The Action Paper will be the main working document for the 21st Session of the IOC Committee on IODE. It includes (i) the draft introductory text that will be used for the summary report of the Meeting; (ii) (in yellow text boxes) the decisions requested from the Committee; (iii) draft recommendations and resolutions; and (iv) resource requirements. Regarding resource requirements it is noted that in Annex I a summary overview is provided of financial requirements for the period 2011-2013.

Participants in the Session are requested to carefully read the Action Paper as well as other working documents and prepare for short plenary interventions prior to the Session.

Conserve nature: Participants are requested to bring their personal set of documents (electronic or paper) as no printed copies will be available at the venue.
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ANNEXES

ANNEX I: SUMMARY TABLE OF RESOURCE REQUIREMENTS IDENTIFIED IN THE IODE-XX WORKING DOCUMENTS
1. **OPENING**

Dr Malika Bel-Hassen Abid and Mr Greg Reed, Co-Chairs of the IOC Committee on International Oceanographic Data and Information Exchange (IODE) will welcome the participants to the Twenty-first Session of the IODE Committee at 09:00 on Wednesday 23 March 2011.

The Meeting will then be addressed by the representatives of the local hosts.

2. **ADMINISTRATIVE ARRANGEMENTS**

2.1 **ADOPTION OF THE AGENDA**

The Committee will be invited by the Technical Secretary, Mr Peter Pissierssens, to review and adopt the provisional agenda (**Document IOC/IODE-XXI/1 prov.**). The Committee will be requested to note that all working documents are now only available as online documents. Any new items or issues should be proposed by the Meeting will be noted here and discussed either under the related Agenda Item or under Agenda Item 11.

**ACTION:** review and adopt Agenda.

2.2 **DESIGNATION OF A RAPPORTEUR**

The Committee will be invited to elect a Rapporteur for the Session. It will be recalled that for the past three sessions the Secretariat was tasked to report on the meeting and that no rapporteur was used.

**ACTION:** elect Rapporteur if needed

2.3 **SESSION TIME TABLE AND DOCUMENTATION**

The Committee will be invited to review and adopt the Timetable (**Document IOC/IODE-XXI/1 Add. Prov.**)

The IODE Technical Secretary (Mr Peter Pissierssens) will then review the arrangements for the Session and present **Document IOC/IODE-XXI/4 prov. (List of Documents)** available on line through [http://www.iode.org/iode21](http://www.iode.org/iode21)

He will then inform the Committee about the working hours for the Session and other details relevant to the conduct of the Session. He will remind the Committee that this Session has only 3 working days to deal with the substance of the meeting as compared with 4 during the previous Session. Accordingly there will be no time for extensive introductions of agenda items and participants are urged to carefully read the Action Paper and working documents in preparation for the Session.

**ACTION:** review and adopt Timetable
2.4 ESTABLISHMENT OF SESSIONAL WORKING GROUPS

The Technical Secretary will invite the Committee to establish sessional working groups. Suggested groups include:
(i) Sessional working group on work plan and budget;
(ii) Sessional working group on capacity building requirements.

The Technical Secretary will remind the Committee that participants had been invited (by email) to identify the need for additional sessional working groups by email, prior to the Session (deadline 1 March 2011). He will inform the Committee of received suggestions.

He will remind the Committee that each Sessional Working Group should nominate a Chair who will report back to the Committee at the time the relevant agenda item is discussed in plenary. In exceptional circumstances the Committee may decide to re-arrange the timetable to accommodate a sessional working group.

**ACTION: establish sessional working groups**

2.5 LOCAL ARRANGEMENTS

Information and guidelines for participants were made available through the IODE-XXI web site [http://www.iode.org/iode21](http://www.iode.org/iode21).

The representative of the local host institutions will inform the Committee on local arrangements including social events and possibilities for tourist excursions.

3. INTRODUCTORY REPORTS

Under this agenda item reports will be presented that provide an overall overview of the IODE system, its activities and implementation of the programme at the national, regional and global levels.

3.1 CO-CHAIR'S REPORT

The two Co-Chairs will present their report on inter-sessional activities.

**ACTION: none**

3.2 IMPLEMENTATION STATUS OF THE IODE-XX WORK PLAN

This Agenda item will be introduced by the Technical Secretary, referring to Document IOC/IODE-XXI/7 (Implementation Status of the IODE-XX Work Plan) and Document INF-1272 (2010 Officers Meeting: Summary Report). He will recall that the IODE-XX Action Sheet was reviewed during the IODE Officers Meeting that took place at the IOC Project Office for IODE between 8-11 March 2010. The Officers had made a comprehensive review of the status of the implementation of the action plan at that time and had recommended remedial actions for incomplete action items. Mr Pissierssens will report that nearly all action items of the work plan have been implemented and that, in response to
emerging issues a number of new action items had been implemented.

**ACTION: The Committee will be invited to provide guidance on action to take regarding action items that were not implemented.**

### 3.3 FINANCIAL AND IN-KIND CONTRIBUTION REPORT

This agenda item will be introduced by the Technical Secretary. He will report that IODE received US$ 195,900 (including US$ 10,000 for OBIS) for the biennium 2010-2011 and has continued to receive substantial extra-budgetary funding during the inter-sessional period 2009-2011. However he will note that, again, most of the extra-budgetary funding was received from a single Member States (Government of Flanders, Kingdom of Belgium) either through the UNESCO/Flanders Fund-in-Trust for the support of UNESCO's activities in the field of Science (FUST) or through the IOC Project Office for IODE (Oostende, Belgium). Additional support was received (as was the case in the previous inter-sessional period) from the European Commission through IODE’s participation in the CASPINFO and UBSS projects. Unfortunately it was not possible to resolve the administrative issues between UNESCO and the European Commission resulting in the termination of funding for IODE from the SeaDataNet project. Cooperation with WMO through JCOMM has continued and was further expanded thereby enabling the pooling of financial and human resources for the further development of JCOMM and IODE/JCOMM activities (see also Agenda Items 6 and 9.2). The adoption of OBIS by IODE has resulted in additional revenue from several Member States, earmarked for OBIS. This will be further covered under Agenda Item 5.

For the next inter-sessional period the level of extra-budgetary support contributed by Flanders will be largely maintained: the currently ongoing large-scale projects (ODINAFRICA, OceanTeacher Academy, Caribbean Marine Atlas) will continue until December 2013. The Technical Secretary will also note that two professional positions (IT developer and Regional Activities coordinator) are currently being funded through FUST activities and this will also end in December 2013. The Technical Secretary will inform the Committee on the decision by the Government of Flanders to continue support of the Oostende Office (see also Agenda Item 4.2.1).

The Government of Flanders has indicated that no additional phase of ODINAFRICA will be supported. The CASPINFO and UBSS projects will end in 2011. IODE has been invited to collaborate in the SeaDataNet-II project as a sub-contractor. At the time the Action Paper was prepared no information was available on the status of approval of the SeaDataNet-II proposal which was submitted to the European Commission.

Additional information of confirmed and expected financial allocations for IODE is provided under Agenda Item 12.

The Technical Secretary will again express concern about the limited number of donors contributing to IODE. It was noted that many Governments are going through a period of austerity and budget cuts following the recent financial crisis. This can be expected to have a negative impact on supporting international organizations and their activities including IODE. This period of austerity may well continue throughout the next inter-sessional period 2011-2013. IODE will therefore, more than ever, need to prioritize its activities to core objectives that have a long-term impact.

The Technical Secretary will recall that IOC Member States, through the IODE
national coordinators, were invited to second staff to the IOC Project Office for IODE. It will be reported that no secondments were offered between 2009-2011.

**ACTION:** the Committee will be requested to:
- Consider ways and means to provide staff support to the IODE Secretariat
- Consider ways and means to expand the donor base of IODE

### 3.4 INTRODUCTION TO WORK PLAN AND BUDGET

This Agenda Item will be introduced by Mr G. Reed, IODE Co-Chair, referring, *inter alia*, to [Document IOC/IODE-XXI/8 (Financial and in-kind contribution report/Introduction to Work Plan and Budget)](#). He will also provide a brief presentation outlining the budget requests that have been included in the substantive working documents referring to Annex I to the Action Paper.

### 4. NODC AND PROJECT OFFICE REPORTS

#### 4.1 REPORTS OF NODCs, DNAs AND MARINE INFORMATION CENTRES

This Agenda item will be introduced by Mr. Robert Gelfeld, Consultant, referring to [Document IOC/IODE-XXI/9 (Report on activities of the NODCs and DNAs)](#). The Secretariat revised the national report format to encompass an online survey (one for Data Management and one for Marine Information Management) as prepared for IODE-XX and was modified slightly to reflect changes during the intercessional period for 2009-2010. These surveys have allowed the Secretariat to obtain more quantitative information that would enable it to identify trends at the national level, as well as questions to identify capacity building and general IODE programme needs.

Mr. Gelfeld will report that for IODE-XXI fifty-seven National Reports were received for Data Management and thirty-one reports for Marine Information. This is a slight decrease from reports submitted for IODE-XX and continues a low trend of response for the online surveys. Member States will be encouraged to reflect on why there continues to be a limited response to the online surveys from the overall IODE community.

