Intergovernmental Oceanographic Commission
Reports of Meetings of Experts and Equivalent Bodies

First Session of the IODE Steering Group for MEDI

First Session
Oostende, Belgium, 23-27 April 2001

UNESCO 2001

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Abstract

The IODE Steering Group for MEDI was established during IODE-XVI to support the MEDI software system. The Marine Environmental Data Information Referral Catalogue (MEDI) is a directory system for datasets, data catalogues and data inventories developed by IODE. During its First Session the Steering Group reviewed the current status of the MEDI software tool and previewed the next release of the software (version 2.2) that will be an internet-based system. The Group discussed the changes required to the new version of the software before its release and drafted a list of recommended software changes.

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INTRODUCTION

The Session was opened on Monday, 23 April 2001 at 09:30 at the Hotel Bero, Oostende, Belgium by Dr Edward Vanden Berghe, Manager of the Flanders Marine Data and Information Centre, Flanders Marine Institute (VLIZ). As host of the meeting, Dr. Vanden Berghe welcomed the participants to the meeting.

The Chairman of the MEDI Steering Group (SG-MEDI), Mr. Greg Reed, outlined the objectives of the meeting and presented a background to the MEDI project. He recalled that the Marine Environmental Data Information Referral Catalogue (MEDI) is a directory system for datasets, data catalogues and data inventories developed by IODE. Its development was recommended in 1971 by the Joint Task Team on Interdisciplinary and Inter-organisational Data and Information Management and Referral (IMAR). The MEDI Catalogue was published in 1979 (1st Edition, *IOC Manuals and Guides No. 10*), 1985 (2nd Edition, *IOC Manuals and Guides No. 16*) and 1993 (3rd Edition, *IOC Manuals and Guides No. 16*). He also recalled that the IODE Committee, during its Fifteenth Session had recommended (Recommendation IODE-XV.1) that a Pilot Project be undertaken to: '*Test the ways and means of applying modern methodology to the further development of the MEDI system and, on the basis of these investigations, to draft a specification for a revised MEDI'*. The objectives of the Pilot Project were: (i) prepare a clear statement on the level and breadth of information to be included in the system; (ii) identify a core set of fields necessary to constitute a MEDI entry; (iii) identify the technical requirements of the database; (iv) develop transfer interfaces between existing databases and the agreed-upon system; (v) develop suitable end-user interfaces for the databases also bearing in mind the needs of users not connected to the Internet; (vi) define necessary structures for the maintenance and further development of the system; (vii) make the MEDI system compatible with initiatives developed by other programmes, e.g., GCOS, WCP, INFOTERRA.

The chairman reported that AODC had proceeded to implement the MEDI Pilot Project soon after IODE-XV. He explained that a review of existing national and international data directory systems (including EDMED and Blue Pages) had been undertaken, revealing many similarities allowing direct mapping between most fields. The first version of the MEDI software was released in 1998 and was distributed to data centres in Australia, Thailand, Vietnam and countries participating in the ODINEA project (Kenya, Madagascar, Mauritius, Mozambique, Seychelles, South Africa and Tanzania). In 1999, the GEMIM, during its Sixth Session, was invited to comment on the first version. This resulted in various suggestions for improvement of the tool. In March 2000, during the Eighth Session of GETADE, it was decided to integrate the GCMD DIF structure into MEDI so as to enable that MEDI can be used as an off-line input tool for the GCMD.

During the Sixteenth Session of the IOC Committee on International Oceanographic Data and Information Exchange (IODE) in Lisbon, Portugal, 31 October – 8 November 2000, the Committee congratulated the MEDI Pilot Project members on the completion of the MEDI Pilot Project. The Committee also adopted the following Recommendation IODE-XVI.1, establishing the MEDI program and its Steering Group:

Recommendation IODE-XVI.1

ESTABLISHMENT OF THE MEDI PROGRAMME

The IOC Committee on International Oceanographic Data and Information Exchange,

Recognizing the value of a directory system for databases, data catalogues and data inventories to a broad user community, including IOC programmes such as GOOS and related activities within other global and regional programmes,

Recalling Recommendation IODE-XV.1 that established the "*Pilot Project on the Revision of MEDI*",

Noting with satisfaction the full achievement of the objectives of the Pilot Project during the intersessional period,

Further noting with satisfaction the advanced technological capabilities of the MEDI software tool as an off-line metadata creation tool,

Recommends that:
(i) the "*Pilot Project on the Revision of MEDI*" becomes a permanent programme of IODE;

(ii) the Steering Group will be responsible for the further development and enhancement of the MEDI software tool, in response to user feedback and additional requirements;

(iii) the MEDI Programme be supported by a Steering Group, established as a subsidiary body of IODE, initially composed of AODC (Australia), NASA-GCMD (USA), KODC (Republic of Korea), BODC (UK), Russian NODC (Russian Federation) and US NODC (USA). The activities of the Steering Group shall be coordinated by Mr G. Reed, AODC;

(iv) the distribution of tasks within the Steering Group be based on available capacity of the group members;

(v) the Steering Group will be guided by and interact with GETADE and GEMIM;

Further recommends the incorporation of a MEDI software tool as a training module in IODE training activities and capacity building products,

Urges Member States to use the MEDI software tool to the maximum extent possible and promote its use to the widest possible audience.

Subsequent to the IODE-XVI Session, Mr. Greg Reed has been nominated as Project Leader (also Chair of GETADE). In response to Recommendation IODE-XVI.1 and in accordance with the IODE-XVI Work Plan and Budget (Recommendation IODE-XVI.11) this First Session of the Steering Group was organised and composed of the Project Leader/Chair of GETADE (Mr. Greg Reed), Lola Olsen (NASA/GCMD), Monica Holland (NASA/GCMD), Matthew de Plater (AODC, MEDI software developer), Edward Vanden Berghe (VLIZ), Pauline Simpson (SOC, previous Chair GEMIM), Evgeny Vyazilov (Russian NODC), Kyu Kui Jung (Korean NODC) and Donald W. Collins (US NODC).

CURRENT VERSION OF MEDI

The chairman introduced the current version of MEDI, which is a Java application with a Java Database Connection (JDBC) allowing the user to connect to the database of their choice thereby ensuring that the MEDI software is hardware independent, as well as database independent. He explained that the current version includes a Java database engine and the software is available for the Windows environment (Windows 98, Windows NT) and for UNIX (Sun Solaris). The software is available with interfaces in English, French and Japanese. On-line help files, with examples, are available to assist the user. Records can be exported in XML, HTML or text format. The XML format can be used to export records to the GCMD system. The MEDI software is available for downloading from http://www.aodc.gov.au/IODE/MEDI/.

