Intergovernmental Oceanographic Commission
Reports of Meetings of Experts and Equivalent Bodies

IODE Group of Experts on Technical Aspects of Data Exchange

Ninth Session

Finnish Institute of Marine Research
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Abstract
The 9th Session of the IODE Group of Experts on Technical Aspects of Data Exchange was held in Helsinki, Finland, from 20–22 April 2002 and was hosted by the Finnish Institute of Marine Research. The Group reviewed the achievements made during the previous intersessional period. Issues discussed at the meeting included the development of a Marine XML and collaboration with the ICES/IOC Study Group on the Development of Marine Data Exchange Systems using XML (SGXML), the development of an end-to-end data management framework and cooperation with other programmes concerned with marine data management, in particular the Joint WMO/IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM). The Group adopted a comprehensive work plan for the next intersessional period.

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1. ORGANIZATION OF THE SESSION

1.1 OPENING OF THE SESSION

The GETADE Chairman, Mr Greg Reed, welcomed the participants to the Ninth Session of the IODE Group of Experts on Technical Aspects of Data Exchange. He thanked the hosts from the Finnish Institute of Marine Science, Pekka Alenius and Riita Olsonen for hosting this Session.

1.2 ADOPTION OF THE AGENDA

The Chairman outlined the Provisional Agenda and invited comment on the agenda. The Group adopted the agenda, which is given in Annex I.

2. CHAIRMAN'S REPORT

2.1 CHAIRMAN'S REPORT

Reference was made to the Chairman's Report on the Intersessional Period (Document IOC/IODE-TADE-IX/4). The Chairman recalled the last GETADE meeting was held in Greenbelt in March 2000 where the group discussed the direction in which it felt GETADE should develop in the next years. GETADE-VIII defined the main mission of the GETADE work plan as:

"The development of an End-to-End Marine Data Management Framework"

The Group developed an action plan that identified five medium-term objectives. These objectives are:

Objective 1: Develop IODE Global metadata management system.
Objective 2: Develop marine XML as a mechanism to facilitate format and platform independent information, metadata and data exchange.
Objective 3: Develop the IODE Resource Kit as a marine data and information management reference tool for scientists and data/information managers.
Objective 4: Organize integrated national and regional level capacity building projects and programmes, linking equipment, training and operational activities.
Objective 5: Develop a high-quality IODE web presence and IODE Data/Information Management Portal, as a mechanism to promote IODE, to reinforce the 'IODE family' principle, and to guide users to marine information, metadata and data sources.

The Chairman then outlined the structure of the IODE Programme and the role of GETADE. The terms of reference of the group and the current membership of the group were reviewed. There was some discussion about the current membership of the group and ways to expand and/or diversify the group. The Chairman explained the procedure for nomination to GETADE is through the national IODE representative to the IOC secretariat.

The Group recommended that the IOC secretariat send a circular letter to all IODE national representatives to call for nominations of suitably qualified individuals for membership of the group (Action: IOC Secretariat).

2.2 REVIEW OF 2000-2001 ACTION PLAN

Reference was made to the Action Plan for the Group 2000-2001 (Document IOC/IODE-TADE-IX/5). The status of each of the action items was reviewed.

The Group discussed in detail the MEDI metadata system and its link to other metadata directories, in particular EDMED. It was noted that SeaSearch is developing a cruise-level metadata structure based on EDMED. The **Group noted** the different levels of granularity represented in the MEDI, EDMED and GCMD metadata directories and agreed that the following activities would be included in the action plan for the intersessional period:

- Instruct SG-MEDI to investigate and prepare for increased granularity of the information in MEDI (Action: Greg Reed)
- SG-MEDI to maintain awareness of SeaSearch activities (Action: SG-MEDI)
- All members to submit description of their institution's metadata structure to describe dataset level, cruise level and observation level with the view of increasing the granularity of MEDI (Action: All)
- Document metadata activities within LOICZ (Action: Edward Vanden Berghe)