The majority of Member States reported that they are an IODE national oceanographic data centre (NODC) and are evenly split between being a centralized (single) and distributed (multiple) centre. An overwhelming number now provide their services online and the majority of Member States have a metadata catalogue. Most receive data from government and academic agencies and a smaller proportion also receive data from privately funded research institutions and/or from industry. Most Member States have a documented data strategy and apply the 'IOC Oceanographic Data Exchange Policy’. This includes the timely, free and unrestricted international exchange of oceanographic data and associated metadata.

The Data Centres maintain a well-rounded staff and a majority of the Member States have seen an increase in budget and working staff or remained the same. Travel and training resources for most centres are critical to benefit from membership in IODE primarily through the contacts in other centres and the experience they share. There continues to be inconclusive information to analyze the annual operational budget for data centres (excluding staff cost) [converted into US Dollars], though the majority of Member States have indicated that it has remained the same or slightly increased. Member States will be encouraged to comment on
how a revised series of budget questions should be included in future surveys.

27 The Member States continued to collect and archive all types of oceanographic data and more of these data are available online. The majority have a discovery metadata catalogue and there continues the trend to make this available online. The range of data types handled by Member States include: physical, chemical, biological, marine meteorology and atmospheric data, geological and geophysical data and most data centres process delayed-mode data along with some real-time data. Access to real-time data and GIS are increasing throughout the community.

28 All Member States agreed that quality control should be a priority including reviewing and revising existing manuals where appropriate. A limited number of Member States continue to provide data to WDCs Oceanography. A clarification on the future of the WDCs will be discussed in IODE-XXI 9.5 Cooperation with ICSU.

29 Member States continue to increase their role in IODE activities including participation in JCOMM/ETDMP, OBIS, OceanPortal, the Standards Project and other IODE programmes (i.e. GE-BICH, GE-MIM, GODAR, GOSUD and MARINE XML). There is also active participation in SeaDataNet, CLIVAR and other major science programmes.

30 Results from the Marine Information survey show that a majority of information centres are research institution libraries have seen an increase in online users and number of requests for 2009-2010. There has been an increase in the digitization of data and the preservation of data. They participate fully in IODE Global activities and have increased their participation in OceanDocs and OceanExpert. There has been a dramatic increase and demand in online products.

31 The IODE capacity building strategy implemented through the ODINAFRICA and ODINCARSA projects had substantially increased the capacity of the participating countries as reflected in the national reports. The newer ODIN programmes (ODINCINDIO, ODINECET, ODINWESTPAC, and ODINBLACKSEA) continue to develop. Many Member States have hosted scientists and data managers from IODE data centres that have been mutually beneficial and have participated in IODE training courses.

32 Participation in OceanExpert is now at all time high. Member States are encouraged to increase their participation in IODE training through OceanTeacher by attending courses and volunteering experts for training.

33 Support for providing direct financial support to IODE in 2009-2010 through the IOC (confirmed) and sending a visiting expert to the IOC Project Office for IODE in 2009-2010 for a period of 3-12 months continue to be low due to the uncertain budget situations in throughout the IODE community. Member States are encouraged to provide extra-budgetary funds to support IODE activities.

**ACTION: The Committee will be invited to comment on the report**

4.2 REPORT OF THE IOC PROJECT OFFICE FOR IODE

4.2.1 Renewal of the MoU for the IOC Project Office for IODE

34 This Agenda Item will be introduced by the Technical Secretary referring to
Document IOC/IODE-XXI/42 (Renewal of the MoU between the Government of Flanders and IOC regarding the IOC Project Office for IODE, Oostende, Belgium).

35 It will be recalled that the IOC Project Office for IODE was established through Resolution XXII-7 (INTERNATIONAL OCEANOGRAPHIC DATA AND INFORMATION EXCHANGE (IODE)) (2005) which endorsed Recommendation IODE-XVII.4 “Establishment of the IODE project Office” (2003). It is noted that, as part of the recommendation to the IOC Assembly a business plan was prepared (INF-1187: IODE Project Office – Business Plan). The MAIN GOALS of the IODE Project Office have been defined as follows:
(i) to establish an operational unit facilitating the further development and maintenance of IODE and partner data and information management Projects, services and products with emphasis on improving the efficiency and effectiveness of the data and product/service stream between the stage of sampling and the user; and
(ii) to assist in strengthening the capacity of Member States to manage oceanographic data and information and to provide ocean data and information products and services required by users.

36 The UNESCO/IOC Project Office for IODE was officially inaugurated on 26 April 2005. It is noted that the procedure to establish the Project Office was in compliance with “Guidelines for the Establishment of IOC Decentralised Offices” adopted by the IOC Assembly during its twenty-second Session and published as Document IOC/INF-1193. In order to formalize the hosting of the Office by Belgium a Host (Seat) Agreement was signed between UNESCO and the Government of Belgium. In addition a Memorandum of Understanding was signed between the Flanders Marine Institute (VLIZ) – representing the Government of Flanders - , and the IOC. The MOU came into effect on 1 January 2006 and was set to terminate after a period of four years, on 31 December 2009.

37 It was planned to submit the recommendation for renewal of the MoU to IODE-XX May 2009) and subsequently to the forty-third Session of the IOC Executive Council (June 2010). Unfortunately this was not possible as the Government of Flanders had not yet approved the continuation of funding for the period 2010-2014.

38 The Committee will be invited to submit the request for renewal of the MoU to the 26th Session of the IOC Assembly (June-July 2011), in accordance with IOC/INF-1193. Document IOC/IODE-XXI/42 details the compliance of the request with the requirements detailed in IOC/INF-1193.

39 The Committee will be invited to consider the continuation of the Office as a ”Project Office” or “Programme Office”. In this regard the definitions of each Office are listed here:
- The main purpose of an IOC Project Office is to administratively and technically underpin projects that have specific objectives, clearly defined deliverables and a predetermined duration. The Project Office should be seen as a flexible mechanism to support the implementation of projects in the field.
- An IOC Programme Office shall be established to assist in the implementation of an IOC Programme. A programme is defined as an activity with a long-term strategy and objectives (as detailed in a UNESCO C/5 Main Line of Action). A Programme Office will mainly be tasked with the decentralised management of a Programme, and can be established to assist with the regional implementation of the Programme.

40 Taking into account that the Oostende Office is tasked with the implementation of the IODE Programme and that this is an activity with a longterm strategy and objectives, the
The Committee will be invited to consider Recommendation IODE-XXI.1 as detailed below.

**DRAFT RECOMMENDATION IODE-XXI.1**

THE UNESCO/IOC PROGRAMME OFFICE FOR IODE IN OOSTENDE, BELGIUM

The IODE Committee,

Recalling:
(i) Resolution XXII-7 which accepted with appreciation the offer of the Government of Flanders and the city of Oostende to host the IODE Project Office;

(ii) Resolution XXII-1 which adopted the Guidelines for the Establishment of IOC Decentralized Offices, subsequently published in Document IOC/INF-1193;

Noting with appreciation:
(i) the positive results of the external review by UNESCO of the IODE programme and its IOC project Office for IODE (2002-2006), the positive assessment of the performance of the IOC Project Office for IODE by the IODE Committee during its nineteenth Session, and the positive outcome of the review of the performance of the IOC Project Office for IODE as part of the external review of the Flanders Marine Institute;

ii) that the IOC Project Office for IODE has exceeded the expected implementation of its objectives:

   o the successful development and hosting of data/information products/services such as web sites including the IOC web sites, IODE OceanDocs, IODE OceanExpert, IODE Ocean Data Portal;

   o the successful development and hosting of the training system OceanTeacher;

   o the successful training, between 2005 and end 2010, of over 800 participants in IODE related training courses at the Project Office, as well as the high appreciation expressed by students on the quality of the courses and the facilities;

   o the establishment of an excellent international meeting and conference centre.
(iii) the considerable financial support provided by the Government of Flanders (Kingdom of Belgium) to the IOC in general and to the IOC Project Office for IODE in particular, and the excellent in-kind support provided by the Flanders Marine Institute (VLIZ);

(iv) the complementary nature of the activities carried out at the Project Office and the financial support provided by the Government of Flanders (Kingdom of Belgium) through the UNESCO/Flanders Fund-in-Trust for the support of UNESCO's activities in the field of Science (FUST);

(v) the contribution by the IOC Project Office for IODE (as the IODE secretariat and Meeting & Training Facility) to the further development of Ocean Data and Information Networks in developing regions;

(vi) the efficient and effective management of the Project Office and the professionalism of its Staff.

