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*Reports of Meetings of Experts and Equivalent Bodies*



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on Marine Information  
Management (GEMIM)**

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## 1. OPENING OF THE SESSION

The Chair of the Group, Ms Pauline Simpson, welcomed the participants to the Fifth Session of the IODE Group of Experts on Marine Information Management and expressed appreciation for the excellent support and assistance provided by the local hosts and by IOC.

Prof. Papanikolaou, President of the National Centre for Marine Research welcomed the participants.

## 2. ADMINISTRATIVE ARRANGEMENTS

The Chair invited comments on the provisional agenda (Document IOC/IODE-MIM-V/1 prov. rev). **The Group adopted** the agenda and timetable.

The Group designated Ms Heather Cameron and Mr Peter Pissierssens as rapporteurs for the session.

## 3. REPORT ON INTERSESSIONAL ACTIVITIES AND REQUIREMENTS FOR FOLLOW-UP

The Chair reported that since GEMIM-IV, the activities of the Group had been steadily maintained and stimulated by the rapid advances in information technology, especially the Internet, which has overwhelmed all thinking in the way information is presented and disseminated. She expressed appreciation for the participation of the Food and Agriculture Organization of the United Nations (FAO), the Coordinating Unit for the Mediterranean Action Plan of the United Nations Environment Programme (UNEP/MEDU), and Mr Murari Tapaswi from India. She hoped that participation by other United Nations agencies with activities related to the marine environment would continue and possibly even expand during future meetings of the Group.

Ms P. Simpson stressed the need for the Group to continue developing products serving the marine science community.

The Chair highlighted the recruitment of a Programme Specialist in charge of Marine Information Management (MIM) at the IOC Secretariat. This post is being filled with great energy and enthusiasm by Mr P. Pissierssens.

With regard to the implemented action items of GEMIM-IV, the Chair referred especially to the development of the IOC WWW Server as a new flagship product for which Mr. P. Pissierssens was to be congratulated. The IOC WWW Server will dramatically change ways in which marine information is disseminated and presented. She also expressed great appreciation for the joint efforts of the ASFA partners in establishing a new agreement securing the future of ASFA.

The Chair proceeded with a detailed report on the implementation of the GEMIM-IV Action Plan:

### 3.1 DEVELOPMENT OF A DIRECTORY OF TRAINING OPPORTUNITIES IN MIM

A paper was prepared by Ms Linda Temprosa (IOC/IODE-MIM/8) entitled '*Development of a directory of training opportunities in Marine Information Management*'. The conclusion of this paper is that a questionnaire needs to be developed with the objective of identifying institutions which provide training related to marine information management, because detailed data on such activities is currently not readily available.

**The Group agreed** that such information would be most valuable but needs regular updating. Accordingly, **the Group recommended** electronic publication of the directory as well as in the MIM Publication Series. It was suggested that the mailing lists of the Marine Science Contents Tables (MSCT) published by FAO and IOC, the IAMSILIC and IOC-NEWS listservs, and newsletters, be used to solicit input.

### 3.2 DRAFTING OF RECOMMENDATIONS WITH REGARD TO POSSIBLE OPTIONS FOR DEVELOPING COUNTRIES TO OBTAIN SCIENTIFIC LITERATURE

The Chair informed the Group that Mr Tapaswi had assumed responsibility for this Action, as Mr Y. Sankare had left his position. A paper was prepared by Mr Tapaswi entitled '*Acquisition of marine science literature in developing countries, problems and possible solutions*' (Document IOC/IODE-MIM-V/7).

The paper gives a comprehensive overview of the problems faced by developing countries in meeting the marine information needs of their scientists and lists common sources of accessible literature. It identifies problems and suggests solutions. Finally, it recommends actions such as national and regional cooperation to share available resources and holdings.

Discussion on this action item was deferred to Agenda Item 5.

### 3.3 STUDY OF ELECTRONIC COMMUNICATION SYSTEMS

A paper was prepared by Mr David Moulder (Document IOC/IODE-MIM-V/10) entitled '*Electronic networking : Internet Access for linking libraries with electronic mail and finding information and data*'.

The use of computers to link libraries with other computers around the world is described. Through electronic networks, it is possible to access data and information, to exchange messages, to obtain software, to join discussion groups, etc. Examples are given of aquatic libraries and information centres, and instructions are provided on how and where to access the various sources.

Discussion on this action item were deferred to Agenda Items 4, 5 and 7.

### 3.4 ESTABLISHMENT OF A GEMIM INTERNET MAILING LIST

IOC agreed to host a GEMIM listserv which would be called IOC-GEMIM.

### 3.5 DEVELOPMENT OF AN IOC CATALOGUE OF PUBLICATIONS AND

### 3.6 DEVELOPMENT OF AN IOC CD-ROM

The Technical Secretary reported that an IOC WWW Server was established in September 1995, and that the catalogue of IOC Publications in Stock was included under the menu item 'Services and Products'. He also said that a number of IOC publications were already available on-line in full-text.

**The Group noted** that the catalogue included 'in stock' publications only and stressed the importance of developing a definitive list. It was also noted that coverage of IOC publications in ASFA is incomplete. Mr M. Tapaswi offered to prepare ASFA input for missing publications.

Referring to the development of an IOC full-text infobase (information database) of publications, the Technical Secretary invited the other UN agencies to report on their activities on this subject. FAO reported briefly on developments of WAICENT (World Agriculture Information Centre), FAOSTAT and FAOINFO. UNEP/MEDU reported no full-text infobases.

With regard to full-text infobase file formats there was some experience in the Group with the TIFF4 for B/W text documents and Acrobat PDF format for combined text/imagery documents.

