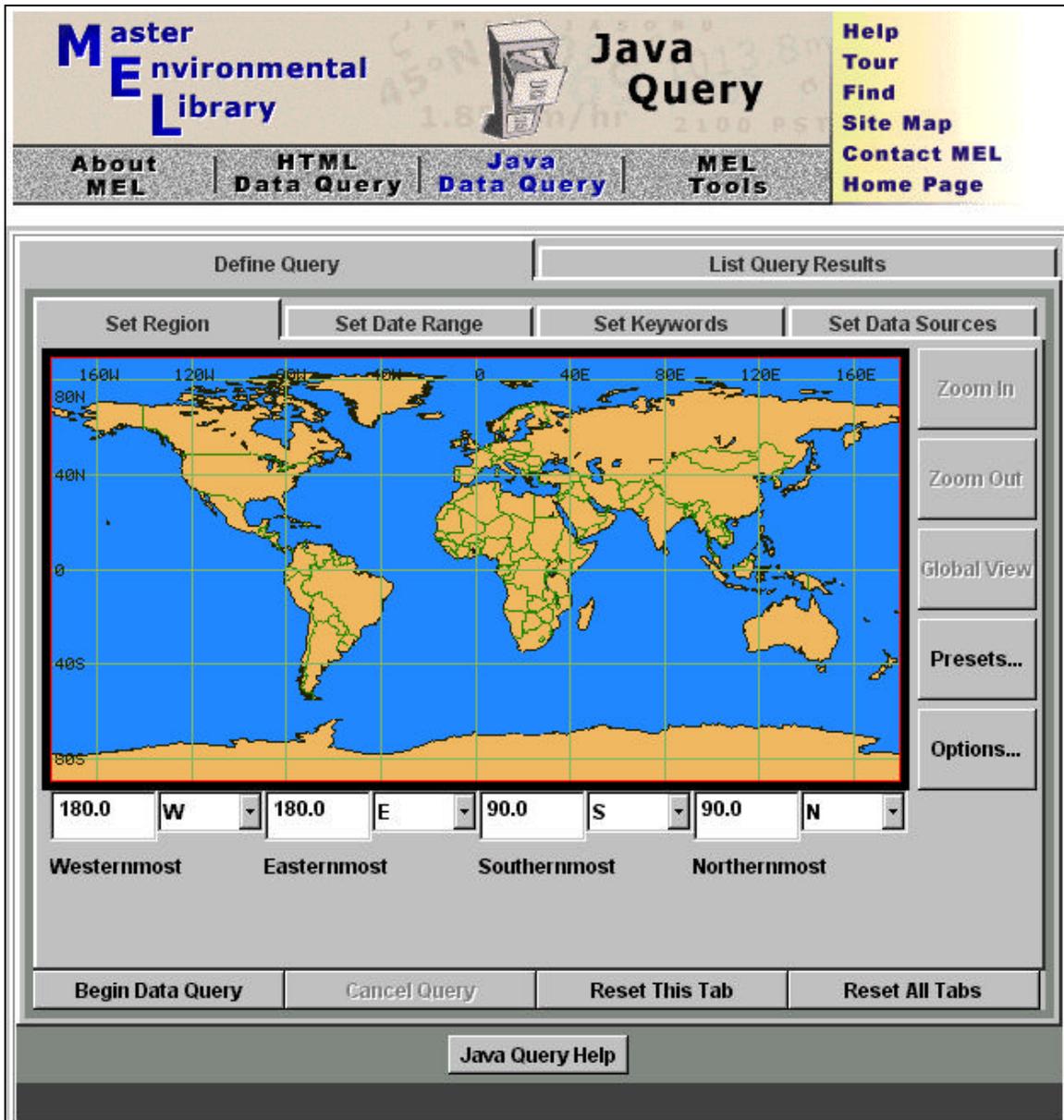


Figure 28. Java Query Page

The buttons at the bottom of the **Define Query** tab are used for the following functions:

- a. **Begin Data Query** - Click to submit the query parameters to the MEL for processing.
- b. **Cancel Query** – Click to cancel the query just submitted. No results will be returned.
- c. **Reset This Tab** – Click to reset the Query parameters on the presently displayed tab to original default parameters.
- d. **Reset All Tabs** – Click to reset all Query parameters on all tabs to default parameters.

The **Java Query Help** button that displays help concerning the use of the *MEL Java Query* is always visible at the bottom of the window. Context sensitive amplifying information will be displayed at the bottom of the display.

5.4.1 Set Region

The Spatial Region of Interest (SRoI) may be selected using the following three options: **Interactive Map**, **Specification of Longitude and Latitude Range**, or the **Selection of a Preset Region**, as described below.

5.4.1.1 *Interactive Map*

To use the *Interactive Map* (see **Figure 28**), point to the upper left corner of the region of interest and drag the pointer to the lower right corner of the SRoI. This marks the rectangular SRoI. Click **Zoom In** to redraw the map showing the expanded SRoI. The longitude and latitude boundaries of the new map are automatically updated in the accompanying windows. This process may be repeated as often as desired to narrow the particular region of interest. Use **Zoom Out**, **Global View**, or **Reset This Tab** to return to earlier displays (i.e., larger coverage area). Click **Options...** to set map display options such as the drawing of rivers and political boundaries.

5.4.1.2 *Specification of Longitude and Latitude Range*

In place of using the *Interactive Map*, the longitude and latitude limits (in decimal degrees) may be specified in the text entry boxes and directional drop-down lists. Click **Zoom In** to redraw the map to display the specified SRoI. The values specified can be *directional* (e.g., 15 S), or *negative values* can be used without specifying direction (e.g., -15 converted to 15 S). This option can be set from the window that is displayed when the **Options...** button is clicked.

5.4.1.3 *Selection of a Preset Region*

Click **Presets...** to display a series of lists such as the one shown in **Figure 29** for selecting a preset region. These are four levels in the region hierarchy. The selection of an item in the leftmost list displays a sub-list for that selection in the lists to the right. The message bar at the bottom of the window always displays the current selection. The selection automatically redraws the map and updates the region of interest.



Figure 29. Preset Regions

5.4.2 Set Date Range

The **Set Date Range** tab shown in **Figure 30** is used to define the date range for the query. All dates are based on GMT. There are four mutually exclusive methods for setting the date range. The first method has four preset date ranges relative to the current day i.e., **Last 7 days**, **Last 30 days**, **Last 365 days**, and **Year To Date**). The second method locates data within a date range (e.g., get all data between 01/01/1998 and 10/25/1998). The third method locates data relative to a specific date (e.g., get all data for all dates equal to 10/25/1998). The last method (which is also the default method) locates data for all dates.

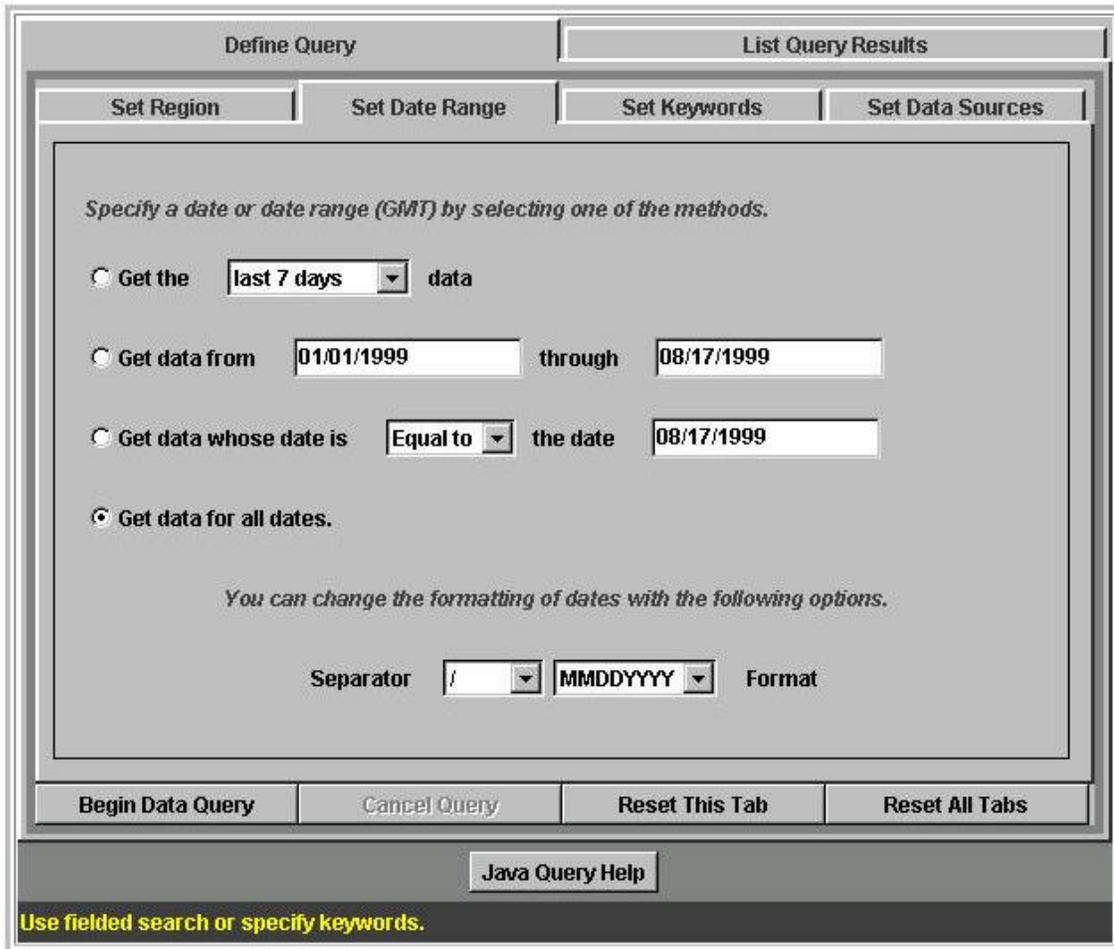


Figure 30. Java Query Set Date Range

The query display for the date range can be further customized by choosing the date format. See the drop down lists for all choices available. If the field separator or format is changed, the display will automatically update to the new format. All data sets that meet the query specifications will be returned.

5.4.3 Set Keywords

Set Keywords is used to define the keywords that will be used in the query. The two methods for choosing keywords are *Full Text Query* and *Fielded Query*. Multiple keywords may be entered or selected in both methods. Any time there are multiple keywords, the keywords will be combined by a logical operator (i.e., AND, OR). The operator OR means one or more keywords must be found while the operator AND means all keywords must be found. Phrases may be entered but these must be surrounded by double quotes. Wild cards are allowed only at the end of a keyword as in `temp*`, which means words such as temper, temperature, and tempest would match the query. Either the

Fielded Query or *Full Text Query* must be used to enter specific keywords, but both of them cannot be used in the same query. *Full Text Query* is shown as default. To change to a *Fielded Query*, use the radio buttons at the bottom of the sub-tab.

5.4.3.1 Full Text Query

In this type of keyword searching, specified keywords will be searched in all the fields of the metadata that have been indexed. Keywords can be typed directly into the Text Input Box (see **Figure 31**). Any keyword can be typed, however only data that exactly matches those keywords will be returned. If it is not known whether a keyword actually describes data in the MEL, it is best to first look at the keyword list to determine that it does. Otherwise, no data may be found. If more than one keyword has been entered, the keywords will be combined by the logical operator (i.e., AND, OR) selected.

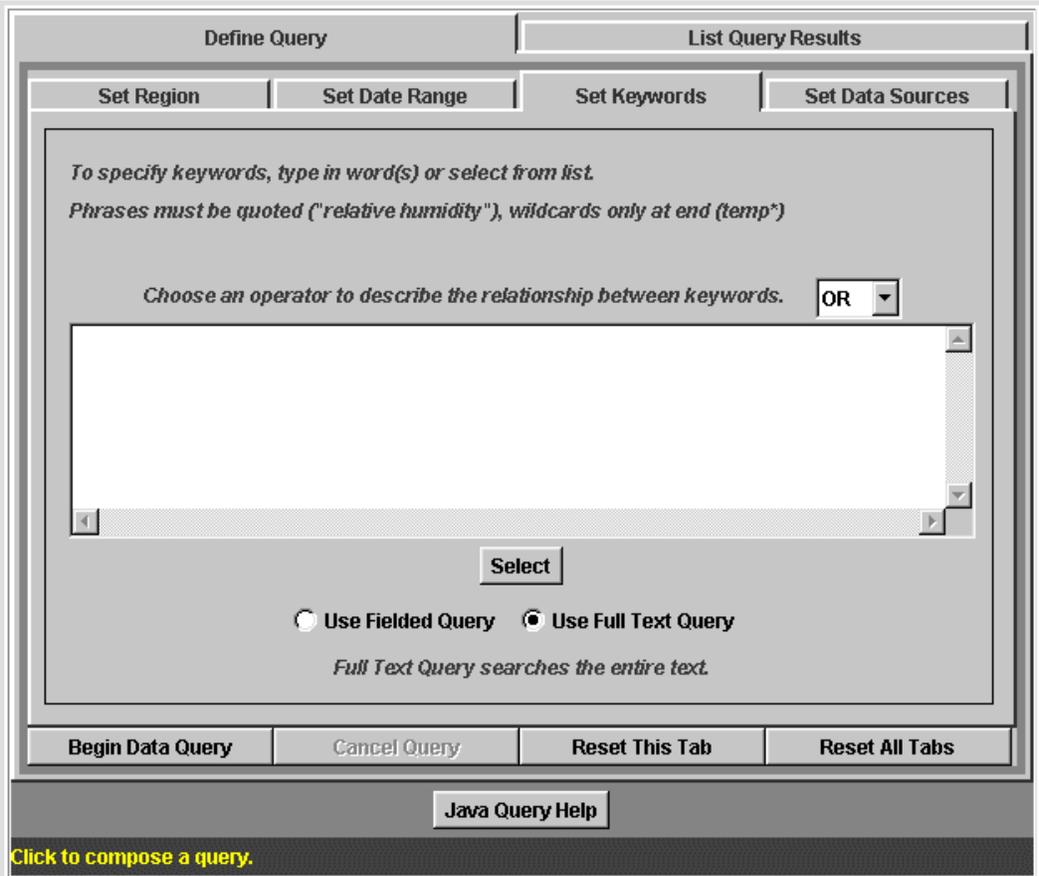


Figure 31. Java Full Text Query

Keywords can also be selected from keyword lists. To display the MEL keywords, click the **Select** button. A new window will be displayed showing keywords organized in alphabetical lists (see **Figure 32**). The purpose of the keyword lists is to provide help in locating actual keywords used in the MEL, so that a query based on these keywords would always result in matches.