Considering that the Office in Oostende is now assisting fully in the implementation of the IODE Programme, including the regional implementation of the IODE Programme, Expressing its gratitude to the Government of Flanders (Kingdom of Belgium) for:

(i) the considerable support provided, both financially and by hosting of Project Office, as from April 2005;

(ii) the offer to continue hosting and supporting the Office in Oostende, Belgium,

Recommends that:

(i) the IOC Project Office for IODE be continued as IOC Programme Office for IODE;

(ii) the offer of the Government of Flanders (Kingdom of Belgium) to continue hosting the Office in Oostende, Belgium between 2010 and 2014 be accepted,

(iii) the Memorandum of Understanding between the Government of Flanders (Kingdom of Belgium) through the Flanders Marine Institute (VLIZ) be renewed for the period 2010-2014 as the Memorandum of Understanding between the Government of Flanders (Kingdom of Belgium) through the Flanders Marine Institute (VLIZ) on the UNESCO/IOC Programme Office for IODE

ACTION: The Committee will be invited to consider the Draft Recommendation

5. ADOPTION BY IODE OF THE OCEAN BIOGEOGRAPHIC INFORMATION SYSTEM (OBIS)

This Agenda Item will be introduced by Dr. Edward Vanden Berghe (former OBIS Executive Director and ad interim OBIS Programme Specialist), referring to Document IODE/IODE-XXI/43 (Adoption by IODE of OBIS).
5.1 INTRODUCTION

The Committee will be reminded of the history and the accomplishments of OBIS. OBIS was created as the data integration component of the Census of Marine Life; the latter was a ten-year international framework, involving 2700 scientists from 80 nations, studying marine biodiversity. OBIS has grown beyond the Census, and is an international network of its own, with 20 Thematic or Regional Nodes. Through the international Portal, the end user can seamlessly search though 30 million records, extracted from 900 individual data sets. OBIS strives to serve the scientific community, but also to make the OBIS data available to inform the management of marine living resources. To this end, OBIS actively builds relationships with international organisations.

The first Census ended in October 2010; in preparation of this, OBIS has sought affiliation with IOC. During the 25th Session of the IOC Assembly, 16-25 June 2009, it was noted that incorporating OBIS would substantially expand the scope of data coverage by IODE, and resolution 25-4 was adopted in which it was decided inter alia ... to accept OBIS within the IODE Programme and start its integration on a schedule that will ensure a smooth transition of OBIS into IOC.

IOC Circular Letter 2333, issued 16 February 2010, informed Member States that an IOC Trust Fund dedicated to OBIS had been established, and invited Member States to contribute. Several Member States have made a financial contribution. Others have indicated that they are willing to make a contribution in kind, by assisting with the development of the IT Infrastructure and data management tasks, or by organising OBIS-related meetings. Rutgers University, New Jersey, USA, the seat of the present international OBIS secretariat, has offered to host the IODE Project Office for OBIS.

5.2 PROPOSED REVISION OF THE IODE STRUCTURE TO ACCOMMODATE OBIS

Dr Vanden Berghe will recall that at the 2008 OBIS managers committee and the “OBIS (Ocean Biogeographic Information System) Strategy and Work plan Meeting”, IOC Project Office for IODE, Oostende, Belgium, 18-20 November 2009 (See IOC Workshop Report No. 226), extensive discussions were held on how to integrate OBIS into the IODE structure. This resulted in the diagram shown in Figure 1. The incorporation of OBIS into IODE will thus require the following adjustments in the structure:

- An IODE Steering Group for OBIS will be created (replacing the OBIS Nodes Managers Committee);
- An IODE Group of Experts on OBIS will be created (replacing the OBIS Science Board and International Committee);
- An IOC Project Office for IODE/OBIS will be created (replacing the OBIS International Secretariat).
Figure 1: proposed structural diagram of IODE incorporating OBIS

An “Ad hoc meeting of the IODE Steering Group for OBIS” was held at the IOC Project Office for IODE, Oostende, Belgium between 18-19 November 2010. This meeting drafted the Terms of Reference of the new structural elements.

The Committee will be requested to consider the Draft Recommendations for the (i) IODE Steering Group for OBIS; (ii) the IODE Group of Experts on OBIS; (iii) the establishment of the IOC Project Office for IODE/OBIS at Rutgers University, USA; and (iv) revised Terms of Reference for IODE.

Regarding the revision of the IODE Terms of Reference the Committee will be invited to recall the request (through Resolution XXV-4) to the IOC Executive Secretary, in close consultation with the IODE Officers, to draft revised terms of reference for the IODE Committee, taking into account the extended mandate of the Committee as a result of the adoption of OBIS. The Committee will be further invited to recall that it revised the objectives of IODE through Recommendation IODE-XVIII.1:

“**Recommends** that the Objectives of the IODE Programme be modified as follows:

(i) to facilitate and promote the exchange of all marine data and information including metadata, products and information in real-time, near real time and delayed mode;”

**ACTION:** The Committee will be invited to consider whether the objectives of IODE require further revision, following the adoption of OBIS by IODE.

Regarding the establishment of the IOC Project Office for IODE/OBIS the Committee will be reminded that the proposal for the establishment of such an Office shall be submitted by an IOC Primary Subsidiary Body (in this case the IODE Committee) to the IOC Executive Secretary. The establishment of an IOC Project Office requires formal approval by an IOC Governing Body through a Resolution. The IOC Governing Body shall be provided with a detailed document that includes the needs assessment and a detailed estimation of cost (covering the duration of the agreement), as well as a draft host agreement.
ACTION: The Committee will be requested to:

(i) Recommend the establishment of the IODE Steering Group for OBIS
(ii) Recommend the establishment of the IODE Group of Experts on OBIS
(iii) Review Document IOC/IODE-XXI/44 (Proposal to establish the IOC Project Office for OBIS) and in particular its compliance with the approval requirements outlined in IOC/INF-1193 as mentioned above and recommend the submission of this Document to the 26th Session of the Assembly (22 June – 6 July 2011), including a Draft Resolution and draft Host agreement, for adoption.

DRAFT RECOMMENDATION IODE-XXI.2

ESTABLISHMENT OF THE IODE STEERING GROUP FOR OBIS (SG-OBIS)

The IOC Committee on International Oceanographic Data and Information Exchange,

Noting the great progress that has been made under the Global Census of Marine Life (CoML) programme and that this ten-year initiative, to assess and explain the diversity, distribution and abundance of marine life in the oceans, will conclude at the end of 2010,

Recalling the decision, through Resolution XXV-4, to accept OBIS within the IODE Programme, and the request to the IOC Executive Secretary to make the necessary administrative arrangements necessary for OBIS activities to continue under the auspices of IOC and its IODE Programme,

Recommends the establishment of an IODE Steering Group for OBIS with the following terms of reference:

- Advise the IODE Committee on the vision and mission for OBIS;
- Advise the IODE Committee on the strategy for OBIS sustainability and further development;
- Define and monitor the OBIS business plan;
- Assist the IOC Project Office for OBIS and IODE Committee with seeking funding for the sustained development of OBIS;
- Prepare, for submission to the IODE Committee, the work plan for the OBIS community on expanding the dataset and the toolset, on developing new information system products, and on addressing the issues on gaps, that will be implemented and monitored by the IOC Project Office for IODE/OBIS;
- Review progress of and guide the implementation of the work plan, taking into account emerging issues
- Identify any technical or scientific issues as relevant to the implementation of the work plan and recommend these, as required, for action to the GE-OBIS through the IODE Committee;
- Agree on the sharing of responsibilities between members of the OBIS community
- Manage, and recommend modalities, regarding the OBIS node membership;

Recommends that the memberships of the Steering Group shall include the managers of OBIS nodes or their designated representatives. The Steering Group will designate its own Chair.
DRAFT RECOMMENDATION IODE-XXI.3

ESTABLISHMENT OF THE IODE GROUP OF EXPERTS ON OBIS (GE-OBIS)

The IOC Committee on International Oceanographic Data and Information Exchange,

Noting the great progress that has been made under the Global Census of Marine Life (CoML) programme and that this ten-year initiative, to assess and explain the diversity, distribution and abundance of marine life in the oceans, will conclude at the end of 2010,

Recalling the decision, through Resolution XXV-4, to accept OBIS within the IODE Programme, and the request to the IOC Executive Secretary to make the necessary administrative arrangements necessary for OBIS activities to continue under the auspices of IOC and its IODE Programme,

Recommends the formation of a Group of Experts on OBIS, to operate in close collaboration with GE-BICH, and responding to the needs expressed by the IODE Steering Group for OBIS;

Further recommends that the tasks of the Group of Experts should include to improve, optimize and streamline the Ocean Biogeographic Information System:

- By shaping the evolution of the architecture to keep it state-of-the-art, fit for a wide range of users and interoperable with other relevant international data networks
- By providing advice on relevant new technologies, including visualization and analysis tools
- By promoting, selecting or developing standards for data format, data exchange and data synchronization
- By providing guidelines for data practices including QC, data capture, integration, citation, metadata generation for marine biodiversity
- Identify needs and provide advice on training and education initiatives.