### 3.7 STUDY OF INFORMATION ANALYSIS PRODUCTS

**The Group recalled** previous discussions on this item during GEMIM-III and GEMIM-IV. During GEMIM-IV **the Group supported** the objectives of the project in general terms but, considering the substantial financial implications of the establishment of an International Global Centre on Marine Information, **the Group did not support** its adoption. **The GEMIM-IV Group** agreed that national and regional approaches to information analysis would better meet geographic and subject priorities. In this respect reference was made to initiatives by

the Pacific Islands Marine Resources Information System (PIMRIS), based in Suva, Fiji and by the International Center for Living Aquatic Resources Management (ICLARM) in Manila, Philippines.

**The Group stressed** the need for documenting and publicizing existing information analysis products through the IOC WWW Server and IOC-NEWS listserv.

There was discussion on the need for product comparison studies concerning scientific application software. It was said that merits and shortcomings of scientific software packages for different applications are often not documented. **The Group felt** that this issue should be referred to the IODE GE-TADE. **The Group was informed** of the FAO Fisheries Circular No. 900 entitled '*FAO fisheries software*', and of an ongoing survey by Elsevier Publishing on user-contributed oceanographic scientific software.

### 3.8 REVISION OF DIAGNOSTIC PROCEDURES

A paper was prepared by Mr D. Moulder and published in the MIM Publication Series (IOC Manuals and Guides No. 30, Vol. 1, 1994) as agreed during GEMIM-IV.

### 3.9 REVITALIZATION OF THE MEDI CATALOGUE

This action item was deferred to Agenda Item 7.1

### 3.10 PREPARATION OF A PROJECT PROPOSAL ON A JOINT PROJECT BETWEEN THE GROUP AND THE ASFA ADVISORY BOARD TO DEVELOP AN 'OFF THE SHELF' PRODUCT FOR THE MANAGEMENT OF BIBLIOGRAPHIC RECORDS

This action item was deferred to Agenda Item 8

### 3.11 REVISION OF THE STANDARD DIRECTORY STRUCTURE WITH REFERENCE TO THE CCF

A paper was prepared by Mr D. Moulder and published in the MIM Publication Series (IOC Manuals and Guides No. 30, Vol. 3, 1994) as agreed during GEMIM-IV.

### 3.12 DEVELOPMENT OF A STANDARD STRUCTURE FOR AN INTERNATIONAL DIRECTORY OF MARINE SCIENCE LIBRARIES AND INFORMATION CENTRES

A paper is being prepared by Mr D. Moulder in consultation with the International Association of Aquatic and Marine Science Libraries and Information Centres (IAMSLIC) but was not ready for discussion at the time of the Group's meeting.

### 3.13 DEVELOPMENT OF A STANDARD STRUCTURE FOR SERIAL HOLDINGS LISTS

**The Group agreed** that there is a need to develop a standard structure for Serial Holdings Lists to promote exchange of holdings data, especially within the framework of the development of national and regional library networks.

### 3.14 THESAURUS

**The Group was informed** that Elsevier Publishing will utilize the ASFIS Thesaurus in their *Oceanographic Literature Review*. The Chair agreed to request that publishers require authors to define keywords using the ASFIS Thesaurus. **The Group requested** that the ASFA Advisory Board ensure that the revised ASFIS Thesaurus be readily available to encourage scientists' compliance with supplying ASFIS keywords.

It was reported that the revision of the ASFIS Thesaurus is expected to be released in 1996.

The report on a project using the ASFIS Thesaurus as a key database for a semantic network was not ready at the time of the Group's meeting. Discussion on this item was deferred to the next Session.

3.15 MIM PUBLICATION SERIES

Discussions on future volumes were deferred to Agenda Item 7.

3.16 MONITORING OF FURTHER DEVELOPMENTS IN DOCUMENT DELIVERY OVER THE INTERNET

Two papers were prepared by Mr Peter Brueggeman (Documents IOC/IODE-MIM-V/15 and IOC/IODE-MIM-V/16).

It was noted that the ARIEL software, developed by the Research Libraries Group (RLG) is becoming a standard for document transmission over the Internet.

It was recalled that in 1994 a pilot project had been planned between PIMRIS and the Scripps Institution of Oceanography (SIO) (La Jolla, USA). However, due to lack of funds at PIMRIS the software was not acquired and the project has not been implemented. During the 1995 IAMS LIC Conference, the GEMIM Chair proposed the funding by IAMS LIC of the building of an ARIEL-based document delivery network benefiting developing countries through the provision of basic hardware and software. Kenya Marine and Fisheries Research Institute (KMFRI) (Mombasa, Kenya) and Centre de Recherches Océanologiques (CRO) (Abidjan, Côte d'Ivoire) were identified as candidates for the initial experiments. The proposal was submitted to the IAMS LIC Executive Board.

**The Group requested** the Chair to contact the IAMS LIC President to confirm the status of the proposal. National Institute of Oceanography (NIO) (Dona Paula, India) requested that NIO be included in the list of candidates for the preliminary experiments. IOC was asked to investigate the possibility of funding the acquisition of necessary software. It was noted that as a minimum, candidate institutions should have access to Internet mail.

With regard to copyright, **the Group agreed** that a watching brief should be maintained on developments in electronic copyright legislation as this will have an impact on electronic document delivery. Differences between legislation in various countries will further complicate the issue.

3.17 PREPARATION OF A REPORT ON THE INCORPORATION OF THE INFORMATION COMPONENT IN THE GTSPD CD-ROM

This action item was deferred to Agenda Item 7.

3.18 DEVELOPMENT OF A GLOBAL DIRECTORY OF INSTITUTIONS AND SCIENTISTS

This action was deferred to Agenda Item 7.

3.19 DEVELOP AN ASFA-MIM CDS/ISIS DATA ENTRY USER-FRIENDLY INTERFACE PROJECT FOR SUBMISSION TO THE ASFA ADVISORY BOARD FOR FUNDING FROM THE ASFA TRUST FUND

This action item was deferred to Agenda Item 8.