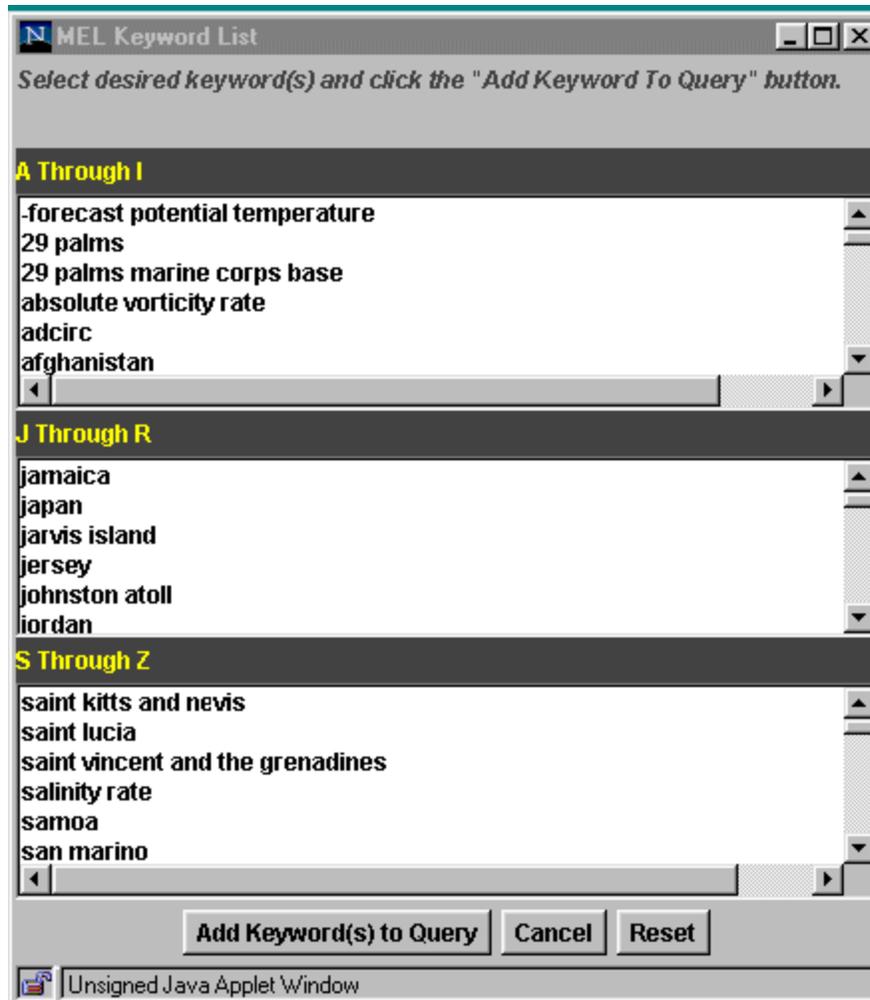


Figure 32. Java Query MEL Keyword Lists

Keywords can be selected from as many lists as desired. Multiple keywords can also be selected from the same list. Select one or more keywords from one or more lists by clicking on that keyword. When all keywords are selected, click the **Add Keyword(s) to Query** button. The window disappears and all the selected keywords get added to the keyword text box.

5.4.3.2 Fielded Query

Fielded Query can also be used to define the keyword query (see **Figure 33**).

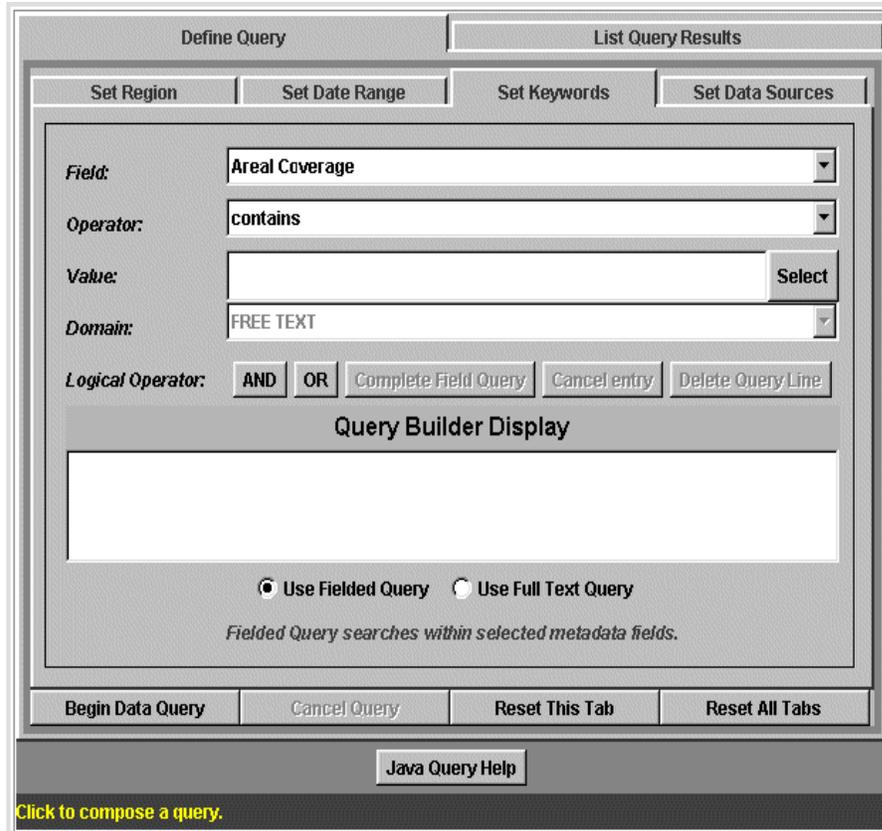


Figure 33. Java Fielded Query

The MEL uses the FGDC metadata content standard for its catalog documents. *Fielded Query* is useful when there is a need to locate information in specific metadata fields. For example, it is possible to only query the metadata originator field for keywords. The fields listed for searching are MEL specific and may not reflect the actual FGDC field names that are being searched. Further, some of the choices may be searching the same field in the metadata. For instance, the same keyword searched under *Areal Coverage* and *Environmental Domain* will yield the same results. The following **Table 2** shows which listed field names search which FGDC metadata fields:

MEL Specific Field	FGDC Field Searched
Areal Coverage	Stratum Keyword
Attribute Label	Attribute Label
Entity Type Label	Entity Type Label
Environmental Domain	Stratum Keyword
Exercise/Simulation Name	Theme Keyword
Location	Place Keyword
Originator	Originator
Product Name	Theme Keyword
Resource Type	Geospatial Data Representation Form
Scientific/Engineering Field	Theme Keyword

Table 2. MEL-FGDC Field Correspondence

When multiple keywords are entered in the same text field, they are combined with an OR operator in the query. More complex queries can be composed as follows:

Select the field of interest from the **Field** select box. Then enter a keyword into the "Value:" text input box. Select an operator (i.e., AND, OR). The field/value combination will be added to the *Query Builder Display*. Repeat the process by selecting another field, entering a keyword, and selecting an operator. If the term just entered is to be the last one, then click **Complete Field Query**

Keywords can also be selected from keyword lists specific to the currently selected field. To display the keywords for a specific field, press the **Select** button that appears next to the text input box labeled *Value*. A new window will be displayed showing keywords that are actually used in this section of the metadata (see **Figure 34**). The purpose of the keyword lists is to provide help in locating actual keywords used in the MEL so that a query based on these keywords would always result in matches.

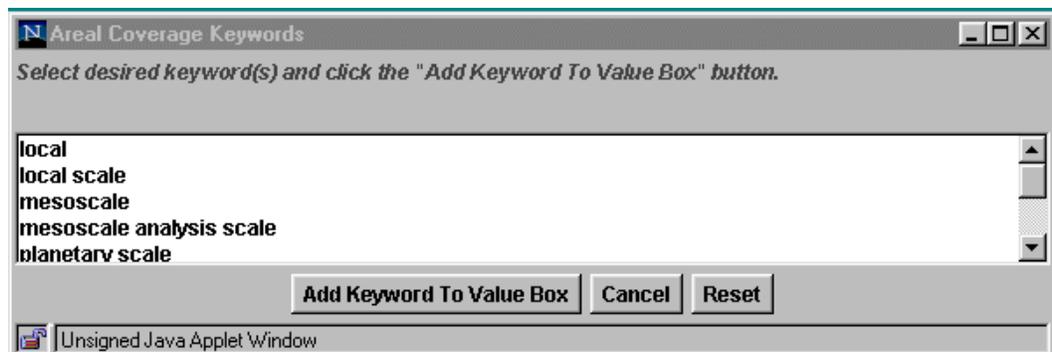


Figure 34. Java Query Areal Coverage Keyword List

Select a keyword from a list by clicking on that keyword. Then click the Add Keyword To Value Box button. The window disappears and the keyword or phrase selected gets added to the text box.

There are several other control buttons in the fielded query. The **Cancel Entry** button removes the last keyword entered from the text input box. The **Delete Highlighted Entry Line** button removes a line from the query. The purpose of these is to help revise a query without clearing the form and starting over.

5.4.4 Set Data Sources

The **Set Data Sources** tab is used to specify the data sources from which data can be returned. A data source is a site or facility that provides data locatable through the MEL Resource Sites. As shown in **Figure 35**, a map appears with squares located over the location of the data source. The default query has all data sources selected. Sites can be selected or deselected by clicking a square on the map or by dragging a rectangle with the pointer and clicking **Select in Region**. This method is especially useful to select all sites in a given geographical region.

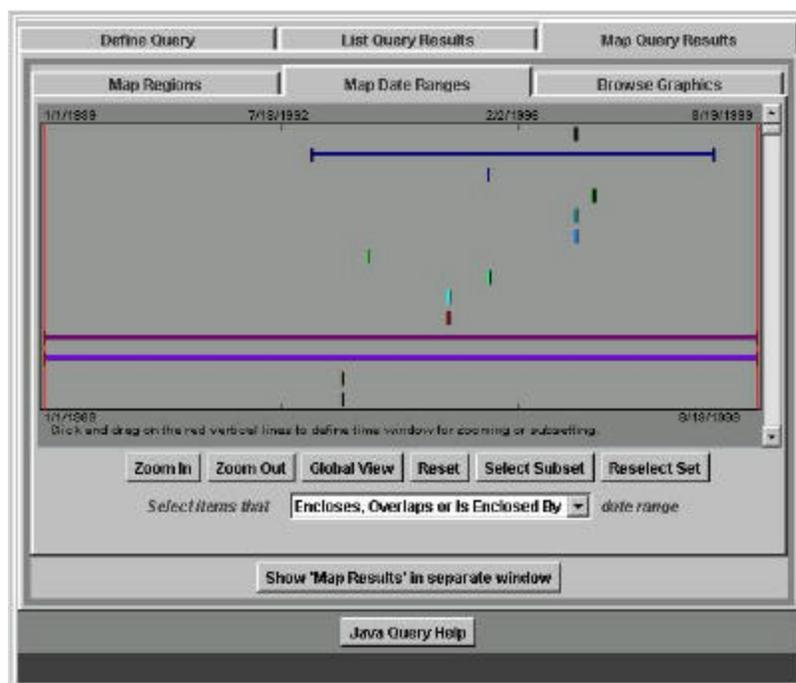


Figure 35. Java Query Set Data Sources - Site Locations

To view a textual listing of selected data sources, clear the **Show Map** checkbox (see **Figure 35**). The display will change to a listing of data sources as shown in **Figure 36**. To select a specific data source, highlight that data source name. To deselect it, turn off the highlight. Use the control key combinations to select more than one data source, as desired.

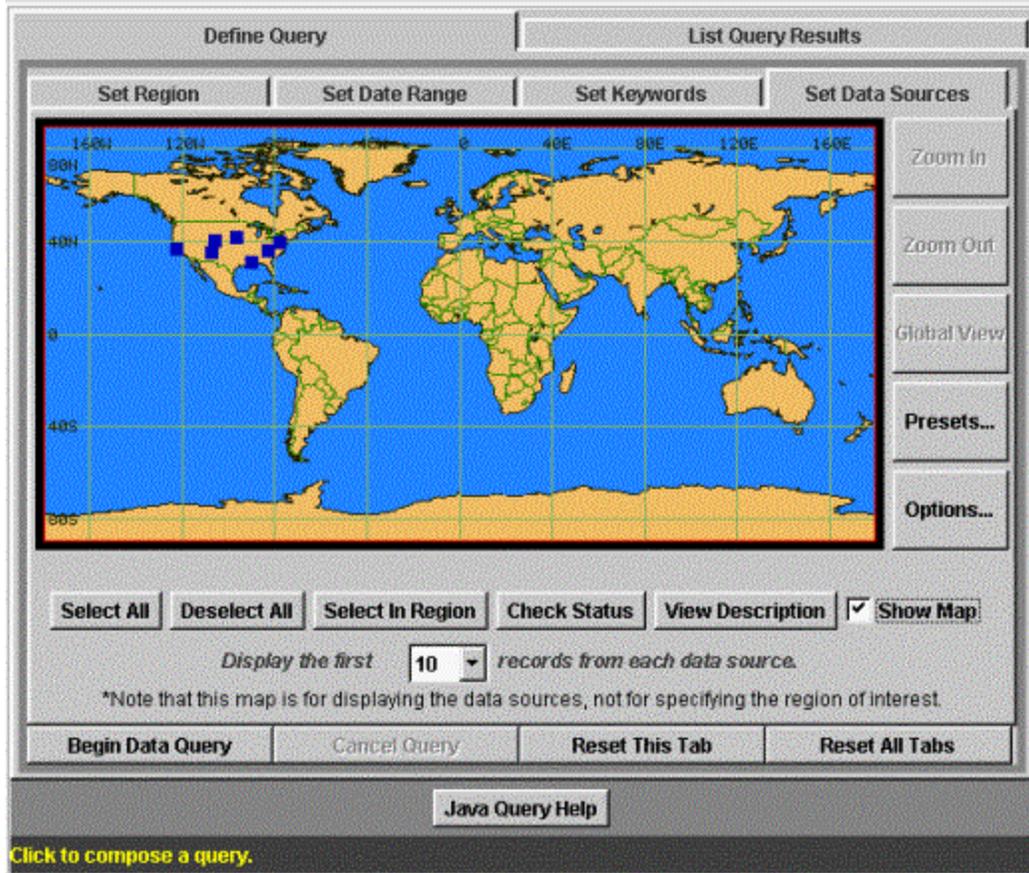


Figure 36. Java List of Data Sources

After selecting the data sources, select the maximum number of records (also referred to as data sets) that will be returned from each data source (there may be fewer). For example, if three data sources are selected and twenty records from each data source will be displayed, then a maximum of sixty data sets will be returned. However, if two data sources only had one data set each that satisfied the query and the third data source had twenty data sets that satisfied the query, then twenty-two data sets would be returned. Even if a data source had forty data sets that satisfied the query, only twenty would be returned.

The data sets returned are grouped by data sources. If the records shown are a subset of the total records found to match the query, then the records shown represent a random selection of these records.

Users can view the MEL Ordering status of all or specified data sources by clicking on the **Check Status** button. The page that comes up also displays any messages that may have been posted by the Resource Sites (See **Paragraph 5.6.2**).

Users can also get a brief description of the data source(s) by clicking the **View Description** button. The page that comes up describes the Resource Site and the type of resources they make available through the MEL (See **Paragraph 5.7.6**).

5.4.5 Begin Data Query

Once the query has been defined, click **Begin Data Query** at the bottom of the **Define Query** tab. The data sets that meet the query criteria will be returned and displayed in the **List Query Results** tab. To change the query results, a new query must be defined and resubmitted.

5.4.5.1 Query Results

The *Query Results* are returned in the **List Query Results** tab (see **Figure 37**) as a listing of data sets, which satisfy the submitted request, with buttons to display the MEL *Order Form* and *Data Description* screens.