3. REPORT ON IODE XVI

This agenda item was introduced by the Chairman with reference to Document IOC/IODE-TADE-IX/6. The Chairman recalled that the sixteenth session of IODE was held in Lisbon, Portugal from 31 October to 8 November 2000 and was attended by nearly 100 participants from 37 countries. A number of activities relevant to GETADE were discussed at the meeting:

The IODE Resource Kit Project. This is the IODE capacity building tool for oceanographic data centres that contains data and information management reference material and software tools useful for data centres. The committee congratulated the Resource Kit Pilot Project participants on the successful completion of the Pilot Project and adopted Recommendation IODE-XVI.7 which establishes the IODE Resource Kit Project and also establishes a Steering Group as a subsidiary body of IODE that will be guided by GETADE and GEMIM.

The Status of the MEDI Pilot Project and Future Actions. The committee congratulated the MEDI Pilot Project participants on the successful completion of the MEDI Pilot Project and adopted Recommendation IODE-XVI-1which establishes MEDI as a permanent program of IODE. A Steering Group has also been established that will be guided by and interact with GETADE and GEMIM.

Development of a Marine XML. The IODE Chairman reported that a Marine XML Consortium was being created to support the development of a single marine XML framework. The Committee acknowledged the importance of XML and recognised the need for IODE to be closely involved in the development of a Marine XML and recommended that the IODE Groups of Experts (GETADE and GEMIM) be involved in the XML Consortium.

IODE Data and Information Portal. The Committee tasked GETADE and GEMIM with (i) defining the content and technical specifications of the OceanPortal; (ii) identifying possible technical solutions to implement such a portal.

End-to-end Data Management Framework. The issue of an end-to-end data management framework was discussed in detail. The present situation with a large number of data formats in existence, covering many different data types with many countries and centres having different computer systems results in a high level of duplication of effort. Data is quality controlled many times, translated from one format to another, with little or no value adding occurring during this process. The IODE community has proven the concept of end-to-end data management through the very successful GTSPP activity and it was considered

timely to introduce a technological solution to support the further development of this data management process. This could be provided through a data framework in much the same way as framework technologies underpinned the Internet. The proposed marine data framework should comprise standards for data, data model and user interfaces. It should also bring in existing information technologies such as Internet based technologies, GIS and Object Oriented Technologies. There is a need for such a framework to underpin the full cycle of marine data from collection through to product development and dissemination. The process of developing such a framework would include the creation of an overarching plan and the creation of a series of modules or 'building' blocks. The existence of existing data structures and computing systems needed to be taken into account when creating these modules. There were both technical and policy issues to be resolved and a clear focus needed to be maintained on the user needs. The Committee tasked GETADE to work on these technical issues.

Status and Future of 'Research Ship Information and Schedules' (NOP). The Committee recommended that the next session of GETADE will include the revision of NOPs and CSRs in its agenda taking into account new scientific demands and modern technological tools of rapid communication and exchange. In their efforts, GETADE should closely co-operate with relevant ICES groups.

Each of these items has been included in the Agenda for detailed discussion.

4. REVIEW OF THE MEETING OF ICES-IOC SGXML

The first session of the ICES-IOC Study Group on the Development of Marine Data Exchange Systems using XML (SGXML) was held on 15-16 April, prior to this session of GETADE. A total of 22 participants from 10 countries and two organisations met to discuss data exchange issues. The terms of reference for the Group are to:

(a) develop a framework and methodology for the use of XML in marine data exchange in close consultation with IOC and the Marine XML Consortium;
(b) develop a workplan that within 4 years will lead to published protocols for XML use in the marine community;
(c) explore how to best define XML tags and structures so that many ocean data types can be represented using a common set of tags and structures.
(d) test and refine these common tags and structures using designated case studies.