DEMONSTRATION OF INTERNET BETA VERSION OF MEDI

Whereas the current version of MEDI has been designed as a stand alone application for use within small data centres, it was felt that there was a need for an on-line version of MEDI to allow users to add new metadata records and to search either a centralised or distributed version of MEDI.

Mr de Plater has been writing the software for a new version of MEDI that is browser-driven, thus allowing users to connect to the internet, if required, to search for marine-related metadata. Mr de Plater demonstrated this beta version, to be known as Version 2.2 of MEDI, and described the functions of the new system. As the system is browser driven it can also be used locally, either as a stand-alone system or on a local network.

GCMD PRESENTATION

Ms Lola Olsen from NASA/GCMD gave a presentation on activities at GCMD and provided information on the progress on implementation of MD8. A demonstration of MD8 was given and a list of the MD8 portals that are accessible was provided.

MD8 uses Isite, a free-text search software tool, which uses the standards-based Z39.50 protocol for clients to connect. The current version of Isite is linked to MD7 but is currently being upgraded for MD8's free-text content search. MD8-Oracle, the GCMD database-centreed search system, is a Java-based application that MEDI could access using either http or a Java RMI application interface. Both the http and Java RMI interfaces are our custom versions but are open interfaces that others may use.

There was some discussion about providing different language versions of MEDI and Ms Olsen outlined the developments in GCMD for other language versions. The CCRS-CEONET (Canadian node) has both valids in French and in English. The science coordinator at GCMD has contacted CCRS to request the list of French valids and these will be made available for inclusion in MEDI. It was confirmed that CONAE, the Argentina node, does not provide a Spanish translation for the keywords at this time and that INPE, the Brazilian IDN node, does not provide a Portuguese translation.

There was some discussion on the meaning of the words "published" and "released" in the GCMD citation field. The meaning of the GCMD citation fields were clarified as follows:

> A data set can be "published" more or less in a traditional sense, but more often data sets are "released" (that is, just made available). Published data sets might include data tables published in a journal or technical report or even on the web, data

published as part of a CD-ROM, or data published as part of a data centre's ongoing activity (for example, the Carbon Dioxide Information Analysis Centre (CDIAC) regularly publishes its data as fully citable documents).

Many data centres simply "release" the data without any rigorous publication activity. The bottom line is that the creator of the dataset needs to be credited. The data set creator may not be the same person(s) as the one who writes the journal article, communicating the scientific results. The data set citation field used by GCMD is based on the FGDC and ISO 19115/TC211 citation elements.

The format of the citation group is as follows:
Group: Data_Set_Citation
   Dataset_Creator:
   Dataset_Title:
  Dataset_Release_Date:
  Dataset_Release_Place:
   Dataset_Publisher:
   Version:
   Issue_Identification:
   Data_Presentation_Form:
   Other_Citation_Details:
   Online_Resource:
End_Group

There was a question about the Data Centres that were used within the GOSIC portals. GCMD has provided a full list of GOSIC Data Centres and this is listed in Annex III. GCMD has also created a subset list of all the ocean-related data centres held in the GCMD. This is listed in Annex IV.

RUSSIAN NODC PRESENTATION

A presentation of the current activities in the area of marine metadata at the Russian NODC (RIHMI-WDC), with special emphasis on the Computerised Handbook for Informational Oceanographic Resources, was provided by Evgeny Vyazilov.

RECOMMENDED CHANGES TO MEDI SOFTWARE

The Group commended the work done by the MEDI software developer, Mr de Plater, and discussed the changes required, including increased data validation, to version 2.2 of the software before its release. Details of requested changes to the software are listed in Annex V. It is expected that these changes will be implemented for a software release in August 2001. A pre-release version will be made available for comment by the SG members.

CLOSURE

The SG Chairman thanked everybody for contributing to the first session of the MEDI Steering Group. He especially thanked this session's host, Dr Vanden Berghe for the excellent arrangements for the meeting. The First Session of the IODE Steering Group for MEDI was closed on Friday 27 April at 14:00. In accordance with the IODE work plan and budget it was planned to have the next Session in 2002. Date and place will be decided upon later.

ANNEX I

AGENDA

1. INTRODUCTION

2. CURRENT VERSION OF MEDI

3. DEMONSTRATION OF INTERNET BETA VERSION OF MEDI

4. GCMD PRESENTATION

5. RUSSIAN NODC PRESENTATION

6. RECOMMENDED CHANGES TO MEDI SOFTWARE

7. CLOSURE

ANNEX II

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ANNEX III

GCMD LIST OF GOSIC DATA CENTRES

1. BODC > British Oceanographic Data Centre
2. CDIAC > Carbon Dioxide Information Analysis Center, DOE
3. COLA/GSWP > Global Soil Wetness Project/Center for Ocean-Land-Atmosphere Studies
4. CRU > Climatic Research Unit, University of East Anglia
5. GRDC > Global Runoff Data Center
6. GSFC_DAAC > Goddard Space Flight Center Distributed Active Archive Center, NASA
7. HDPI > Hydrosphere Data Products Inc.IFREMER/SISMER
8. IGBP-DIS > International Geosphere-Biosphere Programme-Data and Information System
9. IPCC/DDC > Intergovernmental Panel on Climate Change Data Distribution Center
10. JAMSTEC > Japan Marine Science and Technology Center
11. JMA/MRI > Meteorological Research Institute, Japan Meteorological Agency
12. LDEO/IRI > International Research Institute for Climate Prediction, Lamont-Doherty Earth Observatory
13. LLNL > Lawrence Livermore National Laboratory
14. MSSL > Mullard Space Sciences Laboratory, UK NASA/GISS
15. NOAA/NESDIS/NGDC > National Geophysical Data Center, NOAA
16. NOAA/NESDIS/NODC > National Oceanographic Data Center, NOAA
17. NOAA/NGDC/WDC-MGG > World Data Center for Marine Geology & Geophysics, National Geophysical Data Center, NOAA
18. NOAA/NWS/NCEP/CPC > Climate Prediction Center, NOAA
19. NOAA/OAR/AOML > Atlantic Oceanographic and Meteorological Laboratory, NOAA
20. NOAA/OAR/PMEL/TAO > Tropical Atmosphere Ocean Project, Pacific Marine Env. Lab., NOAA
21. NOAA/OAR/SEAS > Shipboard Environmental (Data) Acquisition System, NOAA
22. ORNL_DAAC > Oak Ridge National Laboratory Distributed Active Archive Center
23. PSMSL > Permanent Service for Mean Sea Level
24. SIO/MLRG > Scripps Institution of Oceanography, Marine Life Research Group
25. TEST-DIAL > Data and Information Access Link
26. TU > Trent University
27. UH/SOEST > School of Ocean and Earth Science and Technology, University of Hawaii
28. UMD/GLCF > Global Land Cover Facility, University of Maryland
29. UMD/LGRSS > University of Maryland, Laboratory for Global Remote Sensing Studies
30. UNH/CSRC > Complex Systems Research Center, Univ. of New Hampshire
31. USGS > U.S. Geological Survey
32. USGS/EROS > Earth Resources Observation Systems Data Center, U.S. Geological Survey
33. USGS/WRD > Water Resources Division, U.S. Geological Survey
34. UT/AUSTIN/CRWR > University of Texas - Austin/Center for Research in Water Resources
35. WCMC > World Conservation Monitoring Centre
36. WGMS > World Glacier Monitoring Service
37. WHOI > Woods Hole Oceanographic Institution