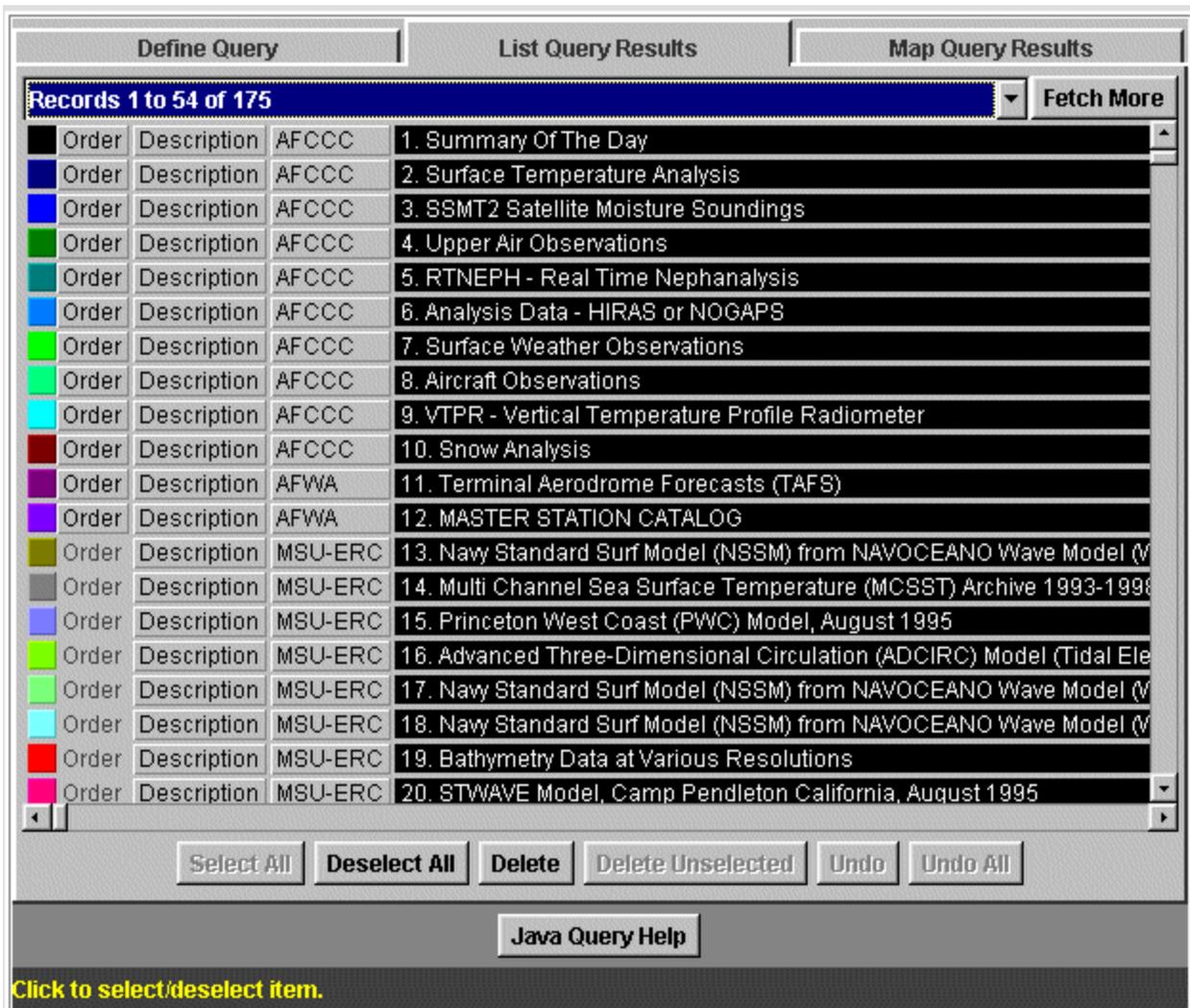


Figure 37. Java List Query Results

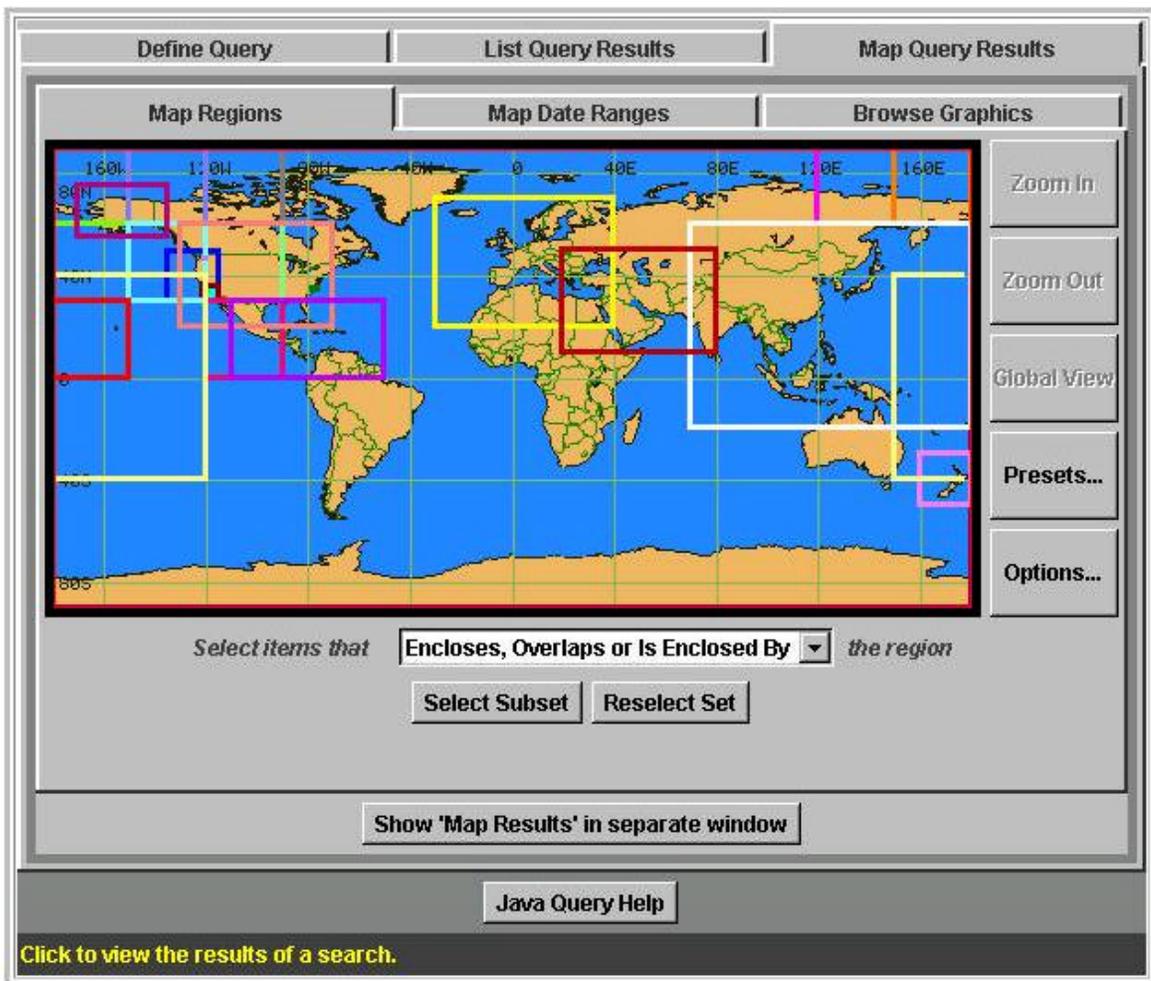


Figure 38. Java Data Sets By Map Regions

The **Map Regions** sub-tab can be used to make subsets of the returned data sets. Although the original query defined conditions such as latitude and longitude, the actual data sets may only partially represent those initial conditions. Thus, when the query results are mapped, it is possible to evaluate how the query results meet the desired results. The query results can be spatially redefined by drawing a new region on the map that only encompasses certain data sets. This region can also be subsetted.

The *Menu Bar* to the right of the map as shown in **Figure 38** provides controls for displaying and selecting regions. This is the same control bar as used in the **Define Query** tab. Use **Zoom In** or **Zoom Out** to redraw the map. Use **Global View** to reset the map to the entire world. Use **Presets...** to display preset countries and quadrants that can be selected and drawn on the map. Use **Options...** to provide toggles for the display of rivers, political boundaries, and

+/- latitude and longitude values. If +/- is toggled on, the latitude and longitude are displayed as positive and negative values.

To select a region to make into a subset, point to a corner of the desired region and drag the pointer to the opposite diagonal corner. Click **Select Subset** to set the region of interest to the new subset. **Zoom In** may be used to get a clear view of the selected area. The data sets now highlighted in **List Query Results** or **Map Query Results** will reflect this subset. **Reselect Set** returns the data sets and map display to either the one originally defined in the query, or if the region has already been made into a subset, to the region of origin. This function will only work on the most current deletion.

Map Date Ranges

As with the **Map Region** sub-tab, data sets can be made into a subset based on a date range. Data sets are subset in the **Map Date Ranges** sub-tab (see **Figure 39**). Data sets can also be made into multiple subsets. The date range of each data set is shown by a small vertical bar (single dates), or by two vertical bars connected by a horizontal bar (date range.) Each bar has a unique color that corresponds to the colored box shown on the **Query Results** list and the bounding rectangle in the **Map Region** sub-tab.

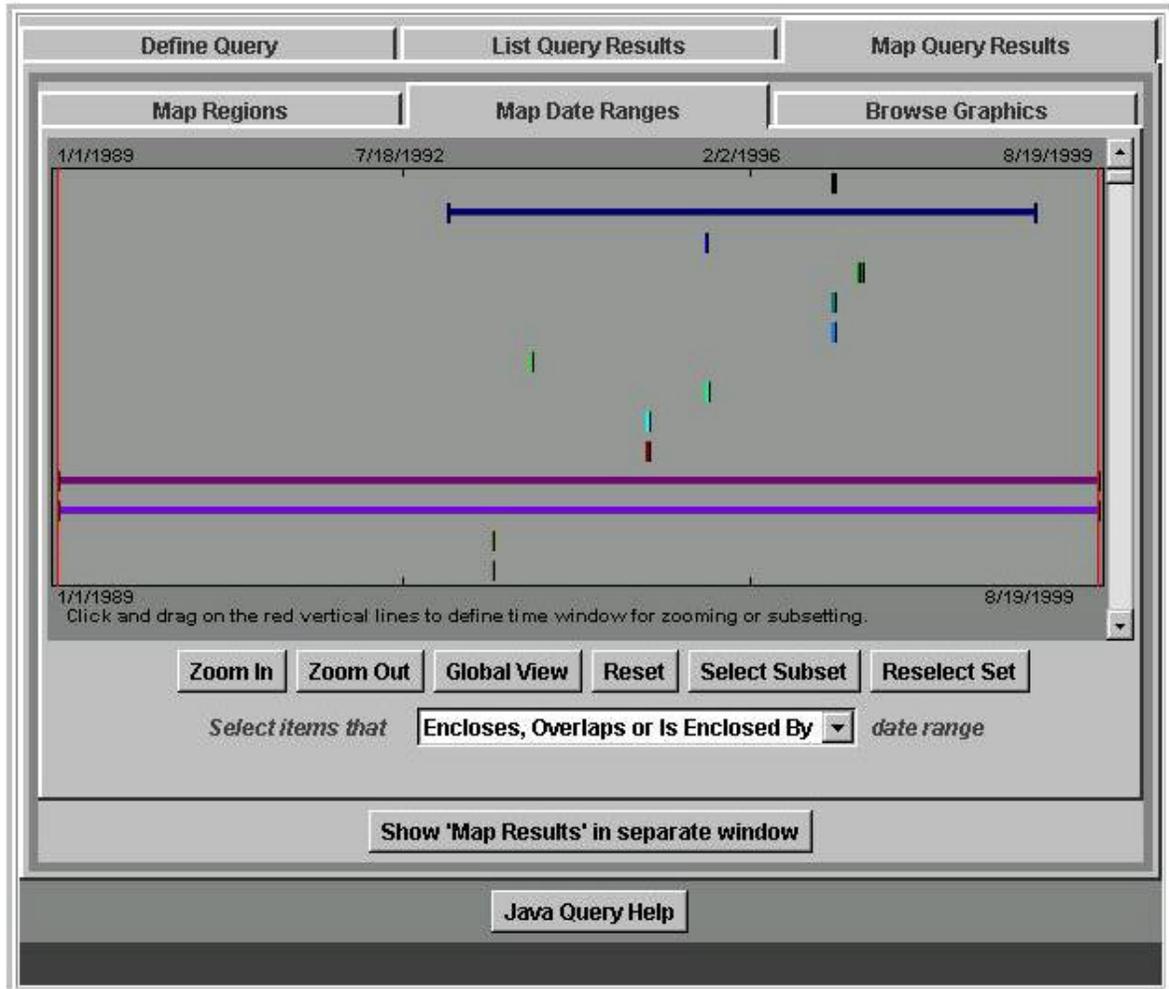


Figure 39. Java Data Sets For Map Date Ranges

Drag the left-hand red vertical bar to the right to set the beginning of the date range. Drag the right-hand red vertical bar to the left to set the ending date. Depending on the query and the date range selected, there will be one or more data sets between the vertical bars. Select the method by which the data sets will be subset, such as “Encloses, Overlaps, etc.). Click **Select Subset** to highlight the data sets defined by the date range.

A row of buttons below the date range interactive display provides the following additional capabilities:

- **Zoom In** - Provides greater detail for the selected date range by showing only the date range selected
- **Zoom Out** - Returns to the previous perspective before zooming in
- **Global View** - Resets the view to all data sets regardless of how many zooms have been done

- **Reset** - Resets the view to all data sets; it also resets the red vertical bars to their original settings
- **Reselect Set** - Resets the data sets to those that are currently in the **List Query Results** tab

Browse Graphics

Some metadata records may have browse graphics associated with them. A browse graphic is usually an image of a dataset described in the metadata record or an image associated with the dataset. This image can show a simple display of the data set, the results of an application that used the dataset, different aspects of the quality of the data set, or other information related to the data set. A browse graphic can also be an HTML file for additional description of the data set.

As with the **Map Regions** and **Map Date Range** sub-tabs, data sets can be made into subsets based on browse graphics. Click **Browse Graphics** to display only data sets with certain file types. As shown in **Figure 40**, a group of file type checkboxes across the bottom of the screen shows the available file types. Most browse graphics formats are recognized in the MEL and have symbols representing their file types (e.g., Graphics Interchange Format (GIF), Joint Photographic Experts Group image format (JPEG), Motion Pictures Experts Group image format (MPEG), Virtual Reality Markup Language (VRML), and HTML). Those that are not recognized are shown as "Unknown." The data type "None" refers to metadata records that do not have any browse graphics. Select or clear the appropriate checkboxes.



Figure 40. Java Data Sets Browse Graphics

After the browse graphic types are selected, click **Select Subset** to subset the data sets. Only the data sets that have browse graphics of the selected types will be displayed. Data sets can be subset multiple times. **Reselect Set** resets the selection list to include all data sets shown on the **Query Results** list. These data sets will match those returned from the original query unless data sets have been deleted.

A powerful feature of **Browse Graphics** is that data can be immediately visualized. If the data source provides a link to a graphic, click the associated icon to display that graphic. This data can be immediately assessed and captured (right-click in most Web browsers will display a menu for saving the image to disk.)