Invites the IOC Governing Bodies to support this Group of Experts;

Encourages IOC Member States to nominate experts having expertise in biogeographic and biodiversity data management and exchange to the Group of Experts;

Requests that the Group of Experts maintains close relations with GBIF and other relevant programmes;

Further requests that a progress report be submitted regularly to the IODE Officers and the IODE Committee.
**DRAFT RECOMMENDATION IODE-XXI.4**

**ESTABLISHMENT OF THE IOC PROJECT OFFICE FOR OBIS AT RUTGERS UNIVERSITY, N.J., USA**

The IOC Committee on International Oceanographic Data and Information Exchange,

**Noting** the great progress that has been made under the Global Census of Marine Life (CoML) programme and that this ten-year initiative, to assess and explain the diversity, distribution and abundance of marine life in the oceans, will conclude at the end of 2010,

**Noting with appreciation** the offer by Rutgers University, N.J., U.S.A. to host the IOC Project Office for IODE/OBIS,

**Recalling** the decision, through Resolution XXV-4, to accept OBIS within the IODE Programme, the requests to the IOC Executive Secretary to (i) make the necessary administrative arrangements necessary for OBIS activities to continue under the auspices of IOC and its IODE Programme, and (ii) to explore a formal agreement for the hosting of an IOC Office for OBIS with the current host institution of the OBIS Secretariat at Rutgers University, N.J., U.S.A,

**Recalling further** the Guidelines for the Structure and Responsibilities of the Subsidiary Nodies of the Commission and for the Establishment of Decentralized Offices as documented in IOC/INF-1193,

**Acknowledging:**

(i) the Proposal, submitted by the twenty-first Session of the IOC Committee on International Oceanographic Data and Information Exchange (IODE-XXI) to establish the IOC Project Office for IODE at Rutgers University, N.J., U.S.A.,

(ii) that the Proposal complies with the requirements defined in IOC/INF-1193,

**Decides** to accept the offer of Rutgers University, N.J., U.S.A. to host the IOC Project Office for IODE/OBIS;

**Decides** to establish the IOC Project Office for IODE/OBIS at Rutgers University, N.J., U.S.A. with the following Terms of Reference:

(i) to maintain and develop the Ocean Biogeographic Information System (OBIS), its network, the international OBIS portal and collective database with emphasis on improving the efficiency and effectiveness of the data and product/service stream;

(ii) to create an enabling environment, and assist in strengthening the capacity of constituent Nodes to manage biogeographic data and information and to provide biogeographic information products and services required by users;

(iii) to coordinate and monitor the implementation of the OBIS work plan as adopted by the IODE Committee

**Requests** the IOC Executive Secretary to establish a formal host agreement with Rutgers University, N.J., U.S.A.;

**Requests** the IOC Executive Secretary to provide the necessary secretariat assistance to the Project Office, taking into account IOC/INF-1193;

**Urges** IOC Member States to actively participate in and financially support the Project Office and its activities.
5.3 OBIS STRATEGY, MEDIUM AND LONG-TERM OBJECTIVES

Dr Vandenberghe will recall that the medium term objectives of OBIS were discussed in the *ad hoc* meeting of the SG-OBIS, and identified in different categories: data management, IT infrastructure, increasing use of OBIS by data contributors and consumers, and finalizing the transition of OBIS from a project-based activity to a permanent part of the international scientific infrastructure under IOC/IODE.

In order to achieve these objectives, several meetings are proposed: yearly meetings of the SG OBIS, two-yearly meetings of the proposed GE OBIS; technical meetings to further the development of the OBIS IT infrastructure; scientific meetings to analyze and publish on the OBIS data holdings. Also, participation in other meetings will be needed to liaise with other international organizations such as CBD, FAO, ISA and others.

The budget requested for OBIS includes funds to organize these meetings, and for salaries of staff members. The contribution of Member States, in combination with the offers in kind of institutions within the OBIS community, will allow covering most of the OBIS needs for 2011; a substantial contribution will be needed after that.

6. PROGRAMME ACTIVITY REPORTS

6.1 GROUPS OF EXPERTS

6.1.1 IODE Group of Experts on Biological and Chemical Data Management and Exchange Practices (GE-BICH)

This Agenda Item will be introduced by Dr Gwenaëlle Moncoiffé referring to Document IOC/IODE-XXI/12 (*Report of the IODE Group of Experts on Biological and Chemical Data Management and Exchange Practices (GE-BICH)*).

The GE-BICH met for its fifth session on 17 to 20 January 2011. Substantial progress was made on its workplan for the period 2009-2011. This included the development and maintenance of a GE-BICH wiki (https://sites.google.com/site/gebichwiki/home); the compilation of lists of vocabularies needed for the management and exchange of biogeochemical data; the organisation the “First IODE Workshop on Quality Control of Chemical Oceanographic Data Collections” on 8-11 February 2010 with outcomes presented at IMDIS 2010 and published as IOC Workshop Report No. 228; the submission of a quality flag scheme proposal to the Ocean Data Standards process; the compilation of information about quantitative test criteria for biological and chemical data quality control; a study of the current provision and access of chemical and biological data via the SeaDataNet and the ODP portals.

The Group made a number of recommendations including (i) that the device vocabulary catalogue currently maintained by Dr Roy Lowry at BODC be submitted to Ocean Data Standards (ODS); (ii) that portals such as ODP, SDN, and OBIS be made interoperable; (iii) that ODP provide access to stand-alone data software tools such as ODV and DIVA and employ BODC Parameter Usage Vocabulary for biological and chemical data; (iv) that SDN identify a point of contact to address data quality issues in climatologies generated by DIVA. The group also called on NODCs to send or serve their publicly available chemical and biological data to international data systems such as ODP and SDN, and called on developers to ensure that these systems are ready to serve them.
GE-BICH also recommended that the IODE Committee address data flow procedures including data flow to the WDC Oceanography, Silver Spring, USA and its WOD product and identifies the long-term and permanent archival for all oceanographic data, including OBIS data products. The Group stressed that close collaboration should be established between OBIS nodes and IODE NODCs to ensure efficient and effective data flow of biogeographical data. It also called on IODE to recommend that NODCs liaise with Government funding agencies to ensure that biological and chemical ocean data are sent to NODCs and that NODCs are properly resourced to curate these data.

Dr Moncoiffé will inform the Committee that the GE-BICH will need to renew 3 of its long-term members. In this regard IOC Circular Letter No. 2369 was issued on 31 January 2011 inviting Member States to nominate suitable candidates. Dr Moncoiffé will inform the Committee on the new membership of the Group.

The GE-BICH proposed workplan includes completion of on-going work on vocabularies and quality control procedures. GE-BICH also plans to (i) start a review of selected parameter code definitions; (ii) set up a working group on the standardization of measurement units reporting; (iii) set up a working group to improve input to Ocean Teacher.

GE-BICH requests funding to organize a meeting in 2012 which would consist of an ad-hoc GE-BICH meeting with the new long-term members followed by the 2nd workshop on data QA/QC to further develop quantitative and objective test criteria for selected chemical and biological data. GE-BICH will also require funding to support its 6th session in 2013.

Dr Moncoiffé will inform the Committee that the total amount requested for the next inter-sessional period amounts to US$ 60,000.

**ACTION:** The Committee will be invited to:

(i) Comment on the progress made by the GE-BICH
(ii) Approve the report of the 5th Session of GE-BICH and the work plan included therein;

### 6.1.2 IODE Group of Experts on Marine Information Management (GE-MIM)

This Agenda Item will be introduced by Ms Linda Pikula (Chair, GE-MIM) referring to Document IOC/IODE-XXI/13 *(IODE, GEMIM)*, Document IOC/IODE-XXI/22 *(ASFA)*, Document IOC/IODE-XXI/23 *(OceanDocs and Aquatic Commons)*, Document IOC/IODE-XXI/24 *(OceanExpert)* and Document IOC/IODE-XXI/25 *(OpenScienceDirectory)* and Agenda Items 6.2.8, 6.2.9, 6.2.10 and 6.2.11.

Ms Pikula will inform the Committee that the 11th Session of the IODE Group of Experts on Marine Information Management (GE-MIM-XI) was held at the IOC Project Office for IODE, Oostende, Belgium between 25-28 May 2010. The Group had re-elected Ms Linda Pikula as its Chair.

Ms Pikula will inform the Committee that the GE-MIM had been particularly active during the past inter-sessional period, implementing a wide range of activities. This can be witnessed from the four working documents submitted to the Committee.

Regarding OceanDocs the Committee will be informed that cooperation is being
established with FAO-KCEW on AgriOceanDSpace. This will lead to making available materials between the FAO and IOC/IODE user communities. Cooperation between the IAMSLIC (International Association of Marine and Aquatic Science Libraries and Information Centers) will also be further developed through the hosting, by the IOC Project Office for IODE, of the IAMSLIC repository Aquatic Commons since January 2011.

67 A MIM Communications Strategy document has been completed and approved by the GE-MIM. This document was prepared as a follow-up to the IODE Review which indicated that IODE members were not fully aware of the services and products available through the GE-MIM. The Aims and Objectives of MIM Communications Strategy are:
- To provide communication channels and tools which promote effective and efficient exchange of factual and intellectual information among IOC stakeholders through the MIM activities of IODE.
- To facilitate positive outcomes for marine information management by encouraging, supporting and developing a culture of strong communication both within the IODE and with important and relevant stakeholders in the wider library & information management community.

68 The Strategic Objectives are:
- Clear and coordinated identification of current issues and future priorities for marine information management
- An IODE-wide culture of sharing of knowledge & expertise on the topic of marine libraries and marine information.
- Strong understanding of MIM issues and priorities by the IODE Officers Group
- Increased involvement of MIM National Coordinators in establishment of new MIM projects, and maintenance of existing services and products (see Role of MIM National Coordinators)
- A strong sense of community & support shared by all MIM National Coordinators
- Improved synergies with external stakeholders and other agencies e.g. UN Agencies, Government Organizations, NGOs, Professional Societies and relevant programs.

69 Ms Pikula will recall that the “IOC Strategic Plan for Oceanographic Data and Information Management (2008-2011)” adopted by the twenty-fourth Session of the IOC Assembly (19-28 June 2007) through Resolution XXIV-9 did not include marine information management elements.

70 The Committee will be invited to include MIM elements in the next version of the IOC Strategic Plan for Oceanographic Data and Information Management. Further discussion on this topic will be referred to Agenda Item 11.