All GETADE members attended this first session and a number of action items arising from the meeting were of relevance to the Objectives of GETADE. **The Group agreed** to work closely with the SGXML and to provide input to their workplan Specifically the group would focus on mapping of the MEDI and CSR metadata systems as part of the overall XML solution to establish a single metadata system that can present metadata in the form of a CSR or MEDI. **The Group proposed** to include the following activities in the action plan for the intersessional period:

(i) To develop a prototype of a cruise-station-profile XML structure, with emphasis on metadata for each level of granularity (Action: Don Collins (lead), Nick Mikhailov, Anthony Isenor, Edward Vanden Berghe)
(ii) To prepare a mapping between the MEDI DIF and the Cruise Summary Report structure. (Action: Greg Reed, Don Collins)

In addition, the IOC will be requested to host a community portal web site for SGXML to provide a central location for document distribution and general discussions on the project (Action: IOC Secretariat).

5. DATA PRODUCTS AND SERVICES

5.1 IODE OCEAN PORTAL

The Chairman recalled that the IODE-XVI Committee considered it to be essential that IODE establishes itself as the primary point of contact for scientists, scientific programmes and other users of marine data and information. To do this, IODE must have a greater visible presence and provide a more coordinated way of accessing the data and information products it has available at the Secretariat and at the many national oceanographic data centres. One mechanism to achieve this is through the use of the Internet and a specific approach using the concept of a portal.

The OceanPortal, which has been developed by the IOC, is a high-level directory of Ocean Data and Information related web sites. Its objective is to help scientists and other ocean experts in locating such data & information. The pilot version of OceanPortal was launched on 1 September 2000 with the registered domain name of http://oceanportal.org. This pilot version of the portal comprised static html files. This first version of the portal has now been migrated to a dynamic database application, enabling on-line submission of URLs, powerful searching and other advanced capabilities. Version 2 of was launched on 6 September 2001. Currently there are over 3300 URLs listed on the OceanPortal. The OceanPortal utilises a Google-like web crawler for searching and linking to marine-related sites indexed within OceanPortal.

Some members of the Group have noted difficulties accessing the OceanPortal site using old version of Netscape and **it was agreed** that the Group would:

- Test access to Ocean Portal on Macintosh computers (Action: Edward Vanden Berghe).
- Investigate Ocean Portal access problem using Netscape 4.x (Action: Greg Reed).

The **Group also agreed** to investigate their respective entries in ocean portal (Action: All). The chairman would determine if a letter was sent from IOC to members urging members to add content to Portal site (Action: Greg Reed).

6. COOPERATION WITH OTHER PROGRAMMES

The chairman provided a brief background to the Joint WMO/IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM). The Terms of References of the Technical Commission includes the implementation of data management systems:

> *Development and implementation, in cooperation with the Commission for Basic Systems (CBS), the Committee for International Data and Information Exchange (IODE), the International Council of Scientific Unions (ICSU), and other appropriate data management bodies, end-to-end data management systems to meet the real-time operational needs of the present operational systems and the global observing systems; cooperation with these bodies in seeking commitments for operation of the necessary national compilation, quality control, and analysis centres to implement data flows necessary for users at time scales appropriate to their needs.*

The chairman outlined the structure of JCOMM that includes a Management

Committee, of which IODE is member, and a Data Management programme area. Within the Data Management PA there is a Data Management Coordination Group (chaired by Dr Lin Shaohua) which would meet for the first time in May this year in Paris. There is also an Expert Team on Data Management Practices (chaired by Nick Mikhailov) and the Expert Team on Marine Climatology. Nick Mikhailov then outlined the proposed work plan of the Expert Team on Data Management Practices.

The Group discussed the differences in the data types required by JCOMM and those managed by IODE data centres. JCOMM is interested in operational time scale data whereas IODE data centres have traditionally archived historical data. This focus on historical data is now changing to include operational and real-time data management. Specific discussions followed on the MEDI metadata system and its relation to the ODAS metadata system, a comprehensive metadata base developed by the WMO Subgroup on Marine Climatology to describe data collected by moored and drifting buoys, offshore platforms, etc. The **Group agreed** to compare the ODAS metadata format with the MEDI DIF format and with ROSCOP, noting that there are conceptually different levels of granularity (Action: Don Collins (lead), group and Jean Gagnon to review).