5.4.5.2 Data Description

Column three of the *Query Results* list contains a link to a dataset description. Click **Description** to display the associated metadata record in a new window. This record provides various facts about the dataset including information concerning dataset identification, data quality, entity and attributes, data distribution, and general reference. To go directly to an order form from the data description, click **Generate Order Form**. Note that if MEL Ordering from the data source is not currently available, the **Generate Order Form** button will be missing from the metadata display. See **Paragraph 5.6.2** for further explanation on the unavailability of MEL Ordering. If help is required for a specific order form, see the Identification Information in the metadata record (see example in **Figure 41**).

Generate Order Form

DTED0 - Digital Terrain Elevation Data Level 0 (DTED0) - N90,W180

Metadata Sections:

- [Identification Information](#)
- [Data Quality Information](#)
- [Spatial Data Organization Information](#)
- [Spatial Reference Information](#)
- [Entity and Attribute Information](#)
- [Distribution Information](#)
- [Metadata Reference Information](#)

Identification Information:

Citation:

Citation Information:

Originator: NIMA - National Imagery & Mapping Agency

Publication Date: 19961101

Title:

DTED0 - Digital Terrain Elevation Data Level 0 (DTED0) - N90,W180

Edition: Ed. 1 -

Geospatial Data Presentation Form: Model

Figure 41. Java Query Metadata Record

5.4.5.3 MEL Dataset Order Form

Some datasets allow multiple methods of access. Some Resource Sites have a unique ordering mechanism separate from the MEL, and their data may only be ordered through this alternative access point. If there are multiple points of access to the data, then when **Order** is selected in the **List Query Results** tab, a new dialog window will display a list of access links (see **Figure 42**). If the dataset can be ordered directly, the

entry will say “MEL Order”. Alternative accesses will appear as “Alternative Access:” followed by the URL. Highlight any URL shown and click **GO** to link directly to a Resource Site. Click **Cancel** to return to the Query Results list. Note that if the MEL Ordering is an option for the dataset but is not currently available from the Resource Site, it will not appear as an option in the list. See **Paragraph 5.6.2** for further explanation on the unavailability of the MEL Ordering.

The screenshot shows the Master Environmental Library (MEL) website interface. At the top, there is a navigation bar with the MEL logo on the left and a list of links: Home, Tutorial, Find, Site Map, Contact MEL, and Home Page. Below this is a secondary menu with links for About MEL, HTML Data Query, Java Data Query, and MEL Tools. The main content area is titled "Check Order" and contains a login form. The form has two input fields: "Email:" with the value "light@foster.com" and "Password:" with the value "1234567890". Below the fields is a "Submit" button. At the bottom of the form, there is a link: "If you have forgotten your password, please contact the MEL System Administrator at light@foster.com who will assign you a new password."

Figure 42. Java Query Access To Dataset

The *Dataset Order Form* (see **Figure 43**) is identical to that discussed in **Paragraph 5.3.5.3** for the HTML Query.

MEL Dataset Order Form for:

Navy Standard Surf Model (NSSM) from NAVOCEANO Wave Model (WAM) Spectra, Persian Gulf SHARK CLZ, December 1996

Order data from the selected dataset using the form below. First review the data. Each order form is customized for a specific dataset. There may be areas to enter or to select values that will further subset (customize) the data ordered. These areas have headers that are shown in red. If no choices are made in these areas, all selections shown will be returned.

COVERAGE OF DATASET (Latitude/Longitude in degrees):
 Create spatial subset by clicking two opposite corners.

The screenshot shows a web interface for selecting a spatial subset of a dataset. It features a map of the Persian Gulf region. The landmass is colored brown, and the sea is blue. A red border outlines the selected spatial subset. The form includes input fields for Northernmost (29), Southernmost (28.6), Westernmost (48), and Easternmost (48.6) coordinates, each with a dropdown menu for direction (N or E). There are 'Reset to full dataset' and 'Update Map' buttons at the bottom.

Figure 43. Java Query Dataset Order Form

The procedures for filling out the *Dataset Order Form*, creating and editing a User Profile, and receiving a data set order acknowledgment are the same as those discussed in **Paragraph 5.3.5.3** in the HTML Query section.

5.5 BROWSING MEL HOLDINGS

The MEL Browse interface is provided to display data holdings in the MEL by category. It can be used to locate data without doing queries. The MEL data holdings are organized hierarchically by category. The top page lists the categories, and the next level of pages (reached by clicking on hyperlinks) list subcategories. The final levels display the data sets for that subcategory available in the MEL.

To reach the top level browse pages, follow the link **Browse Data in MEL** in the home page or the **Browse Holdings** link that appears in the navigation menu in the bottom of most pages (see **Figure 44**) shows what the top level browse page might look like. The page is organized as a table of keyword categories and examples of the keywords are given for each category. These categories are based on the MEL Thesauri, and the keywords are MEL approved keywords that the metadata creators use. The category names are hyperlinks.

Master Environmental Library **Browse Holdings**

[About MEL](#) | [HTML Data Query](#) | [Java Data Query](#) | [MEL Tools](#) | [Help](#) | [Tutorial](#) | [Find](#) | [Site Map](#) | [Contact MEL](#) | [Home Page](#)

Click on a hyperlink in the table below to browse through MEL's holdings.

MEL Holdings	
<ul style="list-style-type: none"> • Areal Coverage Areal coverage descriptions, e.g. Local, Mesoscale, Regional • Countries Country names, e.g. Cyprus, Greece, Turkey • DoD Locations Department of Defense locations, e.g. 29 Palms, Fort Irwin, Ft. Drum • Environmental Domain Environmental domain names, e.g. Air, Ocean, Space • Originators Originators of the resource, e.g. CERC, NRL, NIMA • Products Product names, e.g. ADCIRC, NOGAPS, DTED0 	<ul style="list-style-type: none"> • Regions Region names, e.g. Asia, Middle East, Mediterranean Sea • Resource Types The type of this resource, e.g. Digital database, Image, Model • Scientific and Engineering Fields Scientific and engineering field or discipline, e.g. Atmosphere, Bathymetry, Meteorology • Temporal Coverage Temporal coverage description, e.g. Nowcast data, Historical data, Forecast data • US States US State names, e.g. California, Mississippi, New Hampshire

Figure 44. Browse Holdings

If a user follows one of the links that appear in the top level page, a new browse page will be displayed. **Figure 45** shows what the browse page might look like if a user were to follow the **Areal Coverage** link in the top level page. These pages will contain a table of keywords that are in that category. The numbers in brackets denote the number of data sets that satisfy a fielded query based on that keyword.

Master Environmental Library

Browse Holdings

Help
Tutorial
Find
Site Map
Contact MEL
Home Page

About MEL | HTML Data Query | Java Data Query | MEL Tools

MEL Holdings > Areal Coverage

Click on a hyperlink in the table below to browse through MEL's holdings. The links show keywords in a particular category. The numbers in paranthesis show how many datasets exist in the holdings for a particular keyword.

Areal Coverage Keywords

- Local (64)
- Regional (50)
- Mesoscale (5)
- Synoptic (44)

Home Page | About MEL | Browse Holdings | HTML Data Query | Java Data Query | MEL Tools

Figure 45. Browse Holdings (Continued)

When a user follows one of these links a new page will be displayed that will show the results of a query based on that keyword. This page is very similar to the *Results* pages obtained when an HTML query is requested (see **Paragraph 5.3.5.1 Query Results**). The only difference is that the query was executed at an earlier time and the result saved.

The *Browse* pages are generated periodically (currently configured for generation once a day) by performing actual keyword queries against the current holdings in the MEL. Since current holdings may change in between scheduled updates, the *Browse* pages are a snapshot of the holdings and do not reflect the holdings at the precise moment of browsing. Further, any restricted metadata in the Unclassified MEL are not used in the *Browse* pages.

5.6 MEL TOOLS

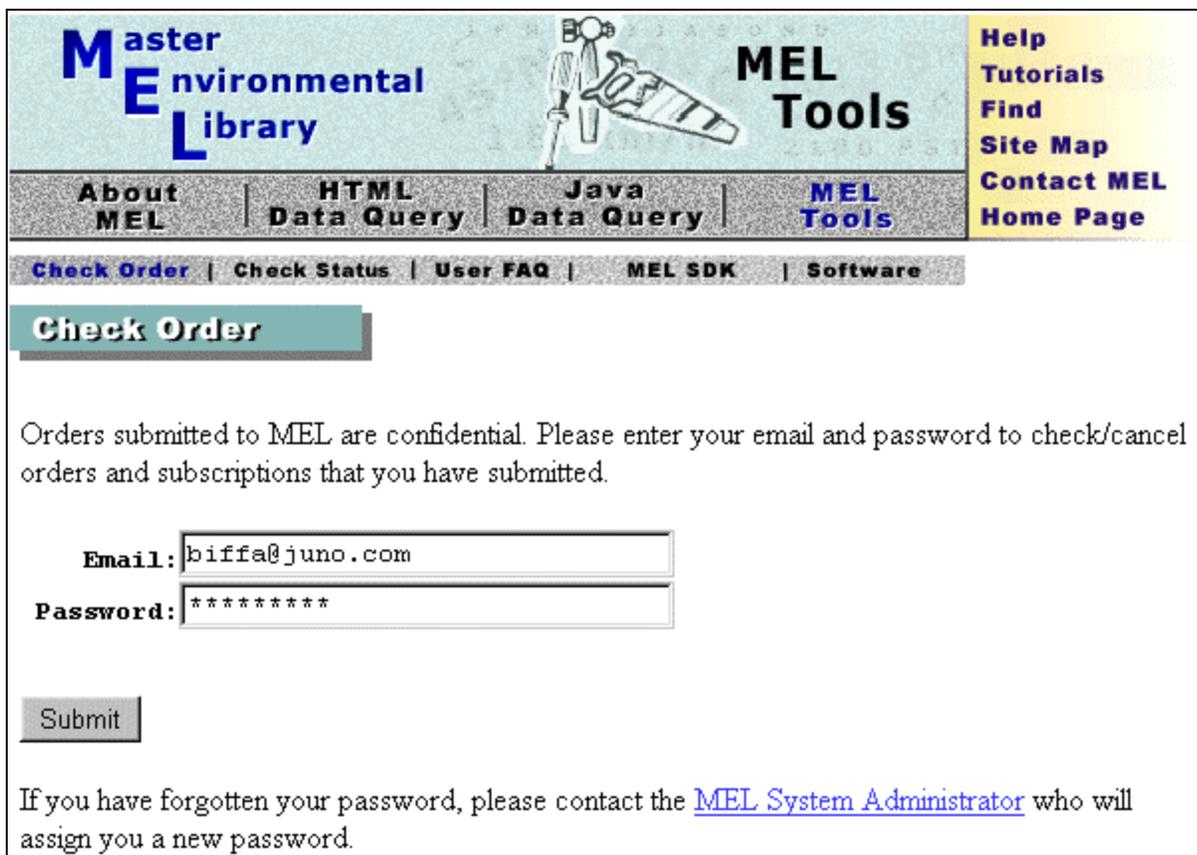
The MEL Tools page provides access to tools that support the use of the MEL. Links are provided to let the user check the order or subscription status of an existing order, review a list for answers to frequently asked MEL questions, obtain a toolkit to access certain MEL services, download software related to the MEL, or link to other sites providing useful software.

5.6.1 CHECK ORDER

Check Order is used to check on existing orders and subscriptions. Because of the short duration a MEL order is active, few non-subscription orders exist in the system at any one time. The **Check Order** function may also be used to cancel existing orders and suspend, resume or cancel subscriptions.

Click **Check Order** at the upper left of the screen.

The **Check Order** function (see **Figure 46**) is password-restricted. Access requires entering a valid email address and MEL password. This procedure ensures only the valid owner may check or cancel a MEL order. *NOTE:* If the MEL password has been forgotten, a link is available to send an email message to the *MEL System Administrator* requesting a new password.



Master Environmental Library **MEL Tools**

Help
Tutorials
Find
Site Map
Contact MEL
Home Page

About MEL | HTML Data Query | Java Data Query | MEL Tools

Check Order | Check Status | User FAQ | MEL SDK | Software

Check Order

Orders submitted to MEL are confidential. Please enter your email and password to check/cancel orders and subscriptions that you have submitted.

Email:

Password:

Submit

If you have forgotten your password, please contact the [MEL System Administrator](#) who will assign you a new password.

Figure 46. Check Order Entry Form

After entering a valid email address and MEL password, click **Submit** to access the **Check Order/Subscription Status** page (see **Figure 47**).

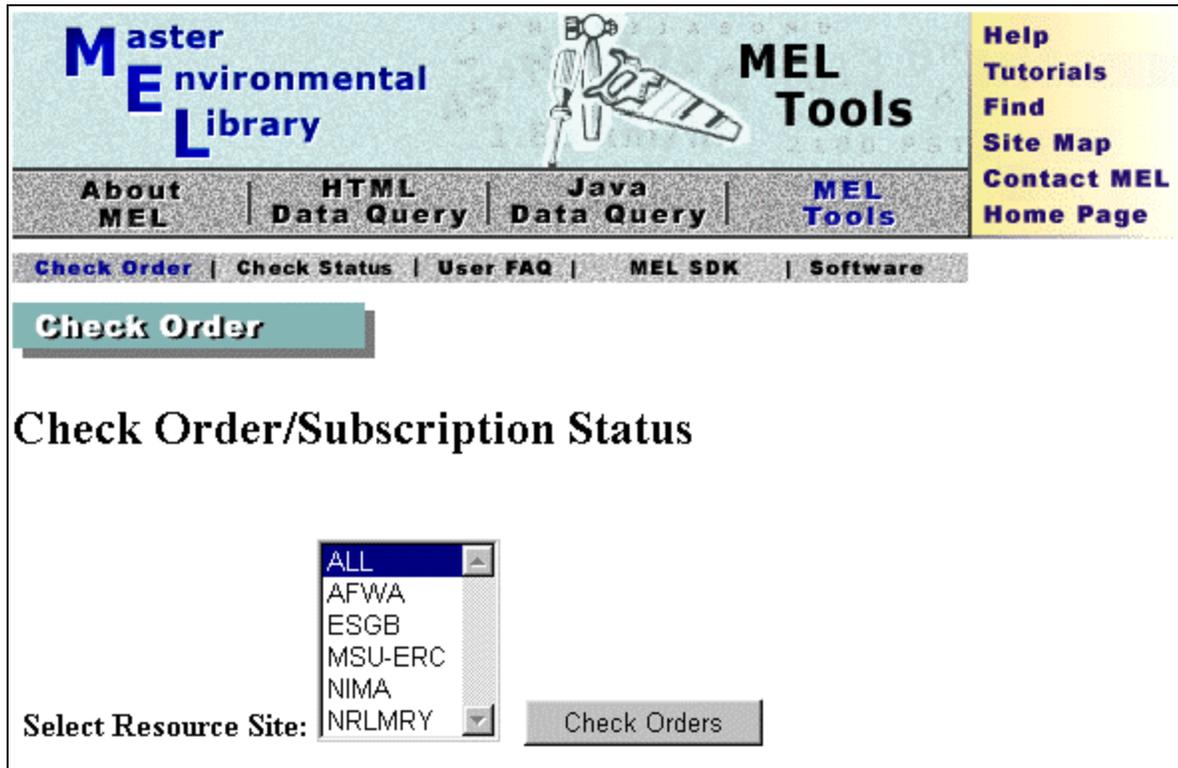


Figure 47. Check Order/Subscription Status

The **Check Order/Subscription Status** page permits selection of the Resource Site(s) of interest, or can be left at the default setting of **ALL**. The **ALL** setting will query the status of all orders pending or continuing for that email address. After selecting the desired Resource Site(s), click **Check Orders**.