3.20 DEVELOPMENT OF A WORLDWIDE LIST OF MARINE INFORMATION RELATED NEWSLETTERS

A paper was prepared by Ms Janet Webster and Ms Pam Mofjeld (Document IOC/IODE-MIM-V/13) entitled '*Print and electronic tools for publicizing marine science information*'.

The paper provides information on newsletters, electronic resources such as listservs and usenet newsgroups, WWW servers, publication lists and directories of institutions and people. The authors acknowledge that it is not a definitive bibliography, but rather a starting point for information distribution.

**The Group recommended** that the initial list be made available via the IOC WWW Server and relevant listservs such as IAMS LIC and IOC-NEWS and that the marine science community be invited to submit additions. The resulting lists will be published in the MIM Publication Series and loaded on the IOC WWW Server.



## **Conclusions to the GEMIM-IV Action Plan report**

The Chair commended all experts, both within and outside the Group, who contributed to the implementation of the action plan.

### **4. NEW TECHNOLOGIES AND MIM: NEW CHALLENGES FOR MARINE INFORMATION MANAGEMENT**

The considerable volume of information and data made available to end users through the Internet constitutes both an opportunity and challenge to the MIM community. Although this explosive growth of information and data loaded on the Internet is definitely a gain for the end-user, its loose organization reduces its effectiveness for searching information. In this regard information on the Internet has been likened to 'a library with all books on the floor'.

It was agreed by the Group that the MIM community can make a positive contribution towards organizing marine information and data on the Internet through assisting in the development of WWW servers. The Group also said that the MIM community can assist end-users as 'guides on the information highway'. It was also said that the development of WWW servers should be a collaborative effort between scientists, computer experts, institutional management, public information experts and librarians.

Reference was made to the IOC WWW Server which intends to serve as a 'one-stop shop' for users seeking information and data on the marine environment. This includes links to individual member states through a 'first point of entry'. However, **the Group recommended** that efforts should be made to define a standard IOC Member State webpage structure to facilitate the easy browsing of the Member States' servers. See also Agenda Item 7.

**The Group discussed** the impact of new technologies on the role of the MIM community and agreed that the fundamental responsibilities had not changed and included:

- (i) identification, acquisition, organization, storage, retrieval and dissemination of information;
- (ii) training users in the utilization of information retrieval tools; and
- (iii) guiding users in information sources.

However, it was agreed also that the medium is changing and the MIM community must ensure its competence in the use of all available tools for mastering the new media.

### **5. IODE-MIM ACTIVITIES RELATED TO MEETING THE NEEDS OF DEVELOPING COUNTRIES**

A paper was prepared by Mr M. Tapaswi (Document IOC/IODE-MIM-V/7) entitled '*Acquisition of marine science literature in developing countries: problems and possible solutions*'.

The paper notes that acquisition of literature published in developed countries and within the country or region have different dimensions. Shortage of funds, foreign currency and bureaucratic structure within the country make it difficult to purchase literature published in developed countries. Works published in developing countries are not distributed and remain unnoticed. Knowledge about their availability is a fundamental problem.

A lot of useful material discarded in developed countries can find a home in developing country institutions. Many agencies are already working on donation programmes finding suitable recipients and covering shipping and management issues. Developing countries with core journal collections should be encouraged to provide low-cost document delivery services. It was estimated that this would cover 60% of the demand for literature. Remaining requests could be covered by document delivery services in developed countries.

The recommended solution for networking national and regional information resources is the Regional Cooperation in Scientific Information Exchange (RECOSCIX) model.

The author proposes, in order to increase the capacity of developing country libraries to purchase core journals, to establish an income generating mechanism whereby UN agencies and developed countries 'hire' the manpower and knowledge available in developing countries for labour-intensive projects. **The Group adopted Recommendation MIM-V.1.**

**The Group agreed** that the RECOSCIX model is very efficient in capturing the information published in developing countries where RECOSCIX projects are operating. It also assists considerably in obtaining photocopies of documents from developed countries. **The Group also agreed** that although outside assistance must be identified to establish marine information centre funds in developing countries, resources for their development and maintenance must be secured from the national governments themselves. **The Group concurred** with Mr Tapaswi that active canvassing for outside 'contracts' may be an appropriate way to supplement local funding.

The Group was presented with an overview of Internet access in developing countries (information available through the Internet on <http://www.ee.ic.ac.uk/misc/country-codes.html>) which showed that Internet email is now widely available in many developing countries but that full Internet access including WWW is not. **The Group therefore recommended** that the IOC information services provide alternate solutions for information dissemination through e-mail.

**The Group discussed** training methods such as on-site training, distance learning, computer learning packages and training videos, that could assist developing countries. **It concluded** that on-site training was preferable but it also might be possible to use the IOC WWW Server and listserv for distance learning to provide follow-up to workshops, training courses and other TEMA activities.

## 6. COOPERATION BETWEEN IOC AND OTHER ORGANIZATIONS IN RELATION TO MIM

The Chair recalled Recommendation MIM-IV.4 in which UN agencies involved in Marine Information Management activities were urged to participate in the Session and activities of the Group. She concluded that the recommendation had indeed been followed up, which was demonstrated by the participation of UNEP/MEDU and FAO.

### UNEP/MEDU

Mr Adnan Aksel thanked IOC for the kind invitation to UNEP/MEDU to participate in the GEMIM meeting and emphasized UNEP/MEDU's support for interagency cooperation and regular consultation on marine information management. He stated that the UN subject scope being multi-disciplinary in nature, required concrete objectives and commitments from all agencies. Furthermore, due to the rapidly changing technology, he suggested constant review of objectives, plans of action and *modus operandi*.

Mr A. Aksel provided an overview of the Long Term Pollution Monitoring in the Mediterranean (MEDPOL) Programme which was carried out as a joint effort of UNEP, FAO, WHO, WMO, IAEA and IOC.