The Group welcomed the opportunity to support the activities of the JCOMM data management team.

7. END-TO-END DATA MANAGEMENT FRAMEWORK

This item was introduced by Mr Nickolay Mikhailov. He identified the need for E2EDM systems, including:

- The lack of agreement on common formats, codes, QC procedures and practices with many projects and a multiplicity of data management practices and standards, resulting in 'independent island states';
- The lack of agreement on strategy and implementation plans for data management across several major international data collection and product development activities;
- Improve in-house practices for project (task) DM specialist level, no transparency tools and technologies for user level - DM for DM
- Crossing metadata and data sets/bases, no entity and integrity of data - original data unit and variants, input/output data for sequential processing observed data - derived data - calculated/modelled data
- Lack of efficient applications of new information technologies - poor and cost-ineffective use of modern tools - Web/XML, DBMS, GIS
- Poor user interface to access data requiring users to pick up pieces of data (metadata, current ocean condition, forecast, analysis, climate, condition history) and to develop their own data system for post-processing.

There are many good examples of data management at work, for example, GTSPP, MEDAR/MEDATLAS, GODAR, MEDI/EDMED, GLOSS and NEAR-GOOS but these systems were poorly integrated with too little cross-project adoption and little connection with the scientific community and other users.

Mr Mikhailov provided a general definition of E2EDM as:

a complex data management technology ensuring support of a full and continuous marine data and information management process from marine data collection to obtaining information for the world ocean study and marine data activities support

He described the two main aspects of an E2EDM framework as (i) technical issues and (ii) functional issues.

(i) Technical issues include communications (GTS and Internet, routes and providers), middleware (web-server, application Server, derived languages), XML (metadata and data, analytical modules), system tools (Navigator, Integrator) and applied task tools.
(ii) Functional issues include preparation of global and regional climatic products, preparation of final data sets and databases and data archiving and storage.

Mr Mikhailov proposed the development of a pilot project to demonstrate an activity within the E2EDM framework, for example, the feasibility of moving data around through the proposed E2EDM concept. **The Group agreed** to prepare pilot project proposal on one of the E2EDM topics (Action: Nick Mikhailov (lead), Greg Reed, GETADE).

Mr Mikhailov agreed to make a presentation on the proposed pilot project to the JCOMM Data Management Coordination Group in May 2002, including the position of GETADE.

The group then discussed the availability of up-to-date documentation on best-practices and tools for data management. The IOC Manuals and Guides series provides information about existing practices but some of these documents are out of date. A number of other documents exist, such as the MEDAR/MEDATLAS documentation and the ICES MDM Guidelines, which provide both procedures, protocols and formats in well-written documentation.

The **Group agreed** to compile a list of technical documents on data management and annotate this list for relevance, currentness and usefulness (Action: Greg Reed (lead), GETADE). This list would then form the basis for updating of existing documentation. It would also provide a useful basis for the JCOMM ETDMP to decide on best practices and tools for data management.

8. REPORTS FROM IODE STEERING GROUPS

The chairman recalled that IODE-XVI had established two Steering Groups that would be guided by, and report to GETADE. These groups are the IODE Steering Group for MEDI and the IODE Steering Group for the Resource Kit. The reports of these Steering Groups were presented and are available from the IODE web site. The reports from the IODE Steering Group for Underway Sea Surface Salinity Data Pilot Project and the progress report from the Group of Experts on Marine Information Management - GE-MIM (Document IOC/IODE-TADE-IX/7) have been provided for background information. The Group requested that the URL for all these reports be included in the Summary Report (Action: Greg Reed).