For each site selected, a table will display the current orders and subscriptions for the given site (see **Figure 48**). The table columns are titled **Type**, **Order ID**, **Dataset Name**, **Status** and **Action to Take**. The *Type* column shows whether the order is a one-time order or a subscription. The *Order ID* is the request-id assigned to the order by the resource site for tracking purposes. The Dataset Name is the name of the data set ordered and the *Status* column shows the status of the order or subscription. The *Action to Take* column shows a “Cancel” checkbox for orders and a choice between two radio buttons for subscriptions. One of the radio button choices is “Cancel” and the other is “Resume” for a suspended subscription or “Suspend” for an active subscription. Note that the *Action to Take* column will not be present if the MEL Ordering status is not currently available and a message to that effect will appear next to the resource site name in the table header. See **Paragraph 5.6.2** for further explanation on the unavailability of the MEL Ordering.

[Check Order](#) | [Check Status](#) | [User FAQ](#) | [MEL SDK](#) | [Software](#)

Check Order

Orders and Subscriptions for: Naim Alper

Status: Pending orders and subscriptions.
*To cancel orders from a resource site, or to cancel, suspend or resume subscriptions, check the boxes or radio buttons next to them and then click the **Act on Selected Order(s)** button for that resource site.*

NRLMRY				
Type	Order ID	Dataset Name	Status	Action to Take
Subscription	nrlm-168-s	LATEST_GOES_10_CENTCAL/vis/jpg	SUSPENDED	<input type="radio"/> Cancel <input type="radio"/> Resume
Subscription	nrlm-180-s	LATEST_GOES_10_CENTCAL/vis/jpg	ACTIVE	<input type="radio"/> Cancel <input type="radio"/> Suspend
Order	nrlm-83026-o	WAM_KOREA-korea_nest2_app12	AWAITING_EXTRACTION	<input type="checkbox"/> Cancel

Status: No orders or subscriptions were found from the following sites.

Resource Site
NIMA

Figure 48. Order and Subscription Tables

If there are sites where there are no orders or subscriptions pending, they will appear in a separate table. If for any reason, a site cannot be reached to find out about the status of orders, they will appear in a separate table also.

To cancel orders or subscriptions from a site, check the checkboxes for the orders and select the appropriate radio button for subscriptions. Then click **Act on Selected Order(s)** button appearing below the table of orders for that site. A page will acknowledge which cancellations were successful and which were not (see **Figure 49**).

Master Environmental Library **MEL Tools**

[About MEL](#) | [HTML Data Query](#) | [Java Data Query](#) | [MEL Tools](#)

[Check Order](#) | [Check Status](#) | [User FAQ](#) | [MEL SDK](#) | [Software](#)

[Help](#)
[Tutorials](#)
[Find](#)
[Site Map](#)
[Contact MEL](#)
[Home Page](#)

Check Order

Here are the results of your request(s).

Result: The following orders and subscriptions were acted upon successfully

Order ID	Action Taken
nrlm-83027-o	Cancelled
nrlm-180-s	Suspended

Figure 49. Cancellation Results.

5.6.2 CHECK ACCESS STATUS

The MEL provides access to data by the following two methods: *MEL Order* and *Alternative Access*.

Resource Sites (Data Sources) may choose to allow their data to be ordered using one or both of these options. While the *MEL Order* allows access to data through the MEL, *Alternative Access* provides a means to access data outside the MEL in a Data Source specific way. The MEL Ordering may be unavailable at any point in time when it is not functioning properly or if the Resource Site intentionally has turned it off. The **Check Status** link on the MEL Tools page presents a page with a table showing the status of the MEL Ordering from the Data Sources and any messages that have been posted by them (see **Figure 50**).

Data Sources (Resource Sites) Status

The following table lists the Data Sources and displays any messages that have been posted by them. It also displays the MEL Order Status which indicates whether MEL Ordering is currently available as explained [below](#).

Data Source	MEL Order Status	Message
AFCCC	Not Applicable	
AFWA	Available	
ESGB	Available	
MSU-ERC	Unavailable	
NAVOCEANO	Available	OTIS datasets to be added 10/1.
NGDC	Not Applicable	
NIMA	Available	
NRLMRY	Available	NEW GFDN-E datasets now available!
SDBF	Not Applicable	SDBF will be down 9/12 for hardware upgrade.

Figure 50. MEL Ordering status and messages from Resource Sites

The *MEL Order Status* column indicates whether a Resource Site's (Data Source's) *MEL Order* machine handling system is operational and whether the required software is functioning properly. The possible values in this column and their meaning are as follows:

Available: MEL Ordering is available and functioning properly.

Unavailable: MEL Ordering is currently not functioning properly.

Disabled: MEL Ordering has been intentionally turned off.

Not Applicable: *MEL Order* type of Ordering is not available.

5.6.3 MEL User FAQ

For a list of the most Frequently Asked Questions (FAQ) and answers about the MEL, click **User FAQ** (see **Figure 51**). Examples of FAQs include: *Who can use the MEL?*, *How do I get technical support?*, and *How do I identify data sets?*

The screenshot shows the Master Environmental Library (MEL) website interface. At the top left is the logo 'Master Environmental Library' in blue. To its right is an illustration of a person holding a tool, with the text 'MEL Tools' next to it. Below the logo and illustration is a navigation bar with several links: 'About MEL', 'HTML Data Query', 'Java Data Query', and 'MEL Tools'. To the right of this bar is a yellow sidebar with links: 'Help', 'Tutorials', 'Find', 'Site Map', 'Contact MEL', and 'Home Page'. Below the navigation bar is a horizontal menu with links: 'Check Order', 'Check Status', 'User FAQ', 'MEL SDK', and 'Software'. The main content area has a heading 'MEL User FAQ' in a teal box, followed by three numbered links: 'I. [General Information about the Master Environmental Library](#)', 'II. [How to Start with MEL](#)', and 'III. [Using MEL](#)'.

Figure 51. MEL User FAQ

5.6.4 MEL Software Development Kit

As depicted in **Figure 52**, the MEL provides a *Software Development Kit* (SDK), so applications can make use of the MEL Services outside of HTTP. The *MEL SDK* page provides a summary of the MEL Services Architecture and links to the MEL SDK documentation and package. Users can download the package to use for writing applications.

Master
Environmental
Library

MEL Tools

About MEL | HTML Data Query | Java Data Query | MEL Tools

Check Order | Check Status | User FAQ | MEL SDK | Software

MEL SDK

The MEL SDK is a component of the MEL Services Architecture (MSA). Although MEL WEB access provides interactive functionality, user applications need a more direct representation of results or the user may prefer an entirely different user interface.

The MEL Services Architecture (MSA) is created in order to expose the MEL functionality in a form that allows other applications to directly access the full MEL interface as an alternative to the MEL WEB access.

Figure 52. MEL SDK

5.6.5 Software

The *Software* page (see **Figure 53**) of the MEL Tools section contains internal and external links to Web pages that contain software and applications utilities that may be useful for obtaining, displaying, and analyzing data obtained from the MEL.

Master
Environmental
Library

MEL Tools

About MEL | HTML Data Query | Java Data Query | MEL Tools

Check Order | Check Status | User FAQ | MEL SDK | Software

Software

- [Encoders/Decoders](#)
- [Mapping Software](#)
- [Metadata](#)
- [Visualization Tools](#)

Figure 53. MEL Software

The following paragraphs list available software, applications, and information pages.

5.6.5.1 Encoders/Decoders

The MEL datasets are delivered in standard transfer formats, including: GRIB, BUFR, Digital Terrain Elevation Data (DTED), or Vector Product Format (VPF) formats. Users will need the appropriate decoder software to read the data. The following are provided as links in the Encoders/Decoders section:

- What is GRIB data?
- NCAR's⁶ GRIB FTP site for documentation
- GRIB, the WMO standard for gridded data
- MEL GRIB encoder/decoders
- What is BUFR data?
- BUFR, WMO standard for point data
- MEL BUFR encoder/decoders

5.6.5.2 Mapping Software

The link to the Mapping, Charting, and Geodesy (MC&G) Utility Software Environment (MUSE) provides a suite of useful software applications for handling the MEL data.

- MC&G Utility Software Environment (MUSE)

5.6.5.3 Metadata

The MEL metadata records conform to the FGDC CSDGM. The following links provide additional information.

- Introduction to the MEL Metadata
- Detailed Information on Metadata

5.6.5.4 Visualization Tools

The following links access visualization applications for viewing the MEL data:

- Test WWW Viewers
- Vis5D -- System for interactive visualization
- Grid Analysis and Display System (GrADS)
- Interactive Data Language (IDL)
- PV-WAVE
- FERRET -- Data visualization and analysis program
- Scientific Visualization and Animation (SciAn)

⁶ NCAR - National Center for Atmospheric Research

5.7 ABOUT MEL

The *About MEL* page (see **Figure 54**) provides a brief description of the MEL with links to additional information on the structure and development of the MEL.

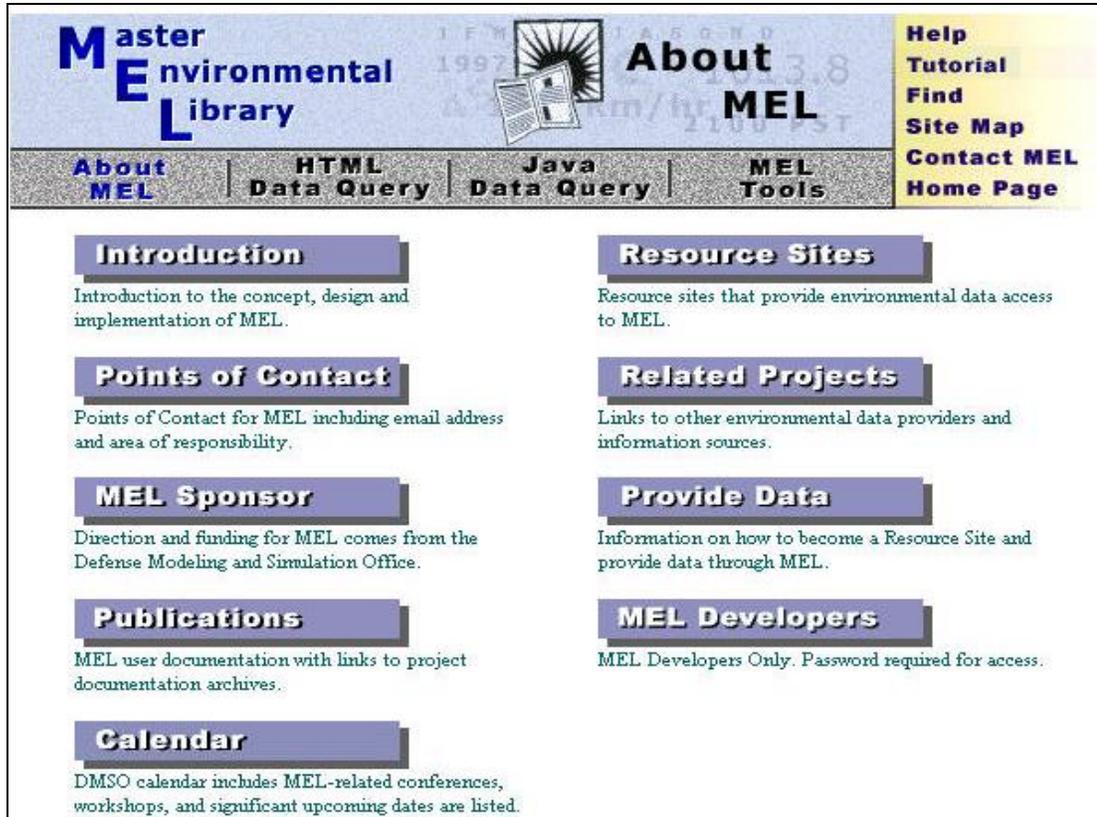


Figure 54. About MEL

5.7.1 Introduction

Click **Introduction** for information concerning the concept, design, and implementation of the MEL.

5.7.2 Points Of Contact

Clicking **Points of Contact** provides a representative example of the points of contact for the MEL (see **Table 3**). These include program and project management, and other personnel.

Program Management Points of Contact		
COL Crain, USA	Director, DMSO	<i>fcrain@dmsomil</i>
Mr. Perez	INE Program Manager	<i>jperez@dmsomil</i>
Mr. Hughes	Assistant INE Program Manager	<i>jhughes@dmsomil</i>
Mr. Weitzner	Ocean MSEA Representative	<i>Weitzner.Edward@hq.navy.mil</i>
Mr. Elio	Air and Space MSEA Representative	<i>Thomas.Elio@afccc.af.mil</i>
Mr. Magee	Terrain MSEA Representative	<i>mageer@nima.mil</i>

Project Team Leads		
Mr. Hughes, Contractor	Environmental Common Services Technology Area Lead (ECS TAL)	<i>jhughes@dmsomil</i>
Dr. Siquig	Project Lead	<i>siquig@nrlmry.navy.mil</i>
Dr. Newman, Contractor	Associate Project Lead & Outreach	<i>fred.newman@jhuapl.edu</i>
Dr. Hembree	Technical Lead Resource Interfaces	<i>hembree@nrlmry.navy.mil</i>
Mr. Huff, Contractor	Documentation Configuration Management	<i>marinc@pacbell.com</i>
Ms. Curtis, Contractor	Testing	<i>curtis@nrlmry.navy.mil</i>

Project Personnel		
Dr. Alper, Contractor	Java Interface HTML Interface	<i>alper@nrlmry.navy.mil</i>
Mr. Foster, Contractor	MEL Resource Site Software	<i>foster@erc.msstate.edu</i>
Ms. Curtis, Contractor	Webmaster Administrative Tools	<i>curtis@nrlmry.navy.mil</i>
Dr. Hembree	Metadata Development MEL SEDRIS Coordinator BUFR Data Encoding/Decoding	<i>hembree@nrlmry.navy.mil</i>
Mr. Fritts, Contractor	Classified MEL	<i>Rfritts@msiac.dmsomil</i>
Mr. Kunitani, Contractor	MEL Services Architecture	<i>kunitani@nrlmry.navy.mil</i>
Mr. Lowe, Contractor	GRIB Data Encoding/Decoding	<i>steven.j.lowe@cpmx.saic.com</i>
Dr. White, Contractor	MEL WWW Interface JavaScript Development	<i>white@nrlmry.navy.mil</i>

Table 3. MEL Points of Contact

5.7.3 MEL Sponsor

The *MEL Sponsor* page (see **Figure 55**) provides information about the MEL project Sponsor and the MSEAs.