ANNEX IV

OCEAN-RELATED DATA CENTRES HELD IN GCMD

Short Name	Long Name
1.AADC	Australian Antarctic Data Centre
2.ACS/ESS/NRCAN	Aeronautical and Technical Services, ESS, NRCan
3.ACZISC SECRETARIAT	Atlantic Coastal Zone Information Steering Committee Secretariat
4.AEDC/UK	Antarctic Environmental Data Centre
5.AFI	Aquarius Flight Inc.
6.AGI	American Geological Institute
7.AIMS	Australian Institute of Marine Science
8.ALTERRA	ALTERRA, Texel
9.AMRC	Antarctic Meteorological Research Center
10.AODC	Australian Oceanographic Data Centre
11.ASDLS	Antarctic Seismic Data Library System
12.ASF	Alaska SAR Facility
13.ASF DAAC	Alaska SAR Facility Distributed Active Archive Center
14.AVISO	Archiving, Validation and Interpretation of Satellite Oceanographic Data
15.AWI	Alfred Wegener Institute for Polar and Marine Research
16.BADC	British Atmospheric Data Centre
17.BBSR	Bermuda Biological Station for Research
18.BIGELOW LABORATORY	Bigelow Laboratory of Ocean Sciences
19.BIO/F&O	Bedford Institute of Oceanography, Fisheries and Oceans, Canada
20.BISHOP MUSEUM	Bishop Museum Department of Natural Sciences
21.BODC	British Oceanographic Data Centre
22.BOM	Bureau of Meteorology, Australia
23.CABI	CAB International
24.CAL/DWR	California Department of Water Resources
25.CANADAX	Canadax Industrial Group Limited
26.CBOS	Chesapeake Bay Observing System
27.CBP	Chesapeake Bay Program
28.CCL	Channel Consulting Ltd.
29.CCMA	Canadian Centre for Climate Modelling and Analysis
30.CCRS/GC/NRCAN	Canada Centre for Remote Sensing, GC, NRCan
31.CDA	Centro de Datos Antarticos, Argentina
32.CDIAC	Carbon Dioxide Information Analysis Center, DOE
33.CEADO	Centro Argentino de Datos Oceanograficos
34.CEDARE	Centre for Environment and Development for the Arab Region and Europe
35.CEDO	Centro Espanol de Datos Oceanograficos
36.CENDOC	Centro Nacional de Datos Oceanograficos de Chile
37.CENPAT	Patagonian National Centre
38.CERB	Centro de Estudios de Recursos Bioticos
39.CERC	Coastal Engineering Research Center
40.CERC/FRF	Coastal Engineering Research Center, Field Research Facility
41.CFS	Canadian Forest Service
42.CFS/GLFC	Canadian Forest Service, Great Lakes Forestry Centre, NRCan
43.CH	Chadwyck-Healey Inc.
44.CHL	Chadwyck-Healey Limited
45.CHS	Chadwyck-Healey Inc. of Spain
46.CIMSS	Cooperative Institute for Meteorological Satellite Studies
47.CMO/GC/NRCAN	Canada Map Office, Centre for Topographic Information, Geomatics Canada, Natural Resources Canada
48.CN-NADC	National Antarctic Data Center of China
49.CNODC	China National Oceanographic Data Center
50.CNR/IMGA	Consiglio Nazionale delle Ricerche/Istituto per lo studio delle Metodologie Geofisiche Ambientali

51.CNRM/GMME	Centre National de Recherche Meteorologique
52.COBA	Centro Oceanografico Buenos Aires
53.COLA	Center for Ocean-Land-Atmosphere Studies
54.CORAL	Coral Reef Alliance
55.CRSSA/CC	Center for Remote Sensing and Spatial Analysis, Cook College
56.CRU	Climatic Research Unit, University of East Anglia
57.CSIC	Instituto de Ciencias del Mar
58.CSR	Canadian Seabed Research Ltd.
59.CSUOHIO/CESTP	Cleveland State University, Center for Environmental Science, Technology and Policy
60.CU - CLEMSON/BFSI	Baruch Forest Institute, Clemson University
61.CU - CORNELL	Cornell University
62.CWS	Canadian Wildlife Service
63.DACEOU	Department of Applied Chemistry and Engineering, Oita University
64.DALHOUSIE	Dalhousie University
65.DEPK	Department of Environment and Pollution, Kumamoto Prefecture
66.DEYP	Department of Environment Yamanashi Prefecture
67.DHETP	Department of Health and Environment Tokushima Prefecture
68.DIALOG	Knight-Ridder Information, Inc.
69.DIASHU	Department of Integrated Arts and Sciences, Hiroshima University
70.DKRZ	Deutsches Klimarechenzentrum GmbH
71.DLR/DFD	German Remote Sensing Data Center, Deutsches Fernerkundungsdatenzentrum (DFD)
72.DNR	Department of Natural Resources - Queensland, Australia
73.DOD	Deutsches Ozeanographisches Datenzentrum
74.DRA	Defense Research Agency
75.DVNII	Far East Research Institute for Hydrometeorology
76.EC	Environment Canada
77.EC/CCIW	Environment Canada, Canada Centre for Inland Waters
78.EC/CIS	Environment Canada - Canadian Ice Service
79.EC/MSC/CCRM	Climate Monitoring and Data Interpretation Division, Meteorological Service of Canada, Environment Canada
80.ECMWF	European Centre for Medium-Range Weather Forecasts
81.EDC_DAAC	EROS Data Center Distributed Active Archive Center
82.EDIMAR	Estacion de Investigaciones Marinas Isla Margarita - FLASA
83.EESD/LANL	Earth & Environmental Sciences Division/Los Alamos National Laboratory
84.EIC/ITE	Environmental Information Centre at the Institute of Terrestrial Ecology
85.ELSEVIER	Elsevier Science Inc.
86.ELTU	Environmental Laboratory Tohoku University
87.EOC	Earth Observation Center
88.EPA	Environmental Protection Agency
89.ESA/ESRIN APP-AEU	European Space Agency/ESRIN Remote Sensing Services
90.EURIMAGE SCRL	
91.FAO	Food and Agriculture Organization of the United Nations
92.FAO/FI	Food and Agriculture Organization of the United Nations, Fisheries Department
93.FCIHE	Fukuoka-City Institute for Hygiene and Environment
94.FIMR	Finnish Institute of Marine Research
95.FLA/DEP/FMRI	Florida Department of Environmental Protection, Florida Marine Research Institute
96.FO	Fisheries and Oceans, Canada
97.FSE/SUT-NISHIMURA LABORATORY	Faculty of Science and Engineering, Science University of Tokyo, Nishimura Lab.
98.FSPFES	Fukushima Prefecture Fisheries Experiment Station
99.FSU	Florida State University
100.FSU/COAPS	Florida State University Center for Ocean-Atmospheric Prediction Studies
101.FUB	Free University of Berlin
102.FWIE	Fish and Wildlife Information Exchange, Virginia Tech