9. OTHER MATTERS

The chairman recalled that IODE-XVI requested GETADE to consider effective ways to coordinate information between ICES and OCEANIC regarding CSRs and National Oceanographic Programmes (NOP). Member states are encouraged by IODE to send NOPs directly to OCEANIC, with the option to send paper copies to other member nations. A database already exists to manage cruise schedule information (OCEANIC) and a database exists to manage information from completed cruises and this is maintained by ICES. The

ICES database links information about "upcoming cruises (OCEANIC)" with completed cruise information (ROSCOP), providing a level of linkage between NOP and ROSCOP. The **Group agreed** to request that OCEANIC create a link from the Oceanic research schedule page http://ships.cms.udel.edu/ship_gen.asp to the ICES page www.ices.dk/ocean/roscop and vice versa (Action: Greg Reed).

The group then discussed the MDM Guidelines prepared by the ICES Working Group on Marine Data Management (WGMDM). These guidelines are in the process of review it was agreed that GETADE should alert the IODE community to the existence of these guidelines for further review and comment from a wider audience. The chair of the WGMDM, Anthony Isenor, was requested to prepare a cover page about MDM guidelines for distribution among the IODE community (Action: Chair WGMDM). The chair of GETADE would arrange to provide a link on IODE homepage to point to the MDM guidelines (Action Greg Reed).

The chairman then provided an overview of the IODE web page. The concept of this new site is a community portal which encourages user input and discussion. Users can register via the web page registration form and participate in the different discussion forum. The **Group agreed** that a new threaded discussion group for exchanging information about data formats, best practices reviews and assorted database structure information should be added to the IODE web site (Action: Greg Reed). Group members are encouraged to promote the existence of the discussion group and encourage others to utilise this web based discussion group.

10. GETADE ACTION PLAN FOR THE NEXT INTER- SESSIONAL PERIOD

The Group developed an Action Plan for the intersessional period based on the agreed action items arising from the meeting (listed in Annex II) and assigned tasks to each member of the Group.

11. ELECTION OF THE GETADE CHAIR

The Group re-elected Mr Greg Reed as Chair of the Group for the next intersessional period.

12. DATE AND PLACE OF THE NEXT SESSION

The time and place for the next meeting was discussed and **the Group strongly recommended** that to best way to ensure the effective implementation of the Group's work plan would be to hold the next Session of the Group in the year 2003, preferably in conjunction with the ICES Working Group on Marine Data Management (WGMDM) which is planned for April 2003 in Sweden. The Chairman will communicate with the chair of WGMDM to confirm arrangement and will inform the IOC Secretariat.

13. ADOPTION OF THE SUMMARY REPORT

The Group agreed the draft summary report would be circulated to members via email for comment. The Technical Secretary and the Group's Chair will complete any necessary editing and corrections and the final version will be made available on the IODE web site (Action: Greg Reed).

14. CLOSURE OF THE SESSION.

The GETADE Chair thanked everybody for contributing to the meeting. He especially thanked the session's hosts from the Finnish Institute of Marine Science, Pekka Alenius and Riita Olsonen for the excellent arrangements.

The Chair closed the session on Monday 22 March at 15:30 hrs.

ANNEX I

AGENDA

1. **OPENING OF THE SESSION**
   - 1.1 OPENING
   - 1.2 ADOPTION OF THE AGENDA
   - 1.3 WORKING ARRANGEMENTS

2. **CHAIRMAN'S REPORT**
   - 2.1 CHAIRMAN'S REPORT
   - 2.2 REVIEW OF 2000-20001 ACTION PLAN

3. **REPORT ON IODE-XVI AND ITS IMPACT ON GETADE**

4. **REVIEW OF THE MEETING OF ICES-IOC SGXML**

5. **DATA PRODUCTS AND SERVICES**
   - 5.1 IODE OCEAN PORTAL: STATUS AND FUTURE

6. **COOPERATION WITH OTHER PROGRAMMES**
   - 6.1 JCOMM DATA MANAGEMENT PROGRAMME AREA
   - 6.2 REVIEW OF GOOS DATA AND INFORMATON MANAGEMENT STRATEGY PLAN