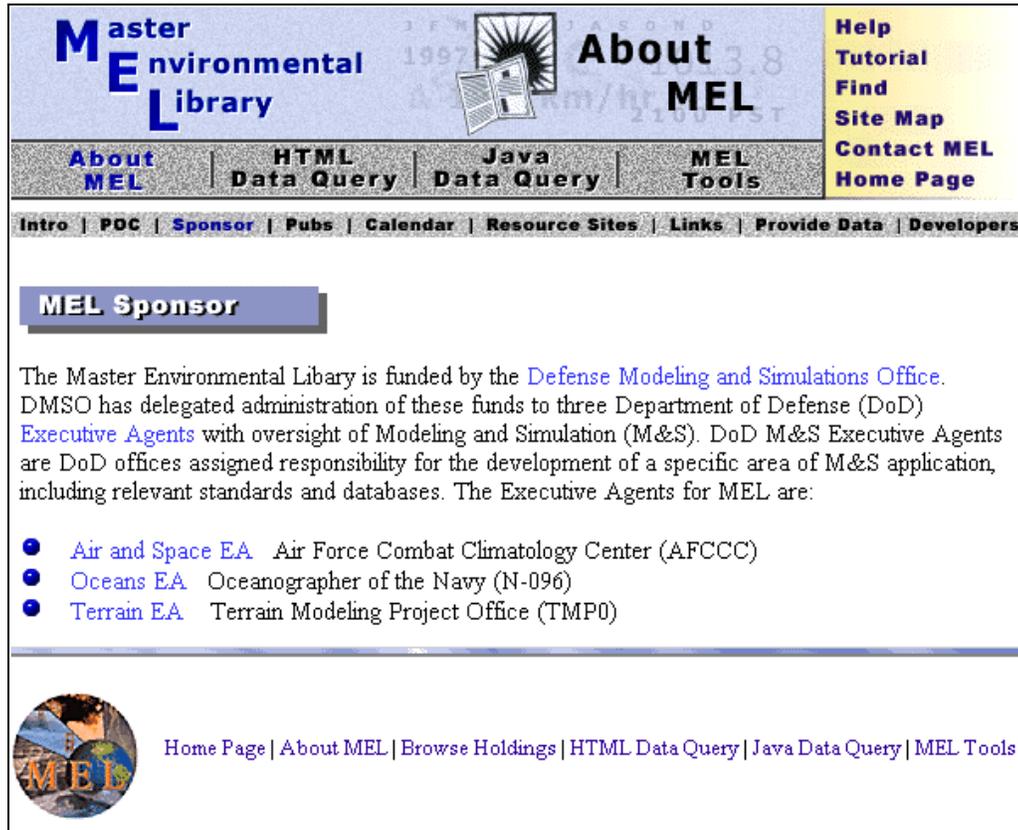
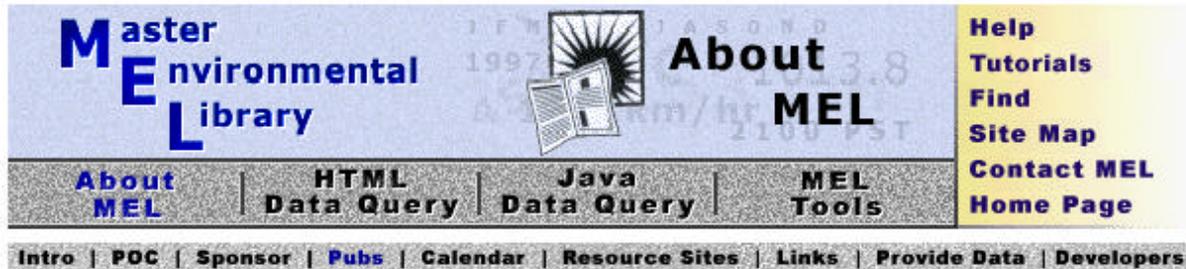


Figure 55. MEL Sponsor

5.7.4 Publications

The *MEL Publications* page (Figure 56 is a representative example) contains links to other MEL documentation.



Publications

The following MEL publications are provided in PDF or HTML format. (To view PDF documents, the freeware [Adobe Acrobat Reader](#) must be installed.)

User Publications

HTML Format	PDF Format	Document Title
●		MEL Users FAQ
	●	MEL Technical Reference Guide
	●	Software User Manual
	●	User Manual for Binary Universal Format (BUFR) Software
	●	User Manual for the GRIB Software
	●	MEL Metadata Guide
	●	Operational Concept Description (OCD)

- [List of Other MEL Publications](#)
- [Publications Associated With MEL](#)

Figure 56. MEL Publications Page

The free Adobe Acrobat Reader software must be installed on the local computer to read the Portable Document Format (PDF) files. The Reader software is available for downloading at <http://www.adobe.com>. A link is provided to Other MEL documents.

5.7.5 Calendar

The *Calendar* page (Figure 57 is a representative example) lists upcoming MEL meetings, and other meetings of importance to the MEL project.

msiac
MODELING AND SIMULATION
INFORMATION ANALYSIS CENTER

M&S Calendar

Search Propose Event Help

Day View Week View Month View

Today is:
Wednesday, 9 August, 2000

What to Look for This Week

M&S News	27 Apr 00	TENTATIVE DATES: Exercise Intrinsic Action 00-2
M&S Journal	08 Aug 00	Flight Simulator Metrics Task Group Meeting (FSEMC)
M&S Links	08 Aug 00	Modeling and Simulation Resource Repository Board of Directors Meeting (MSRR BoD)
MSRR	08 Aug 00	Acquisition Functional Working Group Meeting (Acq FWG)
DMSO	08 Aug 00	Integration Task Force Meeting (ITF)
DTIC	09 Aug 00	Architecture Management Group Meeting (AMG 38)
	10 Aug 00	Training Functional Working Group Meeting (TFWG)
	11 Aug 00	Defense Science and Technology Seminar (DSTS)

Contact the calendar registrar at: calendar@msiac.dmsso.mil

M&S Calendar 1.0
Defense Modeling & Simulation Office (DMSO)
Modeling & Simulation Information Analysis Center (MSIAC)

09 Aug 00
18:11 US/ET

Figure 57. MEL Calendar Page

5.7.6 Resource Sites

The *Resource Sites* page (Figure 58 is a representative example) displays a map of the continental United States with labeled dots representing current (yellow dots) and candidate (pink dots) Resource Sites. Clicking a dot on the map will activate a link to that site's Web page for more information.

Resource Sites

A MEL Resource Sites is a data repository available to MEL. Resource Sites provide summaries of their data in the form of metadata records, capable of being searched by MEL. When a MEL user places an order for data, it is the Resource Sites that fills the order and delivers the requested data. Below is an interactive map showing the Resource Sites in MEL with links to their respective home pages. A [description](#) of Resource Sites and their holdings is also available.

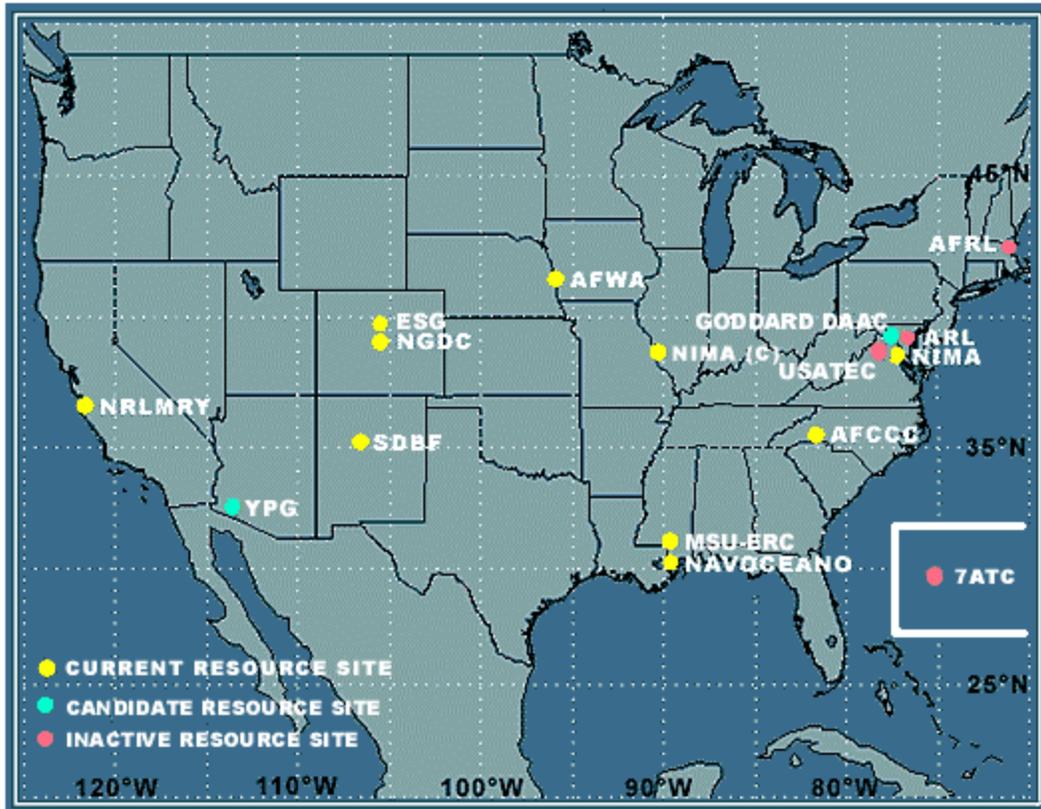
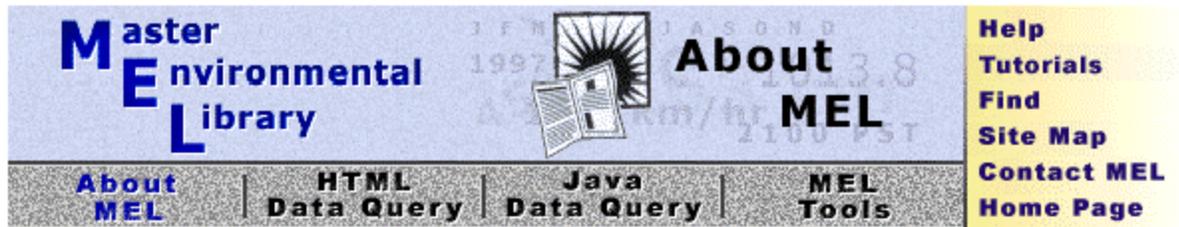


Figure 58. MEL Resource Sites Page

The link labeled *Description* brings up a new page that displays the descriptions of active Resource Sites (**Figure 59** is a representative example). Each institution's mission is described along with the kinds of data they provide through the MEL. This is useful to get a quick summary of resource site holdings to determine whether they should be included in a Query or not.



Descriptions of Resource Sites (Data Sources)



AFCCC -- Air Force Combat Climatology Center

The mission of AFCCC is one of military applied climatology. We collect, maintain, and apply worldwide weather data, creating climatological products to strengthen the combat capability of America's warfighters. Through MEL, we provide aircraft observations, HIRAS analysis data, RTNEPH, snow analysis, summary weather station data, SSMT2 satellite moisture soundings, surface and upper air weather, VTPR data etc.

POC Name: Capt David McDaniel

POC E-mail: David.McDaniel@afccc.af.mil



AFWA -- Air Force Weather Agency

Air Force Weather Agency provides weather data for the Air Force. Through MEL, we provide subsets of current atmospheric aircraft, satellite, surface, upper-air observations and some forecast data.

Figure 59. Resource Site Descriptions

5.7.7 Links

Click **Links** to access other environmental data providers and information sources (see **Figure 60**).

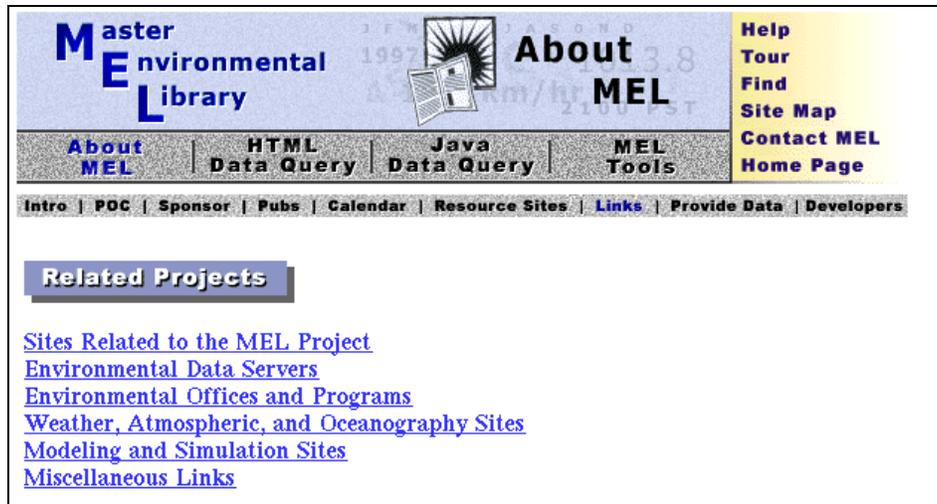


Figure 60. MEL Links Page

5.7.8 Provide Data

Activities become MEL Resource Sites to increase the visibility and accessibility of the information they provide, and to take advantage of the MEL ordering and delivery capabilities. Resource Sites are also recognized as authoritative providers of information for the air and space, ocean, and terrain domains of the natural environment.

Click **Provide Data** for detailed information on how to become a MEL Resource Site and provide data through the MEL.

5.7.9 MEL Developers

The *Developer's Corner* page is a restricted access area for individual who participate in the development and maintenance of the MEL. Access permission may be requested by email to the MEL Help Desk at:

`mel_help@msiac.dmsomil`

5.8 SECONDARY LINKS

Secondary links on the *MEL Home* page provide additional administrative information about MEL oversight, sponsor, usage, and Points of Contact.

5.8.1 Disclaimer Page

The MEL is a DoD automated information system. The *Disclaimer* page describes the security and monitoring agreements to which the MEL user consents.

5.8.2 DMSO Home Page

The *DMSO Home* page provides a more detailed description of the MEL sponsoring organization and provides links to additional DMSO resources.

APPENDIX A. TUTORIAL

A.1 HTML DATA QUERY

1. Log on to the WWW and open the URL for the MEL Access Site:

http://mel.dmsol.mil

2. Select **HTML Data Query**.
3. Click on the center point of the map shown in *Set Region*. For example, click on the map in the center of San Francisco Bay. The map will change and show a higher degree of resolution for this area. Click several more times, and see how the map changes.
4. Find the *Set Date Range* window. Click the button that begins **Get data from**. Use the pull-down menus to select the months to start and end a search. Enter the day and year to complete the time specification.
5. Move down to the *Set Keywords – Full Text Query* window. Enter the word "wind" in the text entry box.
6. Go to the *Set Data Sources* window. Leave the default value at ALL, or turn it off and select one or more specific data sources. The highlighted items will be used in the search. (Note: a second click will toggle off a previously highlighted data source.)
7. Click **Begin Data Query**.
8. The submitted Query will return a list of records (also known as datasets) that contain information matching the request. Select a record of interest and click the associated **MEL Order** link.
9. An Order Form is provided. Depending on the data set selected, the data identified by the given data set can be sub-set further. Make selections based on the choices shown for the Order Form.
10. Enter your email address in the field provided near the bottom of the order form. If this is your first time ordering from the MEL click **Create New User Profile**; otherwise click **Edit User Profile** to change the Profile already defined. If your User Profile does not need to be changed, proceed directly to Step 13.
11. In the *Create User Profile* page, the email address already entered will appear near the top of the page. Make up a password and enter it into both of the text fields provided. Click **Create User Profile**.