Mr A. Aksel presented the core processing data activities of the UNEP/MEDU office in Athens: (i) computerization of the MEDPOL Mediterranean marine pollution data; (ii) scientific and statistical analysis of MEDPOL data; (iii) data mapping and presentation; (iv) desktop publishing; (v) Internet utilization; and (vi) office automation.

With regard to Internet, Mr A. Aksel noted that a draft homepage on the Mediterranean Action Plan (MAP) was developed in November 1995 by UNEP/MEDU data processing and presented to the UNEP/MEDU senior management and the directors of the six regional activity centres of MAP pending a decision on the matter. He added that UNEP/MEDU currently did not have an in-house WWW server and access to the Internet is operated through a commercial Internet provider.

Ms Athena Davaki provided information on the activities of the UNEP/MEDU Library. She pointed out that although the library is very small it provides a substantial service to countries within as well as outside the Mediterranean region. The library is a depository centre for marine science related to UNEP, UNESCO and IOC

publications. The library is also responsible for the distribution of the MAP Technical Report Series to a large number of libraries, institutions and individuals in and outside the region.

The library has developed several ISIS-based databases: (i) bibliographies on climate change, marine pollution by organotin and organophosphorous compounds, and marine litter; (ii) documents database: complete collection of reports and documents of MAP meetings; (iii) directory of Mediterranean marine centres and scientists; (iv) directory of non-governmental organizations cooperating with MAP.

## **FAO**

Mr Richard Pepe of FAO mentioned the plan by FAO to produce an electronic version of the FAO Fisheries Yearbook. He also made reference to the WAICENT project whereby statistics will be offered on-line.

## **Conclusions**

**The Group recommended** that the UNEP/MEDU bibliographies and other ISIS-based databases be loaded on the IOC WWW Server. Both IOC and UNEP/MEDU agreed to investigate the feasibility of this proposal.

**The Group stressed** the need for more coordination and information exchange among UN agencies with regard to marine science related publication and information services. **The Group recommended** that this issue should be given due attention by ICSPRO, and requested IOC and UNEP/MEDU to contact the appropriate marine information experts in their agencies.

## **7. DEVELOPMENT OF THE IODE-MIM SERVICES/PRODUCTS PROGRAMME**

### **7.1 ELECTRONIC INFORMATION SERVICES AND PRODUCTS**

#### **7.1.1 The IOC WWW Server**

The Technical Secretary described the IOC WWW Server. He referred to Document IODE-XV/9 entitled *'IOC's World Wide Web server & CD-ROM: New Technology for All'*. The IOC WWW Server is intended to provide end-users with information on the IOC objectives, its Member States, programmes, activities, services and products. He pointed out that this information is being developed and updated regularly.

He stated that the IOC WWW Server also aimed at providing a complete information service for end-users interested in marine sciences. The IOC Secretariat had invited Member States to identify a *'first point of entry'* WWW server in their country. The response had so far been limited.

He also reported that the IOC Secretariat offers to host homepages for Member States which currently do not have the necessary national infrastructure to establish their own webserver. This service may consist of loading html files developed by the Member State on the IOC server, or even full conversion of information provided by the Member State into html and loading on the server. So far this service is being provided to two Member States (Cameroun and Kenya).

Recently, as a complementary service to the webserver and as an alternate information source to non-WWW connected users, a listserv (**IOC-NEWS**) was developed. He reported that within one week nearly 200 subscribers were added.

**The Group identified** the IOC WWW Server as an important advance in the presentation of marine information. **The Group stressed** the importance for the continued maintenance and further development of this activity, and **adopted** Recommendation MIM-V.2.

### 7.1.2 Loading CDS/ISIS databases on the Internet

A paper was prepared by Dr. Egbert De Smet (Document IOC/IODE-MIM-V/17) entitled '*Putting CDS/ISIS databases on the World Wide Web: some possibilities*'.

The paper explained that it was possible to develop a system which allowed searching CDS/ISIS databases on the WWW using popular WWW client software such as Netscape Navigator. The server requires a CISIS programme, developed by the BIREME Institute, Brazil. He noted that the current price of the CISIS software is US\$ 250 but that the future distribution policy of this product is unclear.

Dr. E. De Smet demonstrated the system; the Group was very impressed with its capabilities. The Group concluded that the system constitutes a major step forward in offering a searchable database service for CDS/ISIS databases over the WWW and noted the multi-media possibilities of the system.

**The Group recommended** that the interface system be installed on the IOC WWW Server, and that available databases be loaded on the server as soon as possible.

### 7.1.3 Global Directory of Marine Science Institutions and Scientists

A paper was prepared by Mr D. Moulder (Document IOC/IODE-MIM-V/11) entitled '*Towards a Global Directory of Marine Organizations, Scientists and their Research Interests*'.

The paper provides a history of the International Directory of Marine Scientists. Three editions have been produced, the last in 1983. Since that time a number of national and regional directories have been prepared. The discussions within previous sessions of GEMIM are described, with particular reference to the development of a standard directory record structure format. Developments within Europe to prepare a European Directory are mentioned. A survey of potential users showed strong support for such a Directory. He also referred to the regional initiatives RECOSCIX-WIO and RECOSCIX-CEA which had or are in the process of developing regional directories (WIODIR and CEADIR) using the standard directory record structure as documented in MIM Publication Series Volume 3. The next steps towards a Global Directory are to encourage the preparation of more national and regional databases, utilizing the standard directory structure format. These databases can be merged to form a basis for the Global Directory.

**The Group endorsed** merging national and regional directories to create a global directory to be made available through the IOC WWW Server. In addition, a data entry form needs to be developed to enable other individuals to submit their personal data for inclusion in the directory. Traditional ways of canvassing input must also be considered. To serve Member States without access to the Internet, **the Group recommended** that the Directory be included in the IOC CD-ROM and in other media.