103.FWS/ALASKA	U.S. Fish and Wildlife Service, Alaska
104.G-JGOFS-PDM	German JGOFS Project Data Management
105.GC/NRCAN	Geomatics Canada, NRCan
106.GCIP	GCIP Project Office
107.GDCEDC	GALE, ERICA Data Center, Drexel University
108.GETECH	Geophysical Exploration Technology
109.GFZ	Geo Research Center Potsdam
110.GKSS	GKSS Forschungszentrum GmbH Geesthacht, Germany
111.GLCF	Global Land Cover Facility
112.GMU	George Mason University
113.GRDC	Global Runoff Data Center
114.GSC/NRCAN	Geological Survey of Canada, NRCan
115.GSFC_DAAC	Goddard Space Flight Center Distributed Active Archive Center, NASA
116.GSJ	Geological Survey of Japan
117.GSNSE/KU	Graduate School of Natural Science and Engineering, Kanazawa University
118.GWC	Gulf Weather Corporation
119.HCFES	Hokkaido Central Fisheries Experimental Station
120.HE	Hamilton Exploration
121.HNHS	Hellenic Navy Hydrographic Service
122.HPFES	Hyogo Prefectural Fisheries Experimental Station
123.IAA	Instituto Antarctico Argentino
124.IACR	Institute of Arable Crops Research-Rothamsted
125.ICES/MDC	Marine Data Centre, International Council for the Exploration of the Sea
126.ICES/SVC_HYDR	International Council for the Exploration of the Sea, Service Hydrographique
127.ICLARM	International Center for Living Aquatic Resources Management
128.ICPRB	Interstate Commission on the Potomac River Basin
129.IDI	Intermountain Digital Imaging
130.IFM	Institut fuer Meereskunde, Kiel, Germany
131.IFREMER/CERSAT	IFREMER Centre ERS d'Archivage et de Traitement
132.IFREMER/SISMER	IFREMER Systemes d'Informations Scientifiq ues pour la Mer, France
133.IGBP/IGAC/GEIA	Global Emissions Inventory Activity, International Global Atmospheric Chemistry, IGBP
134.IGNE	IGN ESPACE
135. IGPO	International GEWEX Project Office
136.IISTU	Institute of Industrial Science, Tokyo University
137.IMDC	Irish Marine Data Centre
138.INOCAR	Instituto Oceanografico de la Armada
139.INODC	Indian National Oceanographic Data Centre
140.INPE/CPTEC	Centro de Previsao de Tempo e Estudos Climaticos
141.INPE/DSM	INPE Divisao de Sensoriamento Remoto
142.IOF	Institute of Oceanography and Fisheries
143.IPCR	The Institute of Physical and Chemical Research
144.ISIRC	International Soil Reference and Information Centre
145.IUCN/SSC/AFESG	African Elephant Specialist Group - Species Survival Commission - WCU
146.IUI	Interuniversity Institute for Marine Sciences, Israel
147.JAMSTEC	Japan Marine Science and Technology Center
148. JHU/APL	Johns Hopkins University Applied Physics Laboratory
149.JISAO	Joint Institute for the Study of the Atmosphere and Ocean, U. Washington
150.JMA	Japan Meteorological Agency
151.JODC	Japan Oceanographic Data Center
152.JPL/PODAAC	Physical Oceanography Distributed Active Archive Center
153.JRC/SAI	Space Applications Institute at Joint Research Center (JRC), Ispra (VA) /Italy
154.KODC	Korean Oceanographic Data Center
155.KOPFES	Kochi Prefectural Fisheries Experimental Station
156.KORDI	Korea Ocean Reasearch and Development Institute