71 Ms Pikula will inform the Committee that much of the GE-MIM-X work plan has already been accomplished, e-copyright legislation is being monitored and taught during the OceanTeacher Academy workshops, a GE-MIM liaison has been assigned to the IODE Caribbean Marine Atlas projects, improved access to e-journals has been achieved through the aggregation of journals listed as available through OpenScience Directory AZ, in cooperation with the University of Hasselt, and EBSCO, and our OceanDocs Repository is engaged in co-operative projects with FAO, ASFA, IAMSLIC, and other European Repository projects. These collaborative projects are amongst our most important accomplishments in 2010.

72 Additionally, the IODE 50th Anniversary Bibliography has been prepared by GE-MIM, Mr Marc Goovaerts (Hasselt University, Belgium), and Maria Kalenchits (Estonia). It is available from the URL: http://193.190.8.15/xmlui (this URL will be replaced by an easier
Ms Pikula will then inform the Committee about the work plan and budget for the next inter-sessional period. The Group will focus activities on (i) cooperation in the SCOR/IODE/WHOI MBL data publication project; (ii) cooperation with OBIS; (iii) cooperation in ASFA; (iv) establishment of a formal relationship with IAMSLIC; (v) assisting ODINs in the selection of a new library management system software platform; (vi) further assisting ODINs with the development of e-repositories; (vii) identifying arrangements for mentoring programmes and internships; (viii) further development of MIM courses in OceanTeacher; (ix) further development of OceanDocs and assistance to Aquatic Commons; (x) further enhancement of OceanExpert; (xi) studying the feasibility of continuation of the Ocean Ports (African Ocean Portal and Portal Oceanico); (xii) collaboration of GE-MIM in the Coastal Atlases projects; (xiii) development of specific bibliographies (like IODE 50th anniversary); and (xiv) contribution to the 2012-2015 IOC Strategic Plan for Oceanographic Data and Information Management.

The Committee will be invited to approve the Report of the eleventh Session of the IODE Group of Experts on Marine Information Management and the Recommendations therein.

**ACTION:** The Committee will be invited to:

(iii) Comment on the progress made by the GE-MIM
(iv) Approve the report of the 11th Session of GE-MIM and the Recommendations included therein;
(v) Instruct the GE-MIM to publish the “MIM Communications Strategy” in the IOC/INF series.

6.1.3 **JCOMM/IODE Expert Team on Data Management Practices (ETDMP)**

This Agenda Item will be introduced by Mr N. Mikhaylov, Chair of the ETDMP, referring to Document IOC/IODE-XXI/14 (Report on Inter-Sessional Activities of the ETMP). He will note that the work was aimed at fulfilling the IODE-XX and JCOMM-III recommendations. The main ETDMP activity was concentrated on the following directions: (i) conducting the IODE/JCOMM Standards Process (ODS); (ii) improving the metadata management; (iii) development of the IODE Ocean Data Portal (ODP) Project including the participation in the JCOMM Pilot Project for WIGOS.

In accordance with the work directions the relevant ETDMP Task Teams were created and appointed at the JCOMM/IODE ETDMP-II meeting in April 2010 and their the work plans were agreed upon.

Mr. Mikhaylov will recall further that the IODE Committee (IODE-XX) adopted Recommendation IODE-XX.2 - The Ocean Data Standards Pilot Project encourages all IOC Member States, Programmes and relevant organizations to submit standards for consideration, contribute to the evaluation process, and adopt recommended standards at the earliest opportunity. This process was to be coordinated by the ETDMP (Task Team for Ocean Data Standards, ODS, managed by P. A. Oloo, Kenya).

Three submissions, to recommend that the international standard ISO 3166 for Country codes, ISO 8601 for Date and Time and SeaDataNet Common Data Index (CDI) profiles based on ISO 19115 for exchange of oceanographic and marine meteorological data,
has been received. The first two of these submissions have been published and the third is still under review. Some standards have been identified for submission to ODS, they include Latitude, Longitude and Altitude based on ISO 6709, Units, Platform/Instruments, Institutions, Ontology, Taxa and QCs (dependent on parameters). In general, the process of receiving recommended standards from Member States has been very slow. The success of this process is highly dependent on active participation of all IOC Member states, Programmes and related organizations by submitting suitable standards for consideration. The ETDMP ODS Task Team will liaise with Ocean Data Portal (ODP), SeaDataNet Technical Task Team and the GE-BICH to expand the ODS process.

Mr. Mikhaylov informed also about ETDMP activity in field the metadata management. He noted that relevant ETDMP Task Team managed Nicola Scott, UK provided the compilation of the basic ISO/OGC standards and also specifications and other materials of ODP and SeaDataNet for following review and comparisons.

Mr. Mikhaylov noted further that the most significant outcomes were achieved with the ODP development and he listed them as follows:

- the training courses were provided for ODP distributed data system establishment for ODINBlackSea and ODINWESTPAC countries;
- the light Data Provider package and new ODP services were developed and distributed for use;
- the organizations and programmes as part of the JCOMM Pilot Project for WIGOS provided the data sets into ODP distributed system: Argo temperature and profile data, Russian National Oceanographic Data Centre resources, upper-ocean T & S gridded in situ fields from the ISDM (Canada) and etc.
- preliminary technical design document (white paper) for ODP (V.2.) has been completed.

Mr Mikhailov will inform the Committee of the proposed work plan and budget for the next inter-sessional period. The financial support required from the UNESCO Regular Programme amounts to US$ 124,000. Some support will be available from WMO for meetings of the DMCG and ETDMP during 2012-2013 (to be approved by WMO Cg XVI).

ACTION: The Committee will be invited to consider the proposed work plan and budget and allocate funds accordingly.

6.2 PROJECTS

6.2.1 JCOMM/IODE Ocean Data Standards

Mr. Paul N. Oloo will introduce this Agenda Item referring to Document IOC/IODE-XXI/15 (IODE/JCOMM Ocean Data Standards Pilot project).

A joint IODE/JCOMM Standards meeting held in January 2008 developed a process to accept, evaluate and recommend proposals for community wide standards for marine data and information management and exchange.

As a result of this meeting, the IODE Committee (IODE-XX) adopted Recommendation IODE-XX.2 - The Ocean Data Standards Pilot Project, which encourages all IOC Member States, Programmes and relevant organizations to submit standards for consideration, contribute to the evaluation process, and adopt recommended standards at the
earliest opportunity. This process is coordinated by the ETDMP through recommendation of IODE-XX.

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JCOMM-III in November 2009 endorsed a number of priorities for the DMPA for the next intersessional period, including developing standards and best practices in the marine community through the IODE/JCOMM Standards Process. JCOMM-III also adopted Recommendation 7.3/1 (JCOMM-III) — Development of Data Management Standards which recommends Members/Member States (i) to submit their proposals to the JCOMM-IODE Ocean Data Standards Pilot Project (ODS) for wide community adoption; and (ii) to implement the recommended standards in agencies in their own countries at the earliest possible date.

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JCOMM/IODE have prepared and published an online Catalogue of Best Practices and Standards for integrating of instrument best practices and related standards among the marine meteorological and oceanographic communities. The web site provides access to over 60 publications of WMO and IOC. Further work needs to be carried out to review the publications and documents to identify deficiencies, duplication, discrepancies, potential for cross-referencing, and to make recommendations to address those issues.

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Three submissions have been received: (i) Recommendation to Adopt the International Standard ISO 3166 for Country codes; (ii) Recommendation to Adopt the International Standard ISO 8601 for Date and Time; and (iii) SeaDataNet Common Data Index (CDI) profiles based on ISO 19115 for exchange of oceanographic and marine meteorological data. The first two submissions have successfully passed through the review process and the third submission has been submitted for expert review.

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The process of receiving recommended standards from Member States has been very slow. The success of this process is highly dependent on active participation of all IOC Member states, Programmes and related organizations by submitting suitable standards for consideration. The Meeting of a Standards Group of Experts as proposed in the previous Workplan was not undertaken; therefore we propose a meeting of the ODS Pilot Project with the objective of harmonizing the Instrumental observations and Data management for physical and non-physical variables in Ocean community application during the year 2011 and in 2012-13.

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Some standards have been identified for submission to ODS, they include Latitude, Longitude and Altitude based on ISO 6709, Units, Platform/Instruments, Institutions, Ontology, Taxa and QCs (dependent on parameters). ODS Task Team will liaise with other Task Teams in ETDMP on these standards proposals. Other standard proposals from the ETDMP Task Teams will also be considered. The SeaDataNet Technical Task Team will be approached to consider submitting the Sea Level Quality Control, Cruise Summary Report (CSR), SeaDataNet device categories -L05 and ODV4 in ASCII format standard proposals. The IODE Workshop on QC/QA of Chemical Oceanographic Data in February 2010 GE-BICH agreed to submit the QC quality flag scheme and a schema for five data processing levels for data management to the ODS process. The ETDMP through ODS will follow up with GE-BICH to ensure these proposals are submitted. ETDMP will also play a more proactive role in soliciting standards submissions.