**The Group recommended** the development of a compact form for on-line data entry.

### 7.1.4 The MEDI Catalogue

The Chair referred to Document IODE-XV/8 entitled '*Future of the MEDI referral system*'. She concluded that although the objectives of MEDI were commendable, the product had not kept up with the advancements of technology.

Dr. E. De Smet reported that the third version of the catalogue had been converted to a CDS/ISIS database as recommended during GEMIM-IV. No further action had been taken on this agenda item. However, the Group noted that the WWW CDS/ISIS application (see Agenda Item 7.2) now enables loading of the Catalogue on the WWW.

During further discussions, it was noted that the strategy of a decentralized network of RNODCs gives catalogues such as MEDI new importance.

With regard to the evaluation to continue projects/products it was noted that the following criteria could be taken into consideration: (i) relevance of the product to the mandate of the organization; (ii) quality of the product; (iii) uniqueness of the product; and (iv) demand for the product.

In view of the changes in the data management policy, **the Group requested** the IODE Committee to provide guidance on the future development of the MEDI Catalogue.

### 7.1.5 Integration of data and information

#### THE GTSPD CD-ROM

**The Group noted** that the GTSPD CD-ROM has been produced as a product combining numerical data and information. The CD-ROM product is a joint project of GTSPD and GEMIM and includes full-text versions of all documents and meeting reports produced by GTSPD. Also included are CDS/ISIS databases that reference the ships that collected the GTSPD data, the scientists and other participants of the programme, and the documents included on the CD-ROM. The CDS/ISIS software is also included.

The databases have been developed on the standard record structure adopted by GEMIM. All temperature and salinity data processed by GTSPD have been included. Extraction and filtering software and the OceanPC application for analysis and display are also provided.

#### ASFA AND META-DATA

**The Group recommended** that the ASFA Advisory Board consider the inclusion of meta-data in the ASFA database. It was agreed that this would provide added value to the product by allowing scientists to identify the existence of data sets and location or source information on data used by an author.

**The Group requested** that the IODE Committee recommend to the scientific community that this information be included in their publications and that the Chair request that publishers obtain this information from authors.

## 7.2 PRINTED PRODUCTS

#### MIM PUBLICATION SERIES

The Chair reported that three separate issues have been produced in the MIM Publication Series, published as separate volumes in the IOC Manuals and Guides No. 30. She stated that the positive response to the MIM Publication Series by the user community has confirmed the need for the standard methods and tools in marine information management.

**The Group confirmed** that some of the working papers of this Session are suitable for publication in the series and identified documents 9, 10, 15 and 16 (as one publication on the Internet), 13 (after revision), and 17.

## 8. ASFIS/ASFA - STATUS AND FURTHER DEVELOPMENT

### 8.1 THE ROLE OF IODE-MIM IN THE DEVELOPMENT OF ASFIS/ASFA

**The Group recalled** its past recommendations and actions related to ASFA during the intersessional period after GEMIM-III which contributed to the negotiations towards a safeguarded future of ASFA.

**The Group reiterated** the role of the UN co-sponsors in ASFA. Co-sponsors are responsible for input related to their mandates. Mr R. Pepe reported that FAO will continue to carry out the ASFA Secretariat functions including activities related to expanding the ASFA Partnership.

IODE-MIM has repeatedly stressed the importance of ASFA as a tool essential for the development of marine science capacity. IOC contributes, through IODE-MIM and GEMIM, and as a member of the ASFA Advisory Board, to the development of ASFA to ensure that it continues to be a useful tool for capacity building in IOC Member States.

**The Group recommended** that IOC continue its capacity building activities in developing countries with a view to the establishment of new ASFA input centres to ensure improved coverage of marine scientific research in developing countries.

## 8.2 ASFISIS: TOWARDS THE DEVELOPMENT OF AN INTEGRATED MARINE BIBLIOGRAPHIC INFORMATION MANAGEMENT SYSTEM

Papers were prepared by Dr. E. De Smet (Document IOC/IODE-MIM-V/12) entitled '*Development of interfaces for data input and information retrieval for ASFISIS based on CDS/ISIS*' and by Mr. R. Pepe (Document IOC/IODE-MIM-V/18) entitled '*FAO report on ASFA*'.

Dr. E. De Smet demonstrated the user-friendly data entry and search interfaces. The Group congratulated Dr. E. De Smet and the ASFA Advisory Board on the interfaces. The Group noted that the provision of controlled authority lists (ASFIS authority lists) for fields such as corporate authors, subject descriptors, geographic descriptors, serial titles and ISSN would guarantee high quality ASFA data.

During the 1995 ASFA Advisory Board meeting, the Board agreed that IOC could distribute the ASFISIS software. However, the ASFA Secretariat will provide technical support to ASFA input centres only .

**The Group discussed** the potential development of ASFISIS as an integrated library management system. **The Group identified** circulation, acquisition and serials management, On-line Public Access Catalogue (OPAC) and cataloguing as essential components of a modern library management system. Currently, ASFISIS provides cataloging and OPAC capability only.

IODE-MIM wishes to provide its Member States with effective tools for marine information management. The Group discussed whether ASFISIS should be developed into a complete library management system.

**The Group agreed** that prior to making any recommendation on this issue, a study is needed to ascertain (i) which library software is being used in marine libraries around the world; (ii) what *ad hoc* developments using CDS/ISIS for library applications exist; and (iii) what plans UNESCO has with regard to Micro CDS/ISIS and related software.