157.KPFES	Kanagawa Prefectural Fisheries Experimental Station
158.KUDA	Kuwait Data Archive
159.LANDCARE RESEARCH	
160.LARC_DAAC	Langley Research Center Distributed Active Archive Center, NASA
161.LDEO	Lamont-Doherty Earth Observatory
162.LDEO/IRI	International Research Institute for Climate Prediction, Lamont-Doherty Earth Observatory
163.LFRI	Latvian Fisheries Research Institute
164.LMER/CRETM/UW	University of Washington, Columbia River Estuarine Turbidity Maximum Project
165.LMER/CRRL	Columbia River Research Laboratory, LMER
166.LTER/PIE/MBL	Marine Biological Laboratory, Plum Island Ecosystem
167. MACLAREN	MacLaren Plansearch Ltd/ SNC/Lavalin Inc
168.MARF/EUMETSAT	Meteorological Archive Retrieval Facility/ EUMETSAT
169. MARTEC	Martec, Ltd
170.MBARI	Monterey Bay Aquarium Research Institute
171.MBL/LTER	Marine Biological Laboratory, Woods Hole
172.MDDNR	Maryland Department of Natural Resources
173.MEDIAS	Support Office for Regional Research on Global Environmental Change
174.MEDS	Marine Environmental Data Service
175.MERI	Marine Ecology Research Institute
176.MIAS	Marine Information & Advisory Service
177.MIC	Meteorological Information Center (JWA)
178.MID-C	Marine Information Distribution Centre
179.MID/YUK	Mining Inspection Division, Yukon Region, DIAND
180.MLML	Moss Landing Marine Laboratories
181.MMS/GOMR	Minerals Management Service, Gulf of Mexico Outer Continental Shelf Region
182.MMS/POCS	Mineral Management Service, Pacific OCS Region
183.MODB	Mediterranean Oceanic Data Base
184.MPFES	Miyagi Prefectural Fisheries Experimental Station
185.MPI	Max Planck Institute
186.MRJ INC.	
187.MRSC	Manitoba Remote Sensing Centre, Manitoba, Canada
188.MSC/EC	Meteorological Service of Canada, EC
189.MSL/NRIS	Montana State Library/Natural Resource Information System
190.MSSL	Mullard Space Sciences Laboratory, UK
191.MSU/LTER	Michigan State University, Kellogg Biological Station (KBS)
192.NAC	National Archives of Canada
193.NAIS	National Atlas Information Service of Canada
194.NASA/GISS	Goddard Institute for Space Studies, NASA
195.NASA/GSFC/LHP/OIB	Oceans and Ice Branch, Laboratory for Hydrospheric Processes, GSFC, NASA
196.NASA/GSFC/LTP/CDDIS	Crustal Dynamics Data Information System, Laboratory for Terrestrial Physics, NASA/GSFC
197.NASA/GSFC/LTP/GD	Geodynamics Branch, Laboratory for Terrestrial Physics, GSFC, NASA
198.NASA/GSFC/NSSDC	National Space Science Data Center, Goddard Space Flight Center, NASA
199.NASA/JPL/AIRSEA	Air - Sea Interaction & Climate, Jet Propulsion Laboratory, NASA
200.NASA/JPL/OCEANESIP	Ocean ESIP, Jet Propulsion Laboratory, NASA
201.NASA/MSFC/GHRC	Global Hydrology Resource Center, Marshall Space Flight Center, NASA
202.NASDA/EOC	National Space Development Agency of Japan Earth Observation Center
203.NAVOCEANO	U.S. Naval Oceanographic Office
204.NAVY/NOAA JIC	Joint Ice Center
205.NBDNRE	New Brunswick Department of Natural Resources and Energy
206.NBS/CPSU/OSU	Cooperative Park Studies Unit, Oregon State University
207.NBS/CPSU/UMINN	Cooperative Park Studies Unit, University of Minnesota
208.NCAR	National Center for Atmospheric Research
209.NCAR/ATD	Atmospheric Technology Division, NCAR

210.	NCAR/DSS	Data Support Section, NCAR
211.	NCAR/SCD/MSS	Scientific Computing Division, Mass Storage System, NCAR
212.	NCMR	National Centre For Marine Research
213.	NERC/DU	National Environment Research Council, Dundee University
214.	NERSC	Nansen Environmental and Remote Sensing Centre
215.	NFLD/DFAQ	Newfoundland and Labrador Department of Fisheries and Aquaculture
216.	NFLDDME	Newfoundland and Labrador Department of Mines and Energy
217.	NIBH	National Institute of Bioscience and Human Technology
218.	NIES	National Institute for Environmental Studies
219.	NIMA	National Imagery and Mapping Agency (NIMA)
220.	NIOZ	Netherlands Institute for Sea Research
221.	NIPR	National Institute of Polar Research
222.	NMDC/IMR	Institute of Marine Research, Norwegian Marine Data Centre
223.	NMML	National Marine Mammal Laboratory
224.	NOAA-SAA	NOAA/NESDIS Satellite Active Archive
225.	NOAA/CBO	NOAA Chesapeake Bay Office
226.	NOAA/CSC	NOAA Coastal Services Center
227.	NOAA/NCCOS/CCMA	Center for Coastal Monitoring and Assessment, NOAA
228.	NOAA/NESDIS/NCDC	National Climatic Data Center, NOAA
229.	NOAA/NESDIS/NGDC	National Geophysical Data Center, NOAA
230.	NOAA/NESDIS/NODC	National Oceanographic Data Center, NOAA
231.	NOAA/NESDIS/NODC/COL	Coastal Ocean Laboratory, National Oceanographic Data Center, NOAA
232.	NOAA/NESDIS/NODC/LISD	Library Services Information Division, NOAA
233.	NOAA/NESDIS/ORA/LSA	Laboratory for Satellite Altimetry, NOAA
234.	NOAA/NESDIS/OSDPD	Office of Satellite Data Processing and Distribution, NOAA
235.	NOAA/NGDC/WDC-MGG	World Data Center for Marine Geology & Geophysics, National Geophysical Data Center, NOAA
236.	NOAA/NMFS/FSED	Fisheries Statistics and Economics Division, NMFS
237.	NOAA/NMFS/NEFSC	Northeast Fisheries Science Center, National Marine Fisheries Service, NOAA
238.	NOAA/NMFS/OREI	Office of Research and Environmental Information, NOAA
239.	NOAA/NMFS/OST	Office of Science & Technology, NOAA
240.	NOAA/NMFS/SEFSC	Southeast Fisheries Science Center, National Marine Fisheries Service, NOAA
241.	NOAA/NMFS/SWFSC	Southwest Fisheries Science Center, National Marine Fisheries Service, NOAA
242.	NOAA/NMFS/SWFSC/PFEL	Pacific Fisheries Environmental Laboratory, Southwest Fisheries Science Center, NOAA/NMFS
243.	NOAA/NOS/COP	Coastal Ocean Program, National Ocean Service, NOAA
244.	NOAA/NOS/NCCOS	National Centers for Coastal Ocean Science
245.	NOAA/NOS/NGS	National Geodetic Survey, NOAA
246.	NOAA/NOS/OCRM/NERR	National Estuarine Research Reserve, NOAA
247.	NOAA/NOS/OCS/CSDL	Coast Survey Development Laboratory, NOAA
248.	NOAA/NOS/OCS/HSD	Hydrographic Surveys Division, NOAA
249.	NOAA/NOS/OCS/MCD	Marine Chart Division, NOAA
250.	NOAA/NOS/OCS/OPSD	Oceanographics Products and Services Division, NOAA
251.	NOAA/NOS/ORCA/CMBAD	Coastal Monitoring and Bioeffects Assessment Division, NOAA
252.	NOAA/NOS/ORCA/HAZMAT	Hazardous Materials Response and Assessment Division, NOAA
253.	NOAA/NOS/ORCA/SEA	Strategic Environmental Assessment Division, NOAA
254.	NOAA/NOS/SPO	National Ocean Service Special Projects Office, NOAA
255.	NOAA/NWS/BOSTON	Boston Massachusetts Forecast Office, NOAA
256.	NOAA/NWS/NCEP	National Centers for Environmental Prediction, NOAA
257.	NOAA/NWS/NCEP/CPC	Climate Prediction Center, NOAA
258.	NOAA/NWS/NCEP/CPC/WRCC	Western Regional Climate Center, NOAA
259.	NOAA/NWS/NDBC	National Data Buoy Center
260.	NOAA/NWS/PTWC	Pacific Tsunami Warning Center, NOAA
261.	NOAA/NWS/TALLAHASSEE	Tallahassee Forecast Office, NOAA
262.	NOAA/OAR/AOML	Atlantic Oceanographic and Meteorological Laboratory, NOAA
263.	NOAA/OAR/ARO	NOAA Arctic Research Office
264.	NOAA/OAR/CMDL	Climate Monitoring Diagnostics Laboratory, NOAA