ACTION: The Committee will be invited to comment on progress made and on ways and means to increase the number of standards published during the next intersessional period.
6.2.2 IODE OceanDataPortal

This Agenda item will be introduced by Dr Sergey Belov referring to Document IOC/IODE-XXI/16 (IODE Ocean Data Portal). He will recall that a high priority has been assigned to invite new data providers from NODCs, DNAs, and IODE related projects. During the inter-sessional period 10 data providers have been connected supplying access to 55 datasets with more than 800,000 profiles. The US NODC and ISDM (Canada) supplied their data using the ODP Light Data Provider software hosted at the IOC Project Office for IODE, Oostende. It will be recalled that the Light Data Provider (LDP) has been developed in order to respond to security concerns expressed by some Members/Members States. The LDP is an extension of the Data Provider functionality of the ODP which allows integration of data from data centres unable to install the Data Provider software. LDP offers remote registration of local datasets and provides deployment of the ODP distributed data system without software installation at the data centre side. The LDP allows participating organizations to generate the appropriate discovery metadata files and to remotely load local data into the ODP distributed data system, thus providing interoperability with the IODE ODP and the WMO WIS. Dr Belov will note that the IODE ODP has been designed to be interoperable with the WIS as a Data Collection or Production Centre (DCPC).

Dr Belov will inform the Committee that, following the IODE-XX recommendation to develop interoperability arrangements with the SeaDataNet project, draft technical specifications of the IODE ODP and SeaDataNet interoperability have been created. In the document it was proposed to focus on interoperability at the portal-to-portal. The following interoperability arrangements were outlined: (a) metadata exchange; (b) data discovery; (c) data access and delivery to users; and (d) system monitoring and report. Tasks for the implementation phase include adoption of common vocabularies, discovery metadata harmonization for ODP-SDN exchange, harmonization of user identification and interoperability between IODE ODP and SDN.

Documentation and two web sites have been developed for the IODE Ocean Data Portal: the IODE ODP website www.oceandataportal.org which provides basic information for general users, technical information (Data Provider software, manuals and documentation, services, formats and dictionaries), a discussion forum, Frequently Asked Questions (FAQ) and training materials; and the IODE ODP portal site http://odp.oceandataportal.net which provides access to data from the contributing organizations, including the discovery service, viewing service, analysis service and download service.

During the intersessional period new versions of the ODP software components have been released. The latest software updates and technical documentation are available from the www.oceandataportal.org web site.

Dr Belov will inform the Committee of the proposed work plan and budget for the next inter-sessional period. He will recall that the financial requirements were already discussed under Agenda Item 6.1.3 (ETDMP) and that they would focus on the establishment of IODE ODP nodes in various regions. In addition support has been requested to organize a meeting of the IODE Steering Group for the IODE ODP, in collaboration with WMO. Dr Belov will also inform the Committee that technical development work will continue to be carried out by the Russian NODC as an in-kind contribution to IOC/IODE, and that the technical work required to “connect” NODCs to ODP will be provided by the respective Member State as an in-kind contribution to IOC/IODE.
6.2.2.1 Cooperation with WMO/WIS

This Agenda item will be introduced by Mr Greg Reed referring to the document Pilot Project for the integration of marine meteorological and other appropriate oceanographic observations into the WMO Integrated Global Observing System (WIGOS) (WIGOS Pilot Project V - JCOMM Pilot Project for WIGOS) – Project Report (available at http://www.wmo.int/pages/prog/www/wigos/marine_pp.html) and he will note that IODE has been an active partner in the JCOMM Pilot Project for WIGOS. WIGOS is a concept for a comprehensive, coordinated and sustainable system of observing systems based on the observational requirements of all WMO Programmes and Co-sponsored Programmes (including IOC). This Pilot Project has been an important contribution to the development of WIGOS and the WMO Information System (WIS). WIGOS will ensure the availability of required data and information and facilitates access through the WIS according to identified requirements.

Due to the important synergies that existed with the IODE Ocean Data Portal (ODP) project, a Joint Steering Group was established to coordinate the development of the Pilot Project and to provide liaison with appropriate WMO and IOC programmes and subsidiary bodies. The "Joint Steering Group for the IODE Ocean Data Portal and the JCOMM Pilot Project for WIGOS" has been co-chaired by Mr Reed.

The Pilot Project identified three key deliverables: (i) document and integrate instrument best practices and related standards, (ii) build marine data systems that are interoperable with the WIS, and (iii) promote quality management and standards through compliance with the WMO Quality Management Framework (QMF).

The Pilot Project worked closely with the IODE to ensure the interoperability of the IODE ODP with the WIS as a Data Collection or Production Centre (DCPC). This will provide increased accessibility to the data holdings in the IODE oceanographic data centres and will result in multidisciplinary access to data. The JCOMM/IODE Standards process provided a framework for the Pilot Project to further the development of appropriate widely accepted standards to address issues such as quality control procedures, data collection and exchange formats, and products using the observational data. The catalogue on JCOMM best practices and standards (http://bestpractice.iode.org/) provides access to over 60 publications of WMO and IOC.

The two-year Pilot Project concluded in December 2010 and its legacy includes rationalized documentation on instrument best practices and standards, the establishment of regional marine instrument centres, integration of marine datasets through interoperability with the WIS, and promoting quality management and standards. A list of legacy recommendations is included in the Pilot Project Report.

6.2.2.2 Cooperation with SeaDataNet

This Agenda Item will be introduced by Dr Sergey Belov. He will be invited to report on technical cooperation between the IODE Ocean Data Portal and SeaDataNet. Reference will also be made to discussions held during the 5th Session of GE-BICH.
The Committee will invite the SeaDataNet representative to provide a brief report on the progress of SeaDataNet (phase 1) and submission of SeaDataNet (phase 2) and the role of IODE in the latter.

**ACTION:** The Committee will be invited to consider the experience of IODE in SeaDataNet (phase 1) and the role of IODE in the proposed SeaDataNet (phase 2).

### 6.2.3 Data Publishing (SCOR/IODE)

This Agenda Item will be introduced by Dr Gwen Moncoiffé referring to Document IOC/IODE-XXI/17 (*SCOR/IODE/MBLWHOI Library Project on Data Publication*). Started in 2008, this activity assembled 18 experts in April 2010 to review progress on the pilot projects, on assembly and publication of ingested data sets and creation of a digital backbone for traditional data publications. A “Data Publication Challenge for Ocean Data Management” was issued to IODE national oceanographic data centers and also shared with the data management, library, and oceanographic communities through presentations at meetings specific to each community. An enthusiastic response was received; many centres want to get involved in data publication, but none seems to know where to start.

Roy Lowry (British Oceanographic Data Centre, chair of the project) made a presentation at the 22nd International CODATA Conference in October 2010 in Cape Town, South Africa on “Data Centre-Library Co-operation in Data Publication in Ocean Science”. This meeting was an important event to reach the data management community outside the oceanographic domain. The conference established a CODATA Task Team on Data Citation and Publication. Helge Sagen from the Norwegian NODC has agreed to serve on this group to ensure it takes into account the requirements of the established oceanographic data management community. Lisa Raymond (MBLWHOI Library) made a presentation at the October 2010 meeting of the International Association of Aquatic and Marine Science Libraries and Information Centers (IAMSLIC) Annual Conference in Mar del Plata, Argentina. The presentation was very well received by members of the marine libraries community, generated contact by the Freshwater Biological Association (U.K.), Cemagref (France), and the Rosenstiel School Library (Univ. of Miami, U.S.A.) for more information on the data publication project as well as general information about the role of libraries and data management. The librarians are particularly interested in how the MBLWHOI Library is using its institutional repository to accept datasets. Lisa Raymond also presented a poster at the December 2010 American Geophysical Union Meeting in San Francisco, California, USA. Ed Urban arranged a meeting of the University of Delaware Morris Library with the Dean of the university’s College of Earth, Ocean, and Environment (CEOE) in December 2010 to discuss the possibility of a pilot project using the Morris Library’s DSpace archive to store data related to papers published by faculty and staff from CEOE.

Dr Moncoiffé will then briefly introduce the work plan proposed for the next inter-sessional period: (i) it is proposed to meet once in 2011 to assess progress with the pilot project and to plan the next phase of the project; (ii) a trial dataset of typical complexity has been assembled and discussions are underway with the IODE Project Office to establish ‘PublishedOceanData’, a parallel DSpace facility to OceanDocs for the digital curation of static snapshots of dynamic data entities; (iii) the BODC group is also working to document best practice for the physical composition (e.g. file formats) and semantic description of the content of such snapshots to ensure confident re-use of the data in decades to come; and (iv) The MBLWHOI Library will be working closely with the Biological and Chemical Oceanography Data Management Office (BCO-DMO), an NSF-funded data centre, to publish datasets related to the “digital backbone for traditional journal articles” use case. BCO-DMO
seeks to enhance citation with the assignment of DOIs. This research should be well underway by mid-2011.

Dr Moncoiffé will inform the Committee that the required funding for the next intersessional period will amount to US$ 10,000 of which US$ 5,000 is being provided by SCOR (for the 2011 meeting).

**ACTION:** The Committee will be invited to consider the proposed work plan and budget and allocate funds accordingly.

### 6.2.4 Global Oceanographic Data Archaeology and Rescue (GODAR)

This Agenda Item will be introduced by Mr Sydney Levitus referring to Document IOC/IODE-XXI/18 (*GODAR project report*). IOC Member States continue to support the GODAR project. For example Germany has digitized and made available approximately 7,550 historical (pre-1991) Ocean Station Data casts. These data will be processed and made available as part of the World Ocean Database which is updated online every three months (www.nodc.noaa.gov). The United Kingdom, Sweden, Spain, Norway, Republic of Korea, Ukraine, Japan, Russia, United States, other countries and the ICES have also submitted historical data. A backlog of historical data sets has built up because of the attention we gave to building data sets for the Gulf of Mexico and the analysis of data for this region because of the oil spill from the Deepwater Horizon accident.