## 9. THE YEAR 2000: AN IODE-MIM STRATEGY FOR THE NEW MILLENNIUM

**The Group**, taking account of the approaching millennium and the opportunities that new technologies are providing, **conducted** a brainstorming session to formulate a strategy for GEMIM. Stimulated by such questions as 'where should our energy and resources be focussed and what should GEMIM's thrust be', **the Group considered** the following:

- management of electronic information
- electronic document delivery
- electronic publishing
- GIS impact/ multimedia
- searching multiple databases using Z-39.50
- developments in hardware and software, e.g., Internet
- virtual library
- ASFA as a union catalogue and interlibrary lending tool for marine information
- ASFA developments
- distributed collection development
- Global Directory
- charging
- standards
- skill sets for marine science librarians

**The Group recommended** that the above be used as a basis to produce a strategy document.

#### **10. PREPARATION OF THE MARINE INFORMATION MANAGEMENT ACTION PLAN FOR THE NEXT INTERSESSIONAL PERIOD**

**The Group adopted** Recommendation MIM-V.3 which includes actions to be taken in the next intersessional period in accordance with identified priorities and responsibilities.

**The Group requested** the Chair and the Technical Secretary to monitor the implementation of the Action Plan in consultation with Group members.

#### **11. ELECTION OF THE CHAIR OF THE GROUP**

The Technical Secretary informed the meeting of the IOC procedure for the election of a Chair of subsidiary bodies and invited the Group to give the names of candidates. **The Group unanimously reelected** Ms Pauline Simpson as Chair of the Group.

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

**The Group suggested** that the next Session of the Group be scheduled in 1998 and **recommended** that the date be linked to an event increasing the visibility and impact of the Group's activities.

#### **13. OTHER BUSINESS**

No items were tabled under this Agenda item.

#### **14. ADOPTION OF THE SUMMARY REPORT**

**The Group adopted** the draft summary report of its Fifth Session. **The Group instructed** the Technical Secretary and the Group's Chair to carry out the necessary editing and corrections when processing the final version.

#### **15. CLOSURE OF THE MEETING**

The Chair expressed the Group's appreciation to the local organizers for their superb assistance and hospitality. She referred especially to Dr. E. Papathanassiou, Dr. E. Balopoulos, Ms Sofia Goulala, Ms Evangelia Charon and others.

The Chair closed the meeting on Friday 19 January 1996 at 14h40.

ANNEX I

**AGENDA**

- 1. OPENING OF THE MEETING**
- 2. ADMINISTRATIVE ARRANGEMENTS**
- 3. REPORT OF INTERSESSIONAL ACTIVITIES AND REQUIREMENTS FOR FOLLOW-UP**
- 4. NEW TECHNOLOGIES AND MIM: NEW CHALLENGES FOR MARINE INFORMATION MANAGEMENT**
- 5. IODE-MIM ACTIVITIES RELATED TO MEETING THE NEEDS OF DEVELOPING COUNTRIES**
- 6. COOPERATION BETWEEN IOC AND OTHER ORGANIZATIONS IN RELATION TO MIM**
- 7. DEVELOPMENT OF THE IODE-MIM SERVICES/PRODUCTS PROGRAMME**
  - 7.1 ELECTRONIC INFORMATION SERVICES AND PRODUCTS
  - 7.2 PRINTED PRODUCTS
- 8. ASFIS/ASFA – STATUS AND FURTHER DEVELOPMENT**
  - 8.1 THE ROLE OF IODE-MIM IN THE DEVELOPMENT OF ASFIS/ASFA
  - 8.2 ASFIS : TOWARDS THE DEVELOPMENT OF AN INTEGRATED MARINE BIBLIOGRAPHIC INFORMATION MANAGEMENT SYSTEM
- 9. THE YEAR 2000: AN IODE- MIM STRATEGY FOR THE NEW MILLENIUM**
- 10. PREPARATION OF THE MARINE INFORMATION MANAGEMENT ACTION PLAN FOR THE NEXT INTERSESSIONAL PERIOD**
- 11. ELECTION OF THE CHAIR OF THE GROUP**
- 12. DATE AND PLACE OF THE NEXT SESSION**
- 13. OTHER BUSINESS**
- 14. ADOPTION OF THE SUMMARY REPORT**
- 15. CLOSURE OF THE MEETING**



## ANNEX II

### RECOMMENDATIONS

<b>Code</b>	<b>Title</b>
Recommendation MIM-V.1	DEVELOPMENT OF REGIONAL INFORMATION NETWORKS
Recommendation MIM-V.2	THE FURTHER DEVELOPMENT OF THE IOC WORLD WIDE WEB SERVER
Recommendation MIM-V.3	ACTION PLAN OF THE GROUP FOR 1996 - 1998

### **Recommendation MIM-V.1**

#### **DEVELOPMENT OF REGIONAL INFORMATION NETWORKS**

The IODE Group of Experts on Marine Information Management,

**Acknowledging** that Marine Information is an important resource of which the rational management is indispensable for understanding the ocean and for the sustainable management of its resources,

**Noting** the recommendations made during UNCED for the encouragement of subregional, regional or global cooperating mechanisms and networks,

**Taking into consideration** the useful experience gathered through the RECOSCIX-WIO regional network,

**Noting** the request of the IOCEA region during its Third and Fourth Session to develop a regional marine information network,

**Requests** the IOC Executive Secretary and **urges** IOC Member States to seek and provide the necessary funds to enable the development of a regional information network in the IOCEA region including relevant human and infrastructure capacity building;

**Further requests** the IOC Executive Secretary and **urges** IOC Member States to assist in the development of national or regional information exchange networks where IOC Member States have identified the need.

### **Recommendation MIM-V.2**

#### **THE FURTHER DEVELOPMENT OF THE IOC WORLD WIDE WEB SERVER**

The IODE Group of Experts on Marine Information Management,

**Acknowledging** the importance of efficient and global dissemination of information,

**Noting** the increasing role of the Internet as a tool for data and information dissemination,

**Noting with appreciation** the efforts undertaken to establish an IOC WWW server,

**Requests** the IOC Executive Secretary and **urges** IOC Member States to ensure the availability of sufficient resources at the IOC Secretariat for the continued maintenance and development of the IOC WWW server;

**Further requests** the IOC Member States to establish national WWW information servers with an 'IOC webpage' and appropriate pointers to national institutions.