265.NOAA/OAR/CMDL/NOAH	Nitrous Oxide and Halocompounds Division, NOAA
266.NOAA/OAR/ERL/ARL	Air Resources Laboratory, NOAA
267.NOAA/OAR/ERL/CDC	Climate Diagnostics Center, NOAA
268.NOAA/OAR/ERL/ETL	Environmental Technology Laboratory, NOAA
269.NOAA/OAR/ERL/GLERL	Great Lakes Environmental Research Laboratory, NOAA
270.NOAA/OAR/ERL/NSSL	National Severe Storms Laboratory, NOAA
271.NOAA/OAR/ERL/WPL	Wave Propagation Laboratory, NOAA
272.NOAA/OAR/PMEL	Pacific Marine Environmental Laboratory, NOAA
273.NOAA/OAR/PMEL/TAO	Tropical Atmosphere Ocean Project, Pacific Marine Env. Lab., NOAA
274.NOAA/OAR/SEAS	Shipboard Environmental (Data) Aquisition System, NOAA
275.NOD	Norsk Oseanografisk Datasenter
276.NODC/BULGARIA	National Oceanographic Data Center, Bulgaria
277.NODC/PAKISTAN	Pakistan National Oceanographic Data Centre
278.NPS	Naval Postgraduate School
279.NPS/DNP	National Park Service, Denali National Park and Preserve
280.NRIFS	National Research Institute of Fisheries Science
281.NRSC	National Remote Sensing Centre Ltd, UK
282.NSIDC	National Snow and Ice Data Center
283.NSIDC_ARCSS	Arctic System Science Data Coordination Center
284.NSIDC_DAAC	NSIDC Distributed Active Archive Center
285.NSIDC_NOAA	National Oceanic and Atmospheric Administration
286.NTIS	National Technical Information Service
287.NTU	National Taiwan University
288.NZAI/ANZ	Antarctica New Zealand, New Zealand Antarctic Institute
289.OCEANOR	Oceanographic Company of Norway AS
290.ODP	Ocean Drilling Program
291.OGS	Osservatorio Geofisisco Sperimentale - Geofisica della Litosfera
292.ONE MADAGASCAR	Office National pour L'Environnement, Madagascar
293.ORNL_DAAC	Oak Ridge National Laboratory Distributed Active Archive Center
294.ORSTOM	L'Institut Francais de Recherche Scientifique pour le Developpement en Cooperation
295.OS	Ordnance Survey, UK National Mapping Agency
296.OSU - OREGON	Oregon State University
297.OSU/LTER	Oregon State University, H.J. Andrews LTER Site
298.PACINST	Pacific Institute for Studies in Development, Environment, and Security
299.PINRO	Polar Research Institute of Marine Fisheries and Oceanography
300.PNRA	Italian Program for Antarctic Research
301.POLES	Polar Exchange at the Sea Surface
302.PPCO	Phillips Petroleum Company
303.PSMSL	Permanent Service for Mean Sea Level
304.PSU/EMS	Earth and Mineral Sciences, Pennsylvania State University
305.PWRI	Public Works Research Institute, Ministry of Construction
306.RAN/HYDRO	Royal Australian Navy, Hydrographic Office
307. REEF	Reef Environmental Education Foundation
308.REEF RELIEF	Reef Relief Organization
309.RHS	Regional Hydrometeorological Service
310.RIAMKU	Research for Applied Mechanics Kyushu University
311.RITI	Reading Information Technology, Inc.
312.RNODC	Russian National Oceanographic Data Centre RIHMI-WDC
313.RSFDCE	Russian State Fund of Data on Condition of Environment
314.RSI	RADARSAT International
315.RSL/SUT	Sensing Laboratory, Science University of Tokyo
316.RUG	University of Groningen
317.SAHFOS	Sir Alister Hardy Foundation for Ocean Science
318.SCCWRP	Southern California Coastal Water Research Project
319.SEDAC	Socioeconomic Data and Applications Center
320.SEIMAC	Seimac Research Ltd.
321.SEYCHELLES FISHING AUTHORITY	
322.SFU	Simon Fraser University