7. **END-TO-END DATA MANAGEMENT FRAMEWORK AND ITS IMPORTANCE FOR THE FUTURE OF IODE**

8. **REPORTS FROM IODE STEERING GROUPS**
   - 8.1 PROGRESS REPORT ON GROUP OF EXPERTS ON MARINE INFORMATION MANAGEMENT (GE-MIM) ACTIVITIES
   - 8.2 REPORT FROM THE FIRST SESSION OF THE IODE STEERING GROUP FOR THE RESOURCE KIT
   - 8.3 REPORT FROM THE FIRST SESSION OF THE IODE STEERING GROUP FOR MEDI.
   - 8.4 REPORT FROM THE FIRST SESSION OF THE IODE STEERING GROUP FOR UNDERWAY SEA SURFACE SALINITY DATA PILOT PROJECT

9. **OTHER MATTERS**
   - 9.1 NOPs – STATUS AND FUTURE OF "RESEARCH SHIP INFORMATION AND SCHEDULES"

10. **PREPARATION OF THE GETADE ACTION PLAN FOR THE NEXT INTER SESSIONAL PERIOD**

11. **ELECTION OF THE GETADE CHAIR**

12. **DATE AND PLACE OF THE NEXT SESSION**

13. **ADOPTION OF THE SUMMARY REPORT**

14. **CLOSURE OF THE MEETING**

ANNEX II

RECOMMENDATIONS

Recommendation TADE-IX.1

ACTION PLAN FOR THE INTERSESSIONAL PERIOD

The IODE Group of Experts on Technical Aspects of Data Exchange,

Having reviewed its completed and ongoing activities,

Highlighting the need for IODE to provide data services and products to its target audiences,

Taking into account the opportunities provided by new technologies,

Being aware of the resource constraints under which IOC is operating,

Adopts a plan of action for the intersessional period as given in the Annex to this Recommendation.

Annex to Recommendation TADE-IX.1

Action Item	Agenda Item	Task	Who
1	2	IOC Secretariat to send circular letter	IOC Secretariat
2	2	Instruct SG-MEDI to investigate and prepare for increased granularity of the information in MEDI	Greg Reed
3	2	SG-MEDI to maintain awareness of SeaSearch activities	SG-MEDI
4	2	All members to submit description of their institution's metadata structure to describe dataset level, cruise level and observation level with the view of increasing the granularity of MEDI	All
5	2	Document metadata activities within LOICZ	Edward Vanden Berghe
6	4	Prepare a mapping between CSR and DIF	Greg Reed, Don Collins
7	4	Develop a prototype of cruise-station-profile XML structure, with emphasis on metadata for each level of granularity	Don Collins (lead), Nick Mikhailov, Anthony Isenor, Edward Vanden Berghe
8	4	Develop a new community portal web site for SGXML which will provide a central location for document distribution	IOC Secretariat
9	5	Test access to Ocean Portal on Macintosh computers	Edward Vanden Berghe
10	5	Investigate Ocean Portal access problem using Netscape 4.x	Greg Reed
11	5	All group member to investigate their respective entries in ocean portal	All
12	5	Determine if letter was sent from IOC to members urging members to add content to Portal site	Greg Reed

13	6	Compare ODAS metadata format to MEDI/DIF format and ROSCOP, noting that they are conceptually at different levels of granularity	Don Collins (lead), group and Jean Gagnon to review
14	7	GETADE propose a limited pilot project to demonstrate an activity within the E2EDM framework	Nick Mikhailov (lead), Greg Reed, GETADE
15	7	Identify technical documents for each GETADE member to review and annotate for relevance, currentness, and usefulness, include IOC manuals and guides; MEDATLAS documentation, netCDF, ICES MDM guidelines.	Greg Reed (lead), GETADE
16	8	Include the URL for each GE and SG report in the GETADE meeting summary report.	Greg Reed
17	9	GETADE to request that Oceanic create a link from Oceanic research schedule page http://ships.cms.udel.edu/ships_gen.asp to the ices www.ices.dk/ocean/roscop page and vice versa	Greg Reed
18	9	Prepare a cover page about MDM guidelines for distribution among the IODE community	Chair WGMDM
19	9	Provide a link on IODE homepage to point to ICES-MDM guidelines	Greg Reed
20	9	Set up a web-based discussion group for exchanging information about data formats, best practices reviews, and assorted data base structure information	Greg Reed
21	13	Draft copy of summary report to be circulated to members for comment.	Greg Reed