Mr Levitus will introduce the proposed work plan for the next inter-sessional period. Work will consist of processing data submitted as part of the GODAR project for inclusion into the World Ocean Database. A backlog of historical data sets has built up because of the attention we gave to building data sets for the Gulf of Mexico and the analysis of data for this region because of the oil spill from the Deepwater Horizon accident. The GODAR project hopes to have four data managers visit during the next two years. This has proven very helpful in the past for acquiring, processing, and incorporating historical data into the World Ocean Database. Each visit will last one month. In the past the U.S. NODC and the WDC for Oceanography has paid for such visits but now funding has become very limited.

Mr Levitus will inform the Committee of the required funding for the next inter-sessional period. This will amount to US$ 15,000/year in 2011, 2012 and 2013 (total US$ 45,000) and will be used to fund two one-month expert visits/year to NODC/WDC to assist with GODAR work.

**ACTION:** The Committee will be invited to consider the proposed work plan and budget and allocate funds accordingly.

### 6.2.5 Global Temperature and Salinity Profile Programme (GTSPPP)

This Agenda Item will be introduced by Dr Charles Sun, GTSPPP Chair, referring to Document IOC/IODE-XXI/19 (*Project Report: Global Temperature and Salinity Profile Programme (GTSPPP)*).

In terms of data volumes GTSPPP continued to deal with greater volumes of data over the past two year period. The number of real-time data handled was 4,541,361 covering the
period of 2009 – 2010, increased about 77% from the period of 2007 – 2008; while the number of delayed-mode data added to the archive increased about 48% to 111,004 at the end of 2010. Since July 2008, GTSSPP started to manage the data set of CTD (Conductivity, Temperature and Depth) profiles derived from marine mammals. The number of the marine mammal-borne CTD profiles acquired by GTSSPP was 9,915 in 2008 and has grown significantly to 47,111 and 40,221 in 2009 and 2010, respectively.

111 GTSSPP continued to improve its capabilities of serving the GTSSPP data for operations and climate research. The number of bytes transferred covering the period for 2009 and 2010 was 3.09 TB. The following table summarizes the detailed usage statistics of the GTSSPP data.

<table>
<thead>
<tr>
<th>Year</th>
<th>GTSSPP HTTP Server Statistics</th>
<th>GTSSPP FTP Server Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Files Requested</td>
<td>Distinct files requested</td>
</tr>
<tr>
<td>2009</td>
<td>292,064</td>
<td>18,041</td>
</tr>
<tr>
<td>2010</td>
<td>107,171</td>
<td>26,469</td>
</tr>
</tbody>
</table>

112 IODE-XX noted that CRC (Cyclical Redundancy Check) is a good candidate to be used as a tool for producing unique identifiers for oceanographic data and for submission to the Ocean Data Standards Pilot Project. GTSSPP has incorporated the CRC algorithm into its data processing stream. Countries implementing the CRC into their XBT data processing systems are Australia, Canada, France and U.S.A. NODC continued to monitor the usefulness of the CRC tag to identify duplicates. The results to date are very satisfactory. However, it is clear that care must be taken to ensure software and procedures are carefully carried out.

113 GTSSPP is an active contributor and partner in a number of other international programs. In particular, GTSSPP worked with the IODE Ocean Data Portal (ODP) project and NOAA’s Environmental Research Division’s Data Access Program (ERDDAP) to make the data available at their Web sites. In addition, GTSSPP continued to monitor the real-time GTS data and collaborate with WOD (World Ocean Database) and CCHDO (CLIVAR & Carbon Hydrographic Data Office) in support of Argo reference data set.

114 The GTSSPP Real-Time Quality Control Manual, First Revision was published as IOC Manuals and Guides No. 22, Revised Edition, in December 2010.

115 With financial support from IODE, the GTSSPP participants met at the IODE project office in May 2010 in Oostende, Belgium. The meeting report is posted at the GTSSPP Web site at http://www.nodc.noaa.gov/GTSSPP/. In addition, two ad hoc GTSSPP meetings were organized in conjunction with the Argo Data Management Team annual meeting. One was held in October 2009 in Toulouse, France and the other was in October 2010 in Hamburg, Germany.

116 Dr Sun will then introduce the work plan and budget for the next inter-sessional period 2011-2013: the work plan will include (i) continue to acquire profiles and make real-time & delayed mode profile data available; (ii) continue production of metrics in support of JCOMM OPA and SOT; (iii) complete bi-annual report for 2009-2010; (iv) convene a three-day workshop for design and requirements of the GTSSPP NetCDF format revision; (v) complete the evaluation of the use of a CRC in real-time and delayed mode duplicates identification; (vi) complete the GTSSPP data user guide manual; (vii) design the GTSSPP DVD for use in the IODE training/outreach programs; (viii) convene a three-day GTSSPP bi-annual meeting at the IODE Project Office; (ix) complete the GTSSPP training material for use by the IODE Ocean Teacher Programme; (x) conduct two training courses (2012, 2013) on
ocean data management (as relevant to GTSSP) in Oostende; (xi) complete the GTSSP
database system technical documentation. Dr Sun will inform the Committee that the
financial requirements for the next inter-sessional period will amount to US$ 39,000.

**ACTION: The Committee will be invited to consider the proposed work plan and budget and allocate funds accordingly.**

### 6.2.6 Global Ocean Surface Underway Data Pilot Project (GOSUD)

Mr Loïc Petit de la Villéon will introduce this Agenda Item by referring to Document IOC/IODE-XXI/20 (GOSUD report for 2009-2010).

He will report that during the reporting period major work has been done on tools and methods that enable production of delayed mode datasets of a higher quality and to visualize existing (near real time datasets). The GOSUD project is looking for scientists or data managers that could help on data assessment. Using their regional expertise and with the help of the tools developed within the project. They could be direct partners of the project or contribute from outside the project.

As highlighted in the GCOS implementation plan, there is an important need of surface data and sea surface salinity data. GOSUD has proven the feasibility of data collection, quality control maintaining a global archive of Sea Surface Salinity. Robustness of the project is effective. However, most of the partners joined the Project since it began. The partnership of the project must be enlarged.

The objective of the 2 coming years is to recruit research vessels that could transmit SSS data either in near real time or after the ship reached the port. This could be either non quality controlled data or processed in delayed mode data. The GOSUD project requires that IODE national representatives support the project by providing SSS data to the project either by opening their archives or by providing recent data. First priority must be put on research vessels or on merchant ships that operate on regular lines.

**ACTION: The Committee will be invited to consider recommending that National representatives support the project by distributing this report in their country and to identify potential contributors either by providing data to the project or by providing scientific or data management expertise that could enhance the quality of the Gosud dataset and/or enlarge the network. First priority must be put on research vessels or on merchant ships that operate on regular lines.**

### 6.2.7 Marine XML

This Agenda Item will be introduced by Dr Lesley Rickards referring Document IOC/IODE-XXI/21 (Report of the MarineXML Steering Group). She will report that the joint MarineXML/SeaDataNet vocabulary governance group has been working to develop vocabularies covering water body names and data production tools. The ‘SeaVoX Salt and Fresh Water Body Gazetteer’ launched just prior to IODE-XX has undergone further population. The ‘SeaVoX Device Catalogue’ has been initially populated and published.

A presentation was given to ICES Working Group on Data and Information Management (Copenhagen May 25-27 2010) on the history and role of MarineXML SG.
This was well received and in the following discussion WG-DIM recognized that standards development was within its strategic Terms of Reference. The WG-DIM co-chairs agreed that they would endeavour to find resources for specific standards development activities brought to their attention and deemed to be of specific interest to ICES.

Dr Rickards will then inform the Committee of the proposed work plan and budget for the next inter-sessional period. This will include the continued development of the “SeaVoX Salt and Fresh Water Body Gazetteer”.

Dr Rickards will note that there will be no financial requirements for the next inter-sessional period. Dr Rickards will note that the overlap between the marineXML and Ocean Data Standards projects is quite substantial and will therefore recommend that the marineXML activities are continued as part of the Ocean Data Standards project. Accordingly the Committee will be invited to consider Resolution IODE-XXI.5 as detailed below:

**ACTION:** The Committee will be invited to consider the Draft Resolution

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**DRAFT Resolution IODE-XXI.5**

**CONTINUATION OF THE WORK OF THE IODE MARINE XML STEERING GROUP WITHIN THE OCEAN DATA STANDARDS PILOT PROJECT**

The IOC Committee on International Oceanographic Data and Information Exchange,

**Recalling** the establishment of the IODE XML Steering Group by the IODE Committee at its eighteenth Session,

**Recognizing** that the work of the Steering Group overlaps substantially with that of the Ocean Data Standards Pilot Project, established through Recommendation IODE-XX.2,

**Decides** that the work of the IODE Marine XML Steering Group will be subsumed by the Ocean Data Standards Pilot Project.