323.SHIRSHOV	Shirshov Institute of Oceanology
324.SIO/C4	SIO Center for Clouds Chemistry and Climate
325.SIO/CCS	Scripps Institution of Oceanography, Center for Coastal Studies
326.SIO/GRD	Geosciences Research Division,Scripps Institution of Oceanography
327.SIO/JEDAC	Scripps Institution of Oceanography, Joint Environmental Data Analysis Center
328.SIO/MLRG	Scripps Institution of Oceanography, Marine Life Research Group
329.SIO/PORD	Scripps Institution of Oceanography, Physical Oceanography Research Division
330.SIO/SSF	Scripps Institution of Oceanography, Satellite Facility
331.SMHI	Swedish Meteorological and Hydrological Institute
332.SMRL	Seaconsult Marine Research Ltd.
333.SOC	Southampton Oceanography Centre
334.SOUTHAMPTON/SOBS	University of Southampton, School of Biological Sciences, UK
335.SPOT IMAGE	
336.SSEOP	Space Shuttle Earth Obs. Phot. Database, NASA
337.TAMU/GERG	Texas A&M University, Geochemical & Environmental Research Group
338.TAMU/OCEAN	Texas A&M University, Department of Oceanography
339.TCIPO	TOGA COARE International Project Office
340.TNAU	Tamil Nadu Agricultural University
341.TNCMT	Toba National College of Maritime Technology
342.TSP	Tom Snyder Productions
343.TSS	Tromso Satellite Station
344.TU	Trent University
345.UAF/GDC	Univ. of Alaska Fairbanks, GeoData Center, Geophysical Institute
346.UAF/IMS	Institute of Marine Science, University of Alaska Fairbanks
347.UAS/IBSS	Ukrainian Academy of Science, Institute of Biology of the Southern Seas
348.UAS/MHI	Ukrainian Academy of Sciences/Marine Hydrophysical Institute (MHI)
349.UC/CCAR	Colorado Center for Astrodynamics Research, University of Colorado
350.UCAR/JOSS	University Corporation for Atmospheric Research Joint Office for Science Support
351.UCAR/NOAA/JOSS/CODIAC	UCAR JOSS Cooperative Distributed Interactive Atmospheric Catalog System
352.UCI	University of California, Irvine
353.UCONN	University of Connecticut
354.UCSB	University of California, Santa Barbara
355.UCSB/ICESS	Institute for Computational Earth System Science, University of California Santa Barbara
356.UCSB/OPL	University of California, Santa Barbara, Ocean Physics Laboratory
357.UCT_OCEAN	University of Cape Town Department of Oceanography
358.UDEL/GEOG	University of Delaware, Department of Geography
359.UH	University of Hawaii
360.UH/METO	Meteorology Department, University of Hawaii
361.UH/SAC	Shipboard Acoustic Doppler Current Profiler Center, University of Hawaii
362.UH/SLC	Sea Level Center, University of Hawaii
363.UH/SOEST	School of Ocean and Earth Science and Technology, University of Hawaii
364.UHH/KMEC	Kalakaua Marine Education Center, University of Hawaii at Hilo
365.UKEA/NCEMS	UK Environment Agency, National Centre for Environmental Monitoring and Surveillance
366.UMASS/GEOL	University of Mass., Dept. of Geosciences
367.UMD/MDSG	University of Maryland, Maryland Sea Grant
368.UMD/METO	University of Maryland Meteorology Dept.
369.UME/SMS	University of Maine, School of Marine Sciences
370.UMIAMI	University of Miami
371.UMONT/GNP	Glacier National Park, University of Montana
372.UNEP/EAD/GRID-GENEVA	UNEP - Environment Assessment Division - Global Information Database - Geneva
373.UNEP/EAP-AP (GRID-	UNEP - Environmental Assessment Programme for Asia and the Pacific

BANGKOK)

374.UNEP/GRID-ARENDAL	United Nations Environment Programme Global Resource Information Database
375.UNEP/GRID-GENEVA	United Nations Environment Programme Global Resource Information Database
376.UNEP/GRID-INPE	United Nations Environment Programme Global Resource Information Database - INPE
377.UNEP/GRID-PAC	UNEP - Global Resource Information Database - Programme Activity Centre
378.UNEP/GRID-WARSAW	UNEP - Global Resource Information Database - Warsaw - Environmental Info Centre
379.UNH/CSRC	Complex Systems Research Center, Univ. of New Hampshire
380.UNISYS	UNISYS Corporation Weather Services
381.UOC	Ukraine Oceanologic Center
382.UOL	University of Liverpool, UK
383.URI	University of Rhode Island
384.USAF/AFRL	US Air Force Research Laboratory
385.USAFETAC/OL-A	USAF Environmental Technical Applications Center, Operating Location-A
386.USC/BARUCH/LTER	U. of South Carolina, Baruch Inst. for Marine Biology and Coastal Research
387.USC/BARUCH/NERR	National Estuarine Research Reserve, Baruch Marine Field Laboratory, University of South Carolina
388.USDA/ARS/NAL	National Agricultural Library, USDA
389.USDA/ARS/NAL/AGIS	Agricultural Genome Information System, National Agricultural Library, USDA
390.USDA/ARS/NRI	Natural Resources Institute, USDA-ARS
391.USDA/ARS/SEWRL	Southeast Watershed Research Laboratory, USDA-ARS
392.USDA/ARS/TFRL	Tree Fruit Research Laboratory, USDA-ARS
393.USDA/CSREES/MSSTATE	MS State University, USDA-CSREES
394.USDA/CSREES/PURDUE	Purdue University, USDA-CSREES
395.USDA/ERS	Economic Research Service, USDA
396.USDA/FS/NERS	Northeastern Research Station, Forest Service, USDA
397.USDA/FS/RMRS	Rocky Mountain Research Station, Forest Service, USDA
398.USDA/NASS	National Agricultural Statistics Service, USDA
399.USDA/NRCS/NCGC	National Cartography and Geospatial Center, USDA-NRCS
400.USDA/NRCS/NWCC	National Water & Climate Center, USDA
401.USF/DMS	University of South Florida, Department of Marine Sciences
402.USFWS	U.S. Fish and Wildlife Service
403.USFWS/NWI	U.S. Fish and Wildlife Service, National Wetlands Inventory
404.USGS	U.S. Geological Survey
405.USGS/BRD	USGS Biological Resources Division
406.USGS/BRD/CERC	Columbia Environmental Research Center, Biological Resources Division, U.S. Geological Survey
407.USGS/BRD/ERO	USGS Biological Resources Division, Eastern Regional Office
408.USGS/BRD/FCSC	USGS Biological Resources Division, Florida Caribbean Science Center
409.USGS/BRD/FRESC	U.S. Geological Survey, Biological Resources Division, Forest Rangeland Ecosystem Science Center
410.USGS/BRD/GLSC	Great Lakes Science Center, USGS/BRD
411.USGS/BRD/LSC	USGS Biological Resources Division, Leetown Science Center
412.USGS/BRD/MSC	USGS Biological Resources Division, Midwest Science Center
413.USGS/BRD/NPWRC	Northern Prairie Wildlife Research Center, Biological Resources Division, U.S. Geological Survey
414.USGS/BRD/NWHC	National Wildlife Health Center, USGS/BRD
415.USGS/BRD/NWRC	National Wetlands Research Center, USGS/BRD
416.USGS/BRD/PWRC	Patuxent Wildlife Research Center, USGS/BRD
417.USGS/BRD/RDL	U.S. Geological Survey, Biological Resources Division, Research and Development Laboratory
418.USGS/BRD/WRO	USGS Biological Resources Div., Western Regional Office
419.USGS/EDC/ALASKA	EROS Data Center, Anchorage, AK