ANNEX III

LIST OF PARTICIPANTS

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ANNEX IV

LIST OF DOCUMENTS

Document Code	Title	Agenda item
IOC/IODE-TADE-IX/1	Provisional Agenda	1.2
IOC/IODE-TADE-IX/4	Chairman's Report on the Intersessional Period	2.1
IOC/IODE-TADE-IX/5	Action Plan for the Group 2000-2001	2.2
IOC/IODE-TADE-IX/6	Report on IODE-XVI and its Impact on GETADE	3
IOC/IODE-XVI/3	IODE-XVI, Lisbon, Portugal, 31 October-8 November 2000	3
IOC/IODE-TADE-IX/7	Progress report on Group of Experts on Marine Information Management (GE-MIM) activities	8
	First Session of the IODE Steering Group for MEDI, First Session, Oostende, Belgium, 23-27 April 2001 URL: http://ioc.unesco.org/iode/files.php?action=viewfile&fid=23&fcat_id=4	8
	First Session of the IODE Steering Group for the Resource Kit, First Session, Miami, Florida, 19-23 March 2001 URL: http://ioc.unesco.org/iode/files.php?action=viewfile&fid=24&fcat_id=4	8
	First Session of the IODE Steering Group for Underway Sea Surface Salinity Data Archiving Pilot Project, Brest, France, 15-16 November 2001 URL: http://ioc.unesco.org/iode/files.php?action=viewfile&fid=53&fcat_id=4	8

ANNEX V

LIST OF ACRONYMS

CSR	Cruise Summary Report (also called ROSCOP) (IOC/IODE)
DIF	Directory Interchange Format
ETDMP	End-to-end Data Management
EDMED	European Directory of Marine Environmental Data (UK)
GCMD	Global Change Master Directory (NASA, USA)
GEMIM (IOC/IODE)	IODE Group of Experts on Marine Information Management
GETADE (IOC/IODE)	IODE Group of Experts on Technical Aspects of Data Exchange
GLOSS	Global Sea Level Observing System
GODAR (IOC/IODE)	Global Oceanographic Data Archaeology and Rescue Project
GOOS	Global Ocean Observing System (IOC-WMO-UNEP-ICSU)
GTSPP	Global Temperature Salinity Profile Programme (IGOSS-IODE)
ICES	International Council for the Exploration of the Sea
IODE	International Oceanographic Data and Information Exchange (IOC)
JCOMM	Joint IOC-WMO Technical Commission for Oceanography and Marine Meteorology (IOC-WMO)
LOICZ	Land-Ocean Interaction in the Coastal Zone (IGBP)
MEDAR	Mediterranean Data Archaeology
MEDATLAS	Mediterranean Atlas
MEDI	Marine Environmental Data Information Referral System (IOC/IODE)
NEAR-GOOS	North East Asia Regional GOOS
NODC	National Oceanographic Data Centre (IOC/IODE)
NOP	National Oceanographic Programme (IOC/IODE)
OCEANIC	Ocean Information Center (USA)
ODAS	Ocean Data Acquisition System
ROSCOP	Report of Observations/Samples Collected by Oceanographic Programmes (IOC/IODE)
SG-MEDI	IODE Steering Group for MEDI
SGXML	Study Group on the Development of Marine Data Exchange Systems using XML (ICES-IOC)
WGMDM	Working Group on Marine Data Management (ICES)
WMO	World Meteorological Organisation
XML	Extensible Markup Language