### Recommendation MIM-V.3

#### ACTION PLAN OF THE GROUP FOR 1996 - 1998

The IODE Group of Experts on Marine Information Management,

**Having reviewed** its completed and ongoing activities,

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

**Adopts** a plan of action for the intersessional period 1996-1998 as given in the Annex to this Recommendation.

#### Annex to Recommendation MIM-V.3

##### MIM ACTION PLAN FOR 1996-1998

ACTION		Responsibility	Date due	Agenda Item
1.	Preparation of a directory of training opportunities in MIM			<b>3.1</b>
1.1	loading of the preliminary list on the IOC WWW server and ioc-news listserv	IOC	3/96	
1.2	compilation of received inputs and addition to the WWW list	IOC	ongoing	
1.3	publication of the list in MIM publication series	IOC	12/96	
2.	Setting up of a GEMIM listserv called IOC-GEMIM	IOC	2/96	<b>3.4</b>
3.	Assisting the IOC Secretariat in the development of a full catalogue of IOC publications	M. Tapaswi, IOC		<b>3.6</b>
3.1	revise IOC records currently in ASFA		9/96	
3.2	prepare bibliographic records including abstracts of IOC publications currently not in ASFA		9/96	
3.3	investigate the possibility to OCR scan historical IOC publications		4/96	
4.	Request publishers to ask their authors to define keywords using the ASFISIS thesaurus	P. Simpson	3/96	<b>3.14</b>
5.	Report on a Semantic network using the ASFIS Thesaurus as a key database in a semantic network	C. Watts	4/96	<b>3.14</b>

	<b>ACTION (continued)</b>	<b>Responsibility</b>	<b>Date due</b>	<b>Agenda Item</b>
6.	ARIEL document delivery			<b>3.16</b>
6.1	report on the status of the ARIEL document delivery project	IAMSLIC	5/96	
6.2	Implementation of an ARIEL experiment	IOC, IAMSLIC	6/97	
7.	Monitoring of developments in electronic copyright legislation and reporting to the Group at a regular basis	GEMIM	ongoing	<b>3.16</b>
8.	Loading of relevant UNEP-MEDU bibliographies & Mediterranean directory WWW server	IOC, on the IOC	9/96 UNEP/MEDU	<b>6</b>
9.	Report on coordination of information exchange between ICSPRO agencies	IOC, FAO, UNEP/MEDU	12/96	<b>6</b>
10.	Definition of standard IOC webpage structure for Member State IOC page	IOC, GEMIM	4/96	<b>7.1.1</b>
11.	Installation of the CDS/ISIS WWW search interface on the IOC WWW server and loading of databases	IOC, E. De Smet	7/96	<b>7.1.2</b>
12.	Development of the Global Directory of Marine Institutions and Scientists			<b>7.1.3</b>
12.1	loading of existing national and/or regional directories on the IOC WWW server		IOC	1/97
12.2	development of a compact form for on-line IOC data input by individuals		1/97	
12.3	including the Directory on the IOC CD-ROM	IOC	12/97	
13.	MIM Publication Series	IOC, GEMIM	ongoing	<b>7.2</b>
14.	Undertake a study with regard to the development of ASFISIS into an integrated library management system.			<b>8.2</b>
14.1	survey of library software being used in marine libraries around the world	H. Cameron	6/96	
14.2	report on <i>ad hoc</i> developments using CDS/ISIS for library applications	E. De Smet	6/96	
14.3	report on future plans of UNESCO with regard to Micro CDS/ISIS and other ISIS-based developments	E. De Smet	6/96	
15.	Development of a MIM strategy for the future	P. Simpson,	7/96	<b>9</b>

ANNEX III

**LIST OF PARTICIPANTS**

**1. MEMBERS OF THE GROUP**

Ms. Heather CAMERON (Co-Rapporteur)  
Librarian  
Dept. of Fisheries and Oceans  
10th Floor, 200 Kent Street  
Ottawa, Ontario K1A 0E6  
CANADA  
Tel: [1](613)993 2926  
Fax: [1](613)996 9055  
Email: heather.cameron@ncr.ottwpo.dfo-mpo.x400.gc.ca

Ms. Pauline SIMPSON (Chair)  
Head of Information Services  
Southampton Oceanography Centre  
Empress Dock  
Southampton SO14 3ZH  
UNITED KINGDOM  
Tel: [44](1703)596111  
Fax: [44](1703)596115  
Email: pauline.simpson@soc.soton.ac.uk

Mr. Murari TAPASWI  
Librarian  
National Institute of Oceanography  
Dona Paula, Goa 403 004  
INDIA  
Tel: [91](832)226 253  
Fax: [91](832)223 340  
Email: murari@bcgoa.ernet.in

**2. OBSERVERS FROM MEMBER STATES**

Dr. Egbert DE SMET  
University of Antwerp  
I B W  
Universiteitsplein 1  
2610 Wilrijk  
BELGIUM  
Tel: [32](3)820 28 56; [32](3)820 28 57  
Fax: [32](3)820 22 47  
Email: desmet@gins.uia.ac.be

Ms. Sofia GOULALA  
National Centre for Marine Research  
Dept. of Library, Documentation and Information Management  
Ag. Kosmas  
GR-166 04 Elliniko  
Athens  
GREECE  
Tel: [30](1) 965 35 20  
Fax: [30](1) 965 35 22

Ms. E. CHAROU  
National Centre for Marine Research  
Dept. of Library, Documentation and Information Management  
Ag. Kosmas  
GR-166 04 Elliniko  
Athens  
GREECE  
Tel: [30](1) 965 35 20  
Fax: [30](1) 965 35 22