12. The *Edit User Profile* page appears. Near the top of the page is a set of text fields. Enter the required information (field names shown in red), and enter optional information into the other fields if desired. Near the bottom of the page is the *Data Delivery Information*. Set the delivery method to *Anonymous FTP delivery* or *Anonymous FTP pickup*. If the delivery method specified is *Anonymous FTP delivery*, enter an anonymous FTP URL of the form: `ftp://your_anonymous_ftp_domain/path_to_delivery_directory`. Set *Confirmation* to **EMAIL** or **NONE**. When the desired information has been entered into all of the required fields, click **Save User Profile**.
13. Click **Submit Order**.
14. You will receive a *MEL Data Request Acknowledgement* on your Web Browser and the data will be delivered to the location in the manner requested. Click **See text of order** to review the Order in detail.
15. Use the *HTML Query* link to return to the *MEL Query* page and the MEL icon at the bottom of the page to return to the *MEL Home* page.

A.2 Java DATA QUERY

1. Log on to the WWW and open the URL for the MEL Access Site:

`http://mel.dmsso.mil`
2. Select **Java Data Query**.
3. Leave the top tab as **Define Query** and move the mouse cursor to the northwest of a region of interest (Example: Move the cursor to the northwest of the San Francisco Bay Area.)
4. Press and hold the mouse button and drag it to the southeast to any desired area. (Example: Holding the mouse select button, drag the cursor to the southeast of the San Francisco Bay area.) Note that the coordinates on the page change to match the newly marked area.
5. Select the tab **Set Date Range**. Click the button **Get the last 7 days data**.
6. Select the tab **Set Keywords** and enter the words, "satellite image" into the large text box near the top of the window.
7. Set the tab **Set Data Sources** and click **Deselect all**. Click the **NRLMRY** site.
8. Click **Begin Data Query** near the lower left corner of the window.
9. The *List Query Results* tab will be shown, and in the window a listing appears of all metadata records at the NRLMRY site that contain information matching your request. Select the data set that is most suitable for your needs, and inspect the associated metadata record. (Example: Find the record **GOES_10 - Hawaiian Islands**) and click **Description**.
10. A new Web browser is spawned which shows a listing of the metadata for the selected dataset shown. Review the metadata and click **Generate Order Form**.

11. Review the order form shown and make selections as desired (the choices available are dependent on the specific data set selected.) Enter your email address in the box provided near the bottom of the order form. If this is your first time ordering from the MEL click **Create New User Profile**, otherwise click **Edit User Profile** to change the profile already defined. If your User Profile does not need to be changed, proceed directly to Step 14.
12. In the *Create User Profile* page, the email address already entered will appear near the top of the page. Make up a password and enter it into both of the text fields provided. Click **Create User Profile**.
13. The *Edit User Profile* page appears. Near the top of the page is a set of text fields. Enter the required information (field names shown in red), and enter optional information into the other fields if you desire. Near the bottom of the page is the *Data Delivery Information*. Set delivery method to *Anonymous FTP delivery* or *Anonymous FTP pickup*. If the delivery method specified is *Anonymous FTP delivery*, enter an anonymous FTP URL of the form:
`ftp://<your_anonymous_ftp_domain>/<path_to_delivery_directory>.`
Set confirmation to **EMAIL** or **NONE**. When the desired information has been entered into all required fields, click **Save User Profile**.
14. Change or accept defaults in the *Confirm Delivery Choices* page by clicking **OK**.
15. Click **Submit Order**.
16. You will receive a *MEL Data Request Acknowledgement* on your Web Browser and the data will be delivered to the location and in the manner requested. You may review the Order in detail by using the *See text of order* button (Example: Click **See text of order**.)
17. Use the Java Data Query link to return to the *MEL Java Data Query* page and the MEL icon at the bottom of the page to return to the *MEL Home* page.

A.3 HTML QUERY RESULTS

1. Perform a query by following the first 7 steps in A.1
2. If more than one data source has been selected and there are records that satisfy the Query from more than one data source, the results will appear grouped by data source.
3. Obtain a description of the data source by clicking on the **Description** link in the data source banner. This action will display a page describing the data source, their mission, and the kind of data they provide through the MEL
4. Go to the data source's home page by clicking on the **Homepage** link in the data source banner. This takes you outside the MEL to the data source itself.
5. Get a description of one of the data sets that satisfied the Query by clicking on the **Data Description** link that appears below the data set title.

6. If the data set is orderable through the MEL, you can follow the *MEL Order* link to order the data set as described in A-1.
7. If an *Alternative Access* link appears you can follow it to see how you can order this data set directly from the data source. This will take you outside of the MEL.
8. If there are icons below these links appearing next to a label called *Browse Graphics*, you can click on them to view graphics associated with the data set.
9. If there are more records that satisfy the Query than those displayed from a particular data source, you can look at more results by clicking the **Next** link or a particular page link in the navigation bar appearing at the end of the results from the data source.
10. To visualize the bounding areas of all the results, select the **All** radio button and click the **Visualize Bounding Areas** button at the top.
11. To visualize the bounding coordinates of only certain data sets, select the **Some** radio button and click the checkboxes appearing next to the data sets you wish to visualize.
12. To visualize the date ranges of the data sets do the same as in 10 or 11 above but click the **Visualize Date Ranges** button.

APPENDIX B. ACRONYMS/ABBREVIATIONS

7ATC.....Seventh Army Training Command

A

Acq.....Acquisition

ADCIRC.....Advanced Circulation Model

af.....Air Force

AFCCC.....Air Force Combat Climatology Center

AFRL.....Air Force Research Laboratory

AFWA.....Air Force Weather Agency

AMG.....Architecture Management Group

API.....Application Program Interface

ARL.....Army Research Laboratory

B

BoD.....Board of Directors

BUFR.....Binary Universal Form for the Representation of meteorological data

C

C.....Confidential

CAST.....Center for Air Sea Technology

CD-ROM.....Compact Disk-Read Only Memory

CERC.....Contemporary Europe Research Centre

CGI.....Common Gateway Interface

CLZ.....Craft Landing Zone

COAMPS.....Coupled Ocean Atmosphere Mesoscale Prediction System

CORBA.....Common Object Request Broker Architecture
COTSCommercial-Off-The-Shelf
CSC-STD.....Computer System Evaluation Criteria
CSCI.....Computer Software Configuration Item
CSDGM.....Content Standard for Digital Geospatial Metadata

D

DAAC.....Data Active Archive Center
DMSODefense Modeling and Simulation Office
DMSPDefense Meteorological Satellite Program
DoD.....Department of Defense
DOS.....Disk Operating System
DSTSDefense Science and Technology Seminar
DTED.....Digital Terrain Elevation Data
DTIC.....Defense Technical Information Center

E

EA.....Executive Agent
ECSEnvironmental Common Services
ED.....Edition
EIAElectronic Industries Association
E-mail/email.....Electronic mail
ESG.....Environmental Scenario Generator
ESGB.....Environmental Scenario Generator Boulder
EST.....Eastern Standard Time
ETEastern Time

F

FAQ.....Frequently Asked Questions

FERRET.....interactive computer visualization and analysis environment
FGDCFederal Geographic Data Committee
FOUO.....For Official Use Only
FSEMC.....Flight Simulator Task Group
FTPFile Transfer Protocol
FWG.....Functional Working Group

G

GIE.....Get One of Everything
GIFGraphics Interchange Format
GMT.....Greenwich Mean Time
GNATS.....GNU (UNIX like operating system) error tracking system
GOESGeostationary Operational Environmental Satellite
GrADS.....Grid Analysis and Display System
GRIB.....Gridded Binary
GUI.....Graphical User Interface

H

HDF.....Hierarchical Data Format
HIRASHigh Resolution Analysis
HTML.....Hypertext Markup Language
HTTPHypertext Transfer Protocol

I

ICMP.....Internet Control Message Protocol
ID.....Identification
IDLInteractive Data Language (commercial application)
IEEE.....Institute of Electrical and Electronic Engineers
INE.....Integrated Natural Environment

INE ARP.....Integrated Natural Environment Authoritative Representation Process
IR.....Intermediate Release
ISO/IEC.....International Organization for Standardization/International
Electrotechnical Commission
ITF.....Integration Task Force

J

jhuapl.....Johns Hopkins University Applied Physics Laboratory
JPEG.....Joint Photographic Experts Group image format
JREJava Runtime Environment
JSP.....Java Server Pages
JTS.....Joint Tactical Simulation

K-L-M

LAN.....Local Area Network
M&SModeling and Simulation

MASS.....MEL Access Site Software
MC&G.....Mapping, Charting, and Geodesy
MCSST.....Multi Channel Sea Surface Temperature
MEL.....Master Environmental Library
MIL-STD.....Military Standard
MODASModular Ocean Data Assimilation System
MPEG.....Motion Pictures Experts Group image format
MRSSMEL Resource Site Software
MSASMEL Services Architecture Software
MSEA.....Modeling and Simulation Executive Agent
MSIACModeling and Simulation Information Analysis Center
MSMPModeling and Simulation Master Plan
MSOSA.....Modeling and Simulation Operational Support Activity

MSRR.....Modeling and Simulation Resource Repository
MSU-ERCMississippi State University, Engineering Research Center
MSWGModeling and Simulation Working Group
MTSSMEL Test and Support Software
MUSE.....Mapping, Charting, and Geodesy Utility Software Environment

N

N-096Oceanographer of the Navy
NAVOCEANONaval Oceanographic Office
NCAR.....National Center for Atmospheric Research
NCSA.....National Center for Supercomputing Applications
NFNot releasable to foreign nationals
NGDCNational Geophysical Data Center
NIMANational Imagery and Mapping Agency
NIPRNETNon-secure Internet Protocol Router Network
NOAA.....National Oceanic and Atmospheric Administration
NOGAPS.....Navy Operational Global Atmospheric Prediction System
NRL.....Naval Research Laboratory
NRLMRYNaval Research Laboratory, Monterey, CA
NSDINational Spatial Data Infrastructure
NSSM.....Navy Standard Surf Model

O

OC.....Originator Controlled
OTIS.....Optimum Thermal Interpolation System

P

PC.....Personal Computer
PDFPortable Document Format

PDSSPublic Domain and Support Software
PMELPacific Marine Environmental Lab
POC.....Point of Contact
PR.....Problem Report
PR.....Proprietary – caution, proprietary information involved
PSPECPerformance Specification
PV-WAVE.....visual data analysis tools for data manipulation
PWC.....Princeton West Coast (model)

Q-R

ROI.....Region Of Interest
RSRisk Sensitive
rsd.....Remote Sensing Division
RSTN.....Radio Solar Telescope Network
RTNEPH.....Real Time Nephanalysis

S

SSecret
SciAnScientific Visualization and Animation
SCOM.....Software Center Operators Manual
SDD.....Software Design Description
SDBFSimulator DataBase Facility
SDK.....Software Development Kit
SEDRISSynthetic Environment Data Representation and Interchange
Specification
SGISilicon Graphics, Incorporated
SILS.....Sea Ice Land System
SIPRNET.....Secure Internet Protocol Router Network
SMTPSimple Mail Transfer Protocol
SRoI.....Spatial Region of Interest

SSM/T2Special Sensor Microwave/ Temperature
STTSoftware Test Team
SUMSoftware User Manual
SVDSoftware Version Description

T

TAFSTerminal Aerodrome Forecasts
TALTechnology Area Lead
TCP/IPTransmission Control Protocol/Internet Protocol
TEMPTest and Evaluation Master Plan
TFWGTraining Functional Working Group
TMPOTerrain Modeling Project Office

U

UUnclassified
UMLUniversal Modeling Language
URLUniform Resource Locator
USAFUnited States Air Force
U.S./USUnited States
USATECU.S. Army Topographic Engineering Center
USD(AT&L)Under Secretary of Defense Acquisition for Technology and Logistics

V

VIS5DVisualization system for gridded data sets in 5 dimensions
VPFVector Product Format
VRMLVirtual Reality Markup Language
VTPRVertical Temperature Profile Radiometer

W

WAM.....Wave Model
WMOWorld Meteorological Organization
WWWWorld Wide Web

X-Y-Z

XML.....Extensible Markup Language
XSL.....Extensible Stylesheet Language
YPG.....Yuma Proving Grounds
Zip.....procedure to compress unused space to reduce file size

APPENDIX C. GLOSSARY

A

- Access Site.....The tier of the MEL architecture that provides Query, Results, and Order interface functions.
- AFCCCThe Air Force Combat Climatology Center develops and produces special weather-impact information used in: (a) planning and executing worldwide operations of the military services, unified commands, and allied nations; (b) engineering, design, and deployment of weapon systems; (c) weather sensitive, multi-billion dollar national programs controlled by the Secretary of the Air Force; and (d) Department of Defense (DoD) lead for air and space weather modeling and simulation.
- ARL.....The Army Research Laboratory executes fundamental and applied research to provide the Army the key technologies and analytical support necessary to assure supremacy in future land warfare.

B

- BUFR.....The Binary Universal Form for Representation of meteorological data by the World Meteorological Organization (WMO) is a binary code designed to represent meteorological data employing a continuous binary stream.

C-D

- DMSOThe Defense Modeling and Simulation Office provides a full time focal point for information concerning DoD Modeling and Simulation (M&S) activities. Currently the DMSO promulgates M&S policy, initiatives, and guidance to promote cooperation among DoD components to maximize efficiency and effectiveness.
- DTED.....Digital Terrain Elevation Data is provided by the National Imagery and Mapping Agency (NIMA) on a CD-ROM. Its main purpose is to provide elevation heights that are represented in the Latitude/Longitude coordinate system.

E

EA.....An Executive Agent, also known as a Modeling and Simulation Executive Agent (MSEA), is a DoD component to whom the Under Secretary of Defense Acquisition, Technology and Logistics (USD(AT&L)) assigned responsibility and delegated authority for the development and maintenance of specific M&S applications, standards, and data bases, used by or common to many models and simulations.

F

FERRET.....A data visualization and analysis application developed by NOAA/PMEL.

FGDCThe Federal Geographic Data Committee has assumed leadership in the evolution of the National Spatial Data Infrastructure (NSDI) in cooperation with state and local governments, academia and the private sector to establish policies, standards, and procedures for organizations to cooperatively produce and share geospatial data.

G

GRIB.....Gridded Binary is a standard data format for meteorological data established by the World Meteorological Organization (WMO).

H

HDFHierarchical Data Format is a National Center for Supercomputing Applications (NCSA) library and platform independent format for the exchange of scientific data. It includes Fortran and C calling interfaces and utilities for analyzing and converting HDF data files.

HTML.....Hypertext Markup Language is a computer language specifically designed for use with World Wide Web (WWW) browsers (see Web Browser) which allows for active "hyper-links" to other parts of the WWW.

HTTPHypertext Transfer Protocol is a communications protocol commonly used on the World Wide Web (WWW).

I

INE.....The Integrated Natural Environment Program at DMSO includes the MEL.

Internet.....The web of digital communications links which allows access to computer-based data worldwide. Electronic mail (email), File Transfer Protocol (FTP), and the World Wide Web (WWW) are three principal capabilities of the Internet.

J

Java.....An object oriented programming language developed by Sun Microsystems. Similar to C++, Java is smaller, more portable, and easier to use than C++. Java was also designed to be secure and platform-neutral (meaning that it can run on any computer).

K-L

Link.....Highlighted, underlined, or otherwise emphasized text on a World Wide Web (WWW) page which when activated, normally by the click of a mouse button, provides contact to other sources of information on the WWW.