420.USGS/EROS	Earth Resources Observation Systems Data Center, U.S. Geological Survey
421.USGS/ESIC/ANCHORAGE	Earth Science Information Center, Anchorage, Alaska
422.USGS/ESIC/D.C.	Earth Science Information Center, Washington, D.C.
423.USGS/ESIC/DENVER	Earth Science Information Center, Denver, Colorado
424.USGS/ESIC/LAKEWOOD	Earth Science Information Center, Lakewood/Denver, Colorado
425.USGS/ESIC/LOS ANGELES	Earth Science Information Center, Los Angeles, California
426.USGS/ESIC/MENLO PARK	Earth Science Information Center, Menlo Park, California
427.USGS/ESIC/RESTON	Earth Science Information Center, Reston, Virginia
428.USGS/ESIC/ROLLA	Earth Science Information Center, Rolla, Missouri
429.USGS/ESIC/SALT LAKE CITY	Earth Science Information Center, Salt Lake City, Utah
430.USGS/ESIC/SAN FRANCISCO	Earth Science Information Center, San Francisco, California
431.USGS/ESIC/SPOKANE	Earth Science Information Center, Spokane, Washington
432.USGS/ESIC/STENNIS	Earth Science Information Center, NASA Stennis Space Center, Mississippi
433.USGS/GD/CRC	Central Region Center, Geology Division, U.S. Geological Survey
434.USGS/GD/DENVER	USGS, Geology Division, Denver
435.USGS/GD/GCRP	USGS/Geology Division/Global Change Research Program
436.USGS/GD/MENLO PARK	USGS, Geology Division, Menlo Park, CA
437.USGS/GLIS/RESTON	USGS/Global Land Information System, Reston, VA
438.USGS/NAWQA	National Water Quality Assessment Program, U.S. Geological Survey
439.USGS/NMD	USGS National Mapping Division
440.USGS/NMD/RESTON	National Mapping Division, Reston, VA
441.USGS/OFR	USGS Open File Reports Section
442.USGS/WHFC	Woods Hole Field Center, U.S. Geological Survey
443.USGS/WRD	Water Resources Division, U.S. Geological Survey
444.USGS/WRMGS	USGS Western Region Marine and Coastal Surveys
445.USSR/HYDRO	USSR Hydrographic Service, Research Oceanographic Centre
446.US_WOCE	United States WOCE (World Ocean Circulation Experiment) Office
447.UT/AUSTIN/BEG	University of Texas - Austin/Bureau of Economic Geology
448.UT/AUSTIN/CSR	University of Texas - Austin/Center for Space Research
449.UTORONTO	University of Toronto
450.UVA/IBED/PGSS	Physical Geography and Soil Science, Institute for Biodiversity and Ecosystem Dynamics, University of Amsterdam
451.UVA/LTER	University of Virginia, Department of Environmental Science
452.UWA	University of Washington
453.UWA/APL	University of Washington, Applied Physics Laboratory
454.UWA/SAFS/CBR	Columbia Basin Research/School of Aquatics and Fisheries Sciences, University of Washington
455.UWI/LTER	University of Wisconsin-Madison, Department of Limnology
456.UWI/MADISON/IES/CCR	U. Wisconsin Institute for Environmental Studies, Center for Climatic Research
457.VIMS	Virginia Institute of Marine Science
458.VNIIGMI/WDC	All Union Research Institute of Hydrometeorological Information
459.VNIRO	All-Union Research Institute for Marine Fishing and Oceanography
460.VT/ANR	Vermont Agency of Natural Resources
461.VT/DEC	Vermont Department of Environmental Conservation
462.WCMC	World Conservation Monitoring Centre
463.WDC-A/PALEOCLIMATOLOGY	World Data Center-A for Paleoclimatology
464.WDC-B/RIHMI	World Data Center-B Research Institute of Hydrometeorological Information
465.WDC-B1/OCEANOGRAPHY	World Data Center-B1 for Oceanography
466.WDC/GLACIOLOGY, BOULDER	World Data Center for Glaciology, Boulder
467.WFF/OSB	Wallops Flight Facility Observational Science Branch, NASA
468.WHOI	Woods Hole Oceanographic Institution
469.WHP_SAC	WOCE Hydrographic Programme Special Analysis Centre
470.WLDELFT	Delft Hydraulics
471.WMO	World Meteorological Organization

472.WPRCEPH	Wakayama Prefectural Research Center of Environment and Public Health
473.WRI	World Resources Institute
474.YNCMT	Yuge National College of Maritime Technology
475.YNU	Yokohama National University

ANNEX V

RECOMMENDED MODIFICATIONS TO MEDI 2.2

1 **General Formatting**
   • Break data entry form up into sub-categories with a different screen for each. Sub-categories to be accessed by a simple navigation system (ie. Tab or pull down menu).
2 **Data Validation**
   • Check correct date formatting
   • Start date before end date for temporal records.
3 **Function to search valid lists for a particular word when entering data.**
4 **Function to add new entries to valid list.**
5 **Record searching**
   • Circular search area for geo-spatial searching.
   • Improve/implement instructions.
   • AND/OR selection of multiple fields.
   • Expandable / collapsible search criteria.
   • Submit buttons need to be more accessible.
   • Free text search – what fields does it search?
6 **Auto determination of sea area**
7 **Entering of date fields**
   • use separate field boxes for day, month and year.
8 **Temporal records**
   • Arrange date records so as they are entered the values are appended to an expanding list.
   • Ability to handle incomplete date values (eg. Year and month without days)
9 **Parameter values**
   • allow blanks for sub-categories.
10 **Make keyword entries repeatable.**
11 **Summary**
   • Implement system to allow users to create a summary to the required format. Explore the possibility of using a wizard function.
   • Make note that summary is to be entered in English.
12 **Remove number of observations field. Include information in summary.**
13 **Include 'Originating Center' field.**
14 **Valid data center list**
   • Implement GCMD valid list.
   • Sort alphabetically.
15 **Highlight all mandatory fields.**
16 **Remove role field – default to 'Data Provider Contact'**
17 **Include 'Dataset_ID' field.**
18 **Citation Records**
   • Data Presentation Format – be able to add new values to the valid list or use free text.
   • Issue Identification – re-label 'Citation Identifier'
19 **Distribution Records**
   • Media and format lists – add ability to add to lists or use free text.
   • URL Description – needs to be a repeatable field.
20 **Data Resolution Records – make group non-repeatable.**
21 **Creation Date – default to today's date**
22 **Last Revision Date – default to today's date**
23 **Review History – box field rather than line field.**
24 **Parent Record – move to summary.**
25 **IDN Node – auto fill (eg. IOC/MEDI)**
26 **Reference field – Recognise URL's and email addresses within free text and format as hyperlink.**
27 **Multi-lingual functionality**
28 **Test performance of Instant DB under realistic loads.**
29 **Help System**
   • Quick reference help system