Dr. J.R. WILSON                      **(Chair, IODE Committee)**  
Marine Environmental Data Service  
Department of Fisheries and Oceans  
200 Kent Street  
Ottawa, Ontario K1A 0E6  
CANADA  
Tel: [1](613) 990 02 64  
Fax: [1](613) 990 55 10  
Email: wilson@ottmed.meds.dfo.ca

### **3. REPRESENTATIVES FROM INTERNATIONAL AND OTHER ORGANIZATIONS**

#### **FAO**

Mr. Richard PEPE  
Fishery Information Officer  
Food and Agriculture Organization  
Via delle Terme di Caracalla  
00100 Rome  
ITALY  
Tel: [39](6) 52251  
Fax: [39](6) 522 53020  
Email: Richard.Pepe@fao.org

**IAMSLIC**

Ms. Natalie WIEST  
President IAMSLIC  
Texas A&M University at Galveston  
Jack K. Williams Library  
P.O. Box 1675  
Galveston, Texas 77553-1675  
UNITED STATES  
Tel [1](409)740 4567  
Fax [1](409)740 4702  
Email: wiestn@tamug3.tamu.edu

**UNEP/MEDU**

Mr. Adnan AKSEL  
Computer Operations Officer  
UNEP - Coordinating Unit for the Mediterranean Action Plan  
48 Vas. Konstantinou  
11610 Athens  
GREECE  
Tel: [30](1) 725 31 90-5  
Fax: [30](1) 725 31 96-7  
Email: unepmedu@compulink.gr ; meduunep@compulink@gr

Ms. Athena DAVAKI  
Librarian/ Consultant  
UNEP - Coordinating Unit for the Mediterranean Action Plan  
48 Vas. Konstantinou  
11610 Athens  
GREECE  
Tel: [30](1) 725 31 90-5  
Fax: [30](1) 725 31 96-7  
Email: unepmedu@compulink.gr ; meduunep@compulink@gr

**4. IOC SECRETARIAT**

Mr. Peter PISSIERSSENS (Technical Secretary and Co-Rapporteur)  
Programme Specialist  
Intergovernmental Oceanographic Commission (of UNESCO)  
1, rue Miollis  
75732 Paris Cedex 15  
FRANCE  
Tel [33](1) 45 68 40 46  
Fax [33](1) 40 56 93 16  
Email: p.pissierssens@unesco.org

## ANNEX IV

**LIST OF DOCUMENTS<sup>1</sup>**

<b>Document Code</b>	<b>Title</b>	<b>Agenda Item</b>
IOC/IODE-MIM-V/1	Agenda	2
IOC/IODE-MIM-V/1 Add.	Timetable	2
IOC/IODE-MIM-V/2	Annotated Provisional Agenda	3
IOC/IODE-MIM-V/3	Summary Report	14
IOC/IODE-MIM-V/4	List of Documents	2
IOC/IODE-MIM-V/5	List of Participants	2
IOC/IODE-MIM-V/6	Intersessional Report with Recommendations Adopted by IOC Governing and Regional Bodies relevant to MIM	3.1
IOC/IODE-MIM-V/7	Acquisition of Marine Science Literature in Developing Countries: Problems and possible solutions	5
IOC/IODE-MIM-V/8	Development of a Directory of Training Opportunities in Marine Information Management	5
IOC/IODE-MIM-V/9	IOCs World Wide Web Server & CD-ROM: New Technology for all	7.1
IOC/IODE-MIM-V/10	Electronic Networking – Internet Access for Linking Libraries by Electronic Mail and for Finding Information and Data	4
IOC/IODE-MIM-V/11	The Global Directory of Marine Institutions & Scientists	7.2
IOC/IODE-MIM-V/12	ASFISIS: a user-friendly package for the management of bibliographic information	8.2
IOC/IODE-MIM-V/13	Print and Electronic Tools for the Publication of Marine Science Information	3.1
IOC/IODE-MIM-V/14	Regional Co-operation in Scientific Information Exchange (RECOSCIX) – A review of RECOSCIX-WIO and its Importance to National and Regional Initiatives	5

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This list is for reference only. No stocks of these documents are maintained, except for the Summary Report.



Document Code	Title	Agenda Item
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IOC/IODE-MIM-V/15	Document Delivery over the Internet	4, 5
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IOC/IODE-MIM-V/16	Some reflections on copyright, electronic media and Document Delivery over Internet	4,5
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## INFORMATION AND OTHER REFERENCE DOCUMENTS

IOC/IODE-MIM-V/Inf. 1	Information on Arrangements and Services Available for the Session
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IOC/IODE-XV/8	Future of the MEDI Referral System
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IOC/IODE-MIM-I/3	Summary Report of the IODE Group of Experts on Marine Information Management, First Session (Rome, 19–23 November 1984)
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IOC/IODE-MIM-II/3	Summary Report of the IODE Group of Experts on Marine Information Management, Second Session (Moscow, 8–9 December 1986)
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IOC/IODE-MIM-III/3	Summary Report of the IODE Group of Experts on Marine Information Management, Third Session (Wormley, United Kingdom, 27–30 April 1992)
--------------------	---

IOC/IODE-MIM-IV/3	Summary Report of the IODE Group of Experts on Marine Information Management, Fourth Session (Washington DC, USA, 6–9 October 1993)
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IOC MANUALS AND GUIDES 30, Vol. 1	Report on Diagnostic Procedures and a Definition of Minimum No. Requirements for Providing Information Services on a National and/or Regional Level
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IOC MANUALS AND GUIDES No. 30, Vol. 2	Information Networking: The Development of National or Regional Scientific Information Exchange
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IOC MANUALS AND GUIDES No. 30, Vol. 3	Standard Directory Structure for Organizations, Individuals and their Research Interests
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---	Putting CDS/ISIS databases on the World Wide Web: some possibilities (submitted by E. De Smet)
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---	FAO Report on ASFA (submitted by R. Pepe)
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