M

MEL.....The Master Environmental Library is a Defense Modeling and Simulation Office (DMSO) project managed under their Integrated Natural Environment (INE) Program. The goal of the MEL project is to support the warfighter and national decision makers, with eventual outreach to the non-DoD and commercial communities, through direct and timely access to natural environmental information, products, and data that support a common interoperable view of the battlespace and help ensure battlespace dominance, and the supply of natural environmental information, products, and data to models and simulations for planning, training, development, and acquisition.

Metadata.....A data set that describes the properties of other data sets.

- MSEA.....A Modeling and Simulation Executive Agent (see EA) is a DoD component to whom the Under Secretary of Defense Acquisition, Technology, and Logistics (see USD(AT&L)) has assigned responsibility and delegated authority for development and maintenance of a specific M&S application, including relevant standards and databases, used by or common to many models and simulations.
- MSIACThe Modeling and Simulation Information Analysis Center is a DMSO contractor facility that hosts the MEL Access Site servers and provides the MEL Help Desk function.
- MSU-ERCThe Mississippi State University, Engineering Research Center (formerly known as MSU-CAST) places emphasis on application of numerical ocean models and modeling techniques toward realistic simulation of ocean conditions, particularly the physical and dynamical state of coastal waters and semi-enclosed seas. Although the primary focus is on oceanography, MSU-ERC has expanded its efforts to coupled air-ocean modeling and supports the acquisition, storage, and application of meteorological data of all kinds.

N

- NGDCThe National Geophysical Data Center manages environmental data in the fields of marine geology and geophysics, paleoclimatology, solar-terrestrial physics, solid earth geophysics, and glaciology (snow and ice).
- NIMAThe National Imagery and Mapping Agency (including the former Defense Mapping Agency) has central responsibility for imagery and mapping with the mission of providing timely, relevant, and accurate imagery intelligence and geospatial information in support of national security objectives.
- NOAAThe National Oceanic and Atmospheric Administration has the mission to describe and predict changes in the Earth's environment, and conserve and manage wisely the Nation's coastal and marine resources to ensure sustainable economic opportunities.
- NRLMRYThe Naval Research Laboratory, Marine Meteorology Division Code 7500 in Monterey, CA is the only scientific center in the Navy wholly dedicated to atmospheric research. NRLMRY is responsible for conducting research and development to provide objective local, regional, and global atmospheric analysis and prediction, as well as the

development of automated weather interpretation systems to support Naval operations.

O-P

Perl.....An interpreted computer language optimized for scanning arbitrary text files, extracting information from those text files, and printing reports based on that information. Perl is used for many system management tasks.

Q-R

Resource Site.....The third tier of the MEL made up of Resource Site databases and used to process orders, control access, schedule requests, retrieve data, and deliver results.

S

SDBF.....The Simulator DataBase Facility is a data repository of simulator databases with the primary function of the transfer of data base investments between U.S. Government organizations and programs.

T-U

URL.....A Universal Resource Locator is an address specifying the location of information on the World Wide Web (WWW.)

V

VPFVector Product Format is point and vector object information using the terminology and concepts from Department of Defense, 1992, Vector Product Format (MIL-STD-600006).

W

Web Browser.....A Graphical User Interface that allows access to information and databases stored on computers worldwide and made available through the World Wide Web (WWW). Examples of Web Browsers include Internet Explorer and Netscape Navigator.

WMOThe World Meteorological Organization is a specialized agency of the United Nations located in Geneva, Switzerland, that facilitates international cooperation in the establishment of networks for making meteorological, hydrological, and other observations and to promote the rapid exchange of meteorological information, the standardization of meteorological observations, and the uniform publication of observations and statistics.

WWWThe World Wide Web is the interconnection of many independent computers worldwide, which provides access to information and databases through the Internet. The WWW is usually accessed through a Web Browser.

X-Y-Z

YPG.....Yuma Proving Grounds

APPENDIX D. CLASSIFIED MEL LABELING

The MASS is configured to operate in an Unclassified or Classified mode during its installation. Classified sites are installed on the SIPRNET, and all Web pages have to be labeled with respect to their classification. This Appendix outlines the procedure that has been followed for page classification labeling.

D.1 APPLICABILITY

This procedure applies to Web pages generated by the MEL directly. Those that govern labeling of Web pages that are linked to/from the MEL Access Sites are those in effect at the sites hosting the pages. For instance, the MEL may have links to Resource Site homepages or to Alternative Access that take a user to a Resource Site's specific data ordering page outside the MEL. The MEL's Classified labeling policy does not apply for these pages. However, metadata provided by Resource Sites that are served up by the MEL Access Site must be in compliance with procedures outlined in this document. It is the responsibility of the metadata creators to ensure that metadata records are marked correctly.

D.2 GENERAL LABELING POLICY

General labeling requirements are given in this section and more specific procedures are outlined for specific pages in the following paragraphs.

D.2.1 Classification Levels

There are three levels of classification used in the MEL page labeling. The abbreviations and their meaning are as follows in decreasing level of classification:

S	=>	Secret
C	=>	Confidential
U	=>	Unclassified

D.2.2 Control Markings

The following Control Markings are allowed in all levels of classification:

RS	=>	Risk Sensitive
FOUO	=>	For Official Use Only
OC	=>	Originator Controlled
NF	=>	Not releasable to foreign nationals
PR	=>	Proprietary – caution, proprietary information involved

D.2.3 Page Banners

All pages in the MEL have a classification banner centered at the top and bottom. The banner is made up of the full classification label, rendered in uppercase bold. If the classification is anything other than UNCLASSIFIED, the banner appears in red:

SECRET

Control Markings are ignored in the page banners in these cases. If the classification is UNCLASSIFIED and there are Control Markings, the latter are appended to the classification in abbreviation, after a double slash:

UNCLASSIFIED//RS

If there are more than one Control Marking, they are separated by commas with no blanks and listed in no particular order:

UNCLASSIFIED//RS, FOUO, NF

D.2.4 Web Page Title

The classification label that appears as a banner in the top and bottom of the page is appended in parenthesis to the page's HTML title:

HTML Data Query (UNCLASSIFIED)

D.2.5 Portion Marking

If the page has a classification higher than Unclassified or there are Control Markings in portions that are displayed, every portion of the page is marked. Portion Markings are enclosed in parentheses at the start of the portion being marked:

(U) This section has an Unclassified Portion Marking.

Items that are part of a hierarchy are not Portion Marked and have the same classification as the parent. For example, if a bulleted list appears after a paragraph, each bullet is not Portion Marked. The bullets have the same classification as the preceding paragraph.

D.2.6 Web Page Links

Links to other Web pages are not Portion Marked.

D.2.7 Frames

All frames on a page are treated as individual pages and have their own classification banners and titles and Portion Markings.

D.3 SPECIFIC LABELING POLICY

The MEL contains both static and dynamic Web pages. Static pages are independent of user input whereas dynamic Web pages can display different content based on user input.

D.3.1 STATIC WEB PAGES

All of the Mel's static Web pages are Unclassified with no restrictions. Therefore, all of them display an "UNCLASSIFIED" banner at the top and bottom of the page with no Control Markings and none of the portions are marked.

D.3.2 DYNAMIC WEB PAGES

Many dynamic Web pages do not contain any Classified information. These pages are handled the same way as the static Web pages. There are a few important dynamic pages that need to be handled in a special way so as to determine dynamically what the page classification should be and whether portions should be marked or not.

D.3.2.1 HTML Query Results Page

The page as shown in **Figure D-1** is created when a user submits a Query using the *HTML Data Query* page (this is an example for demonstration of the marking only, and it is not actually Classified). It contains a list of data sets that have met the Query criteria, organized by data source. The only thing visibly displayed from the metadata in this page are the data set titles. Hence, the overall classification of this page is determined by looking at all the classifications and Control Markings of the titles in the results set. The overall classification becomes the one that is of highest classification in the result set. The overall Control Marking becomes the concatenation of all the unique Control Markings of the dataset titles. Titles missing classifications and Control Markings are assumed to be Unclassified.

(U) NRLMRY - Naval Research Laboratory Monterey

Total matched: **2** Datasets returned: **1-2** Description Home

1. (U//PR,RS) COAMPS Europe - Current 25 days, Coupled Ocean Atmosphere Mesoscale Prediction System
 Data Description | [Inaccessible](#) | [Links to data](#) | [MEL Order](#)

2. (C) COAMPS Europe - Archived, Coupled Ocean Atmosphere Mesoscale Prediction System
 Data Description | [Inaccessible](#) | [Links to data](#) : [MEL Order](#)

[Home Page](#) | [About MEL](#) | [Browse Holdings](#) | [HTML Data Query](#) | [Java Data Query](#) | [MEL Tools](#)

CONFIDENTIAL

Figure D-1. HTML Query Results Page

For instance, in the figure above, two results are shown with titles that are Portion Marked as (U//PR,RS) and (C). The overall classification from these two is hence C that is displayed at the top and bottom of the page in red as “CONFIDENTIAL” and the Control Markings are ignored.

D.3.2.2 Bounding Areas Visualization Page

The page shown in **Figure D-2** is created when a user chooses to visualize the bounding areas of either all of the results set or some of the results in the results page. In this case, there are two items from the metadata that contribute to the overall classification of the page: the classification of the bounding coordinates of the dataset and its title. The overall classification becomes the highest classification of the items being visualized, whether the classification comes from the title or the bounding coordinates. Titles and bounding coordinates that are missing classification and Control Markings are assumed to be Unclassified.

Figure D-2. Bounding Areas Visualization Page

(U) Dataset Listing by Bounding Coordinates

 ... (U) Bounding Coordinates: [W = 110.00] [E = 143.00] [N = 53.00] [S = 22.00]

3. (U) WAM Korea - Data Archived 19970720 - 19981121, korea_nest1_appl, Wave Model

[NRLMRY] [Data Description](#) [[Inaccessible](#)] [Links to data : MEL Order](#)

 ... (U//RS,FOUO,NF) Bounding Coordinates: [W = -10.00] [E = 39.75] [N = 46.50] [S = 28.00]

6. (U) WAM Mediterranean Sea - Current 25 days, Wave Model

[NRLMRY] [Data Description](#) [Links to data : MEL Order](#)

7. (U//OC) WAM Mediterranean Sea - Data Archived, Wave Model

[NRLMRY] [Data Description](#) [[Inaccessible](#)] [Links to data : MEL Order](#)



[Home Page](#) | [About MEL](#) | [Browse Holdings](#) | [HTML Data Query](#) | [Java Data Query](#) | [MEL Tools](#)

UNCLASSIFIED//RS,OC,FOUO,NF

Figure D-2 shows the bottom page of the bounding areas visualization of three items in the result set. The overall classification of this page is (U) and the Control Markings are concatenated to the banner “UNCLASSIFIED//RS,OC,FOUO,NF”. Note how the Control Markings are derived from both the bounding coordinates and the titles which have been Portion Marked.

D.3.2.3 Date Ranges Visualization Page

The page shown in **Figure D-3** is created when a user chooses to visualize the date ranges of either all of the results set or some of the results in the *Results* page. In this case, there are two items from the metadata that contribute to the overall classification of the page: the classification of the date range of the data set, and its title. The overall classification becomes the highest classification of the items being visualized, whether the classification comes from the title or the date range. Titles and date ranges that are missing classification and Control Markings are assumed to be Unclassified.

Figure D-3 below shows the bottom page of the date ranges visualization of three items in the result set. The overall classification of this page is (U) and the Control Markings are concatenated to the banner “UNCLASSIFIED//RS,OC,FOUO,NF”. Note how the Control Markings are derived from both the date ranges and the titles which have been Portion Marked.

(U) Dataset Listing by Date Ranges

-  ... (U) *Date Range: 07/20/1997 - 11/21/1998*
3. (U) WAM Korea - Data Archived 19970720 - 19981121, korea_nest1_appl, Wave Model
 [NRLMR Y] [Data Description](#) [[Inaccessible](#)] *Links to data :* [MEL Order](#)
-  ... (U//RS) *Date Range: 05/29/2000 - 06/23/2000*
6. (U) WAM Mediterranean Sea - Current 25 days, Wave Model
 [NRLMR Y] [Data Description](#) *Links to data :* [MEL Order](#)
-  ... (U//FOUO,NF) *Date Range: 07/20/1997 - 05/29/2000*
7. (U//OC) WAM Mediterranean Sea - Data Archived, Wave Model
 [NRLMR Y] [Data Description](#) [[Inaccessible](#)] *Links to data :* [MEL Order](#)



[Home Page](#) | [About MEL](#) | [Browse Holdings](#) | [HTML Data Query](#) | [Java Data Query](#) | [MEL Tools](#)

UNCLASSIFIED//RS,OC,FOUO,NF

Figure D-3. Date Ranges Visualization Page

D.3.2.4 Metadata Display Page

The page shown in **Figure D-4** is displayed when the user chooses to look at the metadata by following the *Data Description* link in the *Results* page. The overall classification of *Metadata Display* page is determined from the metadata itself. The classification will be whatever valid classification that appears in the field:

Metadata_Reference_Information
 Metadata_Security_Information
 Metadata_Security_Classification

The Control Markings of the page is determined from the following field:

Metadata_Reference_Information
 Metadata_Access_Constraints

If the classification field is missing, then the metadata will not be displayable. It is the responsibility of the metadata creator to make sure that a classification is provided for the metadata and that it is consistent with the Portion Markings in the metadata.

Metadata Access Constraints: RS
Metadata Security Information:
 Metadata Security Classification System:
 Department of Defense Trusted Computer System Evaluation Criteria
 CSC-STD-001-83
 Metadata Security Classification: Unclassified
 Metadata Security Handling Description: None

UNCLASSIFIED//RS

Figure D-4. Metadata Display Page

Figure D-4 shows the bottom of the metadata display with the banner which was obtained from the Metadata_Security_Classification and the Metadata_Access_Constraints fields.

D.3.2.5 Order Page

The page shown in **Figure D-5** is displayed when the user selects the *MEL Order* link from the *Results page*, or when they click **Generate Order Form** from the *Metadata Display* page. In this case, the page is dynamically created based on the Custom MEL Order section of the metadata. Portion Markings may appear in the sections to be displayed in the Order Form. The overall classification and Control Markings of the generated page will be determined from the title and any of the other sections that are displayed in the Order page.

DATE/TIME RANGE (GMT-YYYYMMDDhh.hh) :

(U//OC,NF) WARNING: The archive represents a very large collection of data. Please limit this order to three weeks of data or less. Orders for more than three weeks of data may be truncated.

GET the data as a single request, specify a date range below.

	Begin time	End time
Dataset:	1999052000.00	2000052912.00
Request:	1999052000.00	2000052912.00

Dataset time increment : 12 hours

FORMAT :

(C) This data set is available in GRIB format only.

FORMAT = GRIB

Figure D-5. Order Page

Figure D-5 displays a portion of the order page. Note how it has been Portion Marked.

Classified MEL NOTE: The *Java Data Query* option is not available in Classified MEL. If the link is followed, a page will come up that briefly mentions this restriction.

APPENDIX E. MEL TEST AND SUPPORT SOFTWARE

The distribution of information pertaining to the MTSS contained in Appendix E is restricted. Any requests for this information should be forwarded to the Project Lead at the Naval Research Laboratory, Marine Meteorology Division, 7 Grace Hopper Avenue, STOP 2, Monterey, CA 93943-5502 or email to siquig@nrlmry.navy.mil for approval.