**Further decides** that the IODE Marine XML Steering Group will be abolished.

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6.2.8 Aquatic Sciences and Fisheries Abstracts (ASFA)

This Agenda Item will be introduced by Ms Linda Pikula (Chair GEMIM), referring to **Document IOC/IODE-XXI/22 (ASFA – Aquatic Sciences and Fisheries Abstracts)**. She informed that collaboration between IOC and ASFA is implemented through the work of the GE-MIM. Ms Pikula reported the following achievements during the past inter-sessional period: (i) encouragement of ODIN library managers to increase ASFA input; (ii) participation of the GE-MIM Chair in the 2010 ASFA Advisory Board Meeting (Casablanca, Morocco, 5-9 July 2010). At that occasion the FAO ASFA Secretariat agreed to investigate means to increase ASFA collaboration with, and also ASFA participation in, IOC-IODE/ODIN activities and initiatives (e.g. capacity building in digitization and repositories). And also OceanTeacher training activities were discussed; (iii) development of ability of ASFA input software to ingest Inmagic library records (the Inmagic software has been used by ODINAFRICA partner libraries to manage library holdings).

During this meeting retiring ASFA Editor in Chief, Richard Pepe was presented with an IODE Achievement Award in recognition of his role in making ASFA a successful and
comprehensive bibliographic reference tool of choice for many marine and freshwater researchers. For IODE participation in ASFA as one of the founding organizations was its first activity in the area of marine information management. Today the ASFA database contains more than 1.3 million bibliographic references to the world’s aquatic science literature accessioned since 1971.

Ms Pikula then briefly introduced the work plan and budget for the next intersessional period: (i) ODIN MIM Coordinators to approach the ASFA Board referring to the substantial archives of grey material available in their libraries. Local experts could visit national institutions with portable equipment to undertake the scanning; (ii) to coordinate with ASFA the possible funding of this digitization effort through ODINCARSA LA; (iii) attention be given to providing training on digitization (and include course material in OceanTeacher). In this regard reference was made to the Courses “Preservation and Archiving of Digital Media”, “Digital Asset Management”, and “Funding for Digital Projects”.

Ms Pikula noted that the only financial requirement would consist of funding for the GE-MIM Chair to attend the 2011 ASFA Advisory Board meeting, tentatively planned to be held in Guayaquil, Ecuador, 5-9 September 2011.

ACTION: The Committee will be invited to consider the proposed work plan and budget and allocate funds accordingly.

6.2.9 OceanDocs and Aquatic Commons

This Agenda Item will be introduced by Ms Linda Pikula (Chair GE-MIM) referring to Document IOC/IODE-XXI/23 (OceanDocs and Aquatic Commons).

Ms Pikula will recall that IODE’s OceanDocs was established as a project through Recommendation IODE-XIX.11 and is designed to capture and make freely accessible the research output from members of the IODE Ocean Data and Information Networks (ODINS). It is a thematic digital repository of organization publications, scholarly materials, grey literature and other documents submitted by scientific researchers and librarians. It is an international, multi-institution open-access repository network, focused at present on marine and oceanographic literature. OceanDocs is available online through http://www.oceandocs.net. In addition to documents submitted by ODINAfrica (1522) and ODINCARSA LA (1459) also IODE documents (491) have been added. Also GEOHAB (Global Ecology and Oceanography of Harmful Algal Blooms) document are expected to be uploaded as from 2011 within the framework of the IODE-HAB cooperation through the HAIS (Harmful Algal Information System) [see also Agenda Item 9.1]. Approximately 500 documents are added per year. In 2010 over 403,000 downloads were observed (excluding crawlers).

The Committee will express its high appreciation to UHasselt (Universiteit Hasselt, Belgium) and in particular to Mr Marc Goovaerts, for the considerable in-kind support provided to the OceanDocs project.

In addition to contributing documents through the OceanDocs central repository, several institutions/Member States have established their own repositories (eg Russia, Ukraine, India, Fiji, China).
The International Association of Aquatic and Marine Libraries and Information Centers (IAMSLIC) (http://www.iamslic.org) developed a similar system called Aquatic Commons. The Aquatic Commons is a thematic digital repository covering the natural marine, estuarine/brackish and fresh water environments. It includes all aspects of the science, technology, management and conservation of these environments, their organisms and resources, and the economic, sociological and legal aspects. As of December 2010, Aquatic Commons contained nearly 4000 records. The total number of document download (August 2009 – September 2010) was 93,348.

In December 2010, within the framework of the long-standing collaboration between IAMSLIC and IODE the IOC Project Office for IODE in Oostende, Belgium agreed to host Aquatic Commons as part of IODE efforts to promote free and open access to marine scientific information to the global community. As part of the agreement the cooperation includes technical support provided by the IODE Project Office. IODE hosting began with implementing EPrints Version 3.2.4 with the official re-launch on 1 January 2011. The Aquatic Commons repository is expected to continue in growth and use. Upgrading and customization of the software will be carried out during the next inter-sessional period. Management for Aquatic Commons is now administered by a joint IODE/IAMSLIC Aquatic Commons Management Board.

Ms Pikula will then inform the Committee of the proposed work plan and budget for the next inter-sessional period. In this regard Ms Pikula will inform the Committee of the emerging cooperation with FAO within the framework of “AgriOcean DSpace”. This is a joint initiative to provide a customized version of DSpace using standards and controlled vocabularies in oceanography, marine science, food, agriculture, development, fisheries, forestry, natural resources and related sciences. The collaboration between FAO and UNESCO-IOC/IODE has the following goals: (i) promoting open access to scientific information on the topics of food, agriculture, development, fisheries, forestry, natural resources and related sciences for FAO and oceanography and marine sciences for UNESCO-IOC/IODE; (ii) ensuring the metadata quality of repositories and the use of thesauri and other forms of authority control; (iii) contributing to the development of sustainable repositories by the use of tools to make scientific publications (and later data) more accessible and visible; (iv) removing access barriers by encouraging the creation of new service providers based on existing and mature metadata and semantics technology. The communities supported by FAO and UNESCO-IOC/IODE are synergistic and the standards on metadata and controlled vocabularies are similar for both. A common repository development is a logical result. Hasselt University Library will create for FAO and UNESCO-IOC/IODE a new version called AgriOcean DSpace. It will integrate the previous developments of both Agencies in one customized version of DSpace 1.7, using the new features authority control, Solr based statistics and harvesting. The developments of FAO on AGRIS AP and thesaurus integration will complete AgriOcean DSpace. Finally an easy-to-install Windows-based version of AgriOcean DSpace will be distributed. AgriOcean DSpace will be made available in 2011.

A second undertaking will be the PublishedOceanData initiative (see Agenda Item 6.2.3). This system will utilize DSpace as its main software platform and one of the test sites will be hosted by the IOC Project Office for IODE, Oostende in close collaboration with, and with technical support from Hasselt University (Belgium).

A third undertaking will be the VOA3R project. VOA3R is the innovative research project for digital libraries and stands for: "Virtual Open Access Agriculture & Aquaculture Repository: Sharing Scientific and Scholarly Research related to Agriculture, Food, and Environment". IODE will collaborate in VOA3R through its cooperation with Hasselt University (Belgium). The general objective of the VOA3R project is to improve the spread of European agriculture and aquaculture research results by using an innovative approach to
sharing open access research products. This will be achieved by carrying out innovative experiments with open access to scientific agriculture and aquaculture contents and by developing and providing services that integrate existing open access repositories and scholarly publication management systems by means of a federation approach. Under a strict open access policy, the VOA3R service will connect libraries, archives and other publication systems by providing advanced search interfaces that include the specifics aspects of research work (methods, variables, measures, instruments, techniques, etc.) that are specific of the particular domain. The users of the VOA3R service are academics and researchers but also students and practitioners who either want to search for or to publish scientific research results (for these roles, learning material related to the application of scientific outcomes is also considered, as a sub-product of research). The project is targeted to the domain of Agriculture & Aquaculture, as it re-uses previous domain models for these domains, but the technology and models integrated are to a large extent transferable to other academic disciplines.

138 The VOA3R platform aims at reusing existing and mature metadata and semantics technology to deploy an advanced community-focused integrated service for the retrieval of relevant open content and data that includes explicit models of the scholarly methods and procedures used and of the practical tasks targeted by applied research (which represent a principal information need expression for practitioners). The service will enable researchers to formulate their information needs in terms of elements of the scientific methods established in their field (variables, techniques, assessment methods, kinds of objects of interest, etc.) combined with topical descriptions as expressed in metadata. The community approach will enable the enhancement of information seeking with extended evaluation elements (as for example, ratings, public reviews, social tagging and links to supporting or conflicting reports) that complement and go beyond the traditional, anonymous peer review process which results are not made available openly. The technology used will itself become open source, so that the model of the service can be adopted by enterprises (including SMEs) or other kinds of institutions as a value-added, community-oriented model for open access content.

139 Ms Pikula will inform the Committee about the proposed establishment of an IODE Steering Group for OceanDocs. This Group will advise the Committee on the global policy and strategy of OceanDocs. In addition the Group will work with the IODE/IAMSLIC Aquatic Commons Management Board to maximize interoperability and mirroring of such things as metadata fields and vocabularies and the planning of products and services which utilize the content and functionality of both repositories. Accordingly the Committee will be invited to consider Recommendation IODE-XXI.2 as detailed below:
Ms Pikula will inform the Committee of the financial requirements which will amount to US$ 28,000.

**ACTION:** The Committee will be invited to consider the proposed work plan, budget and Draft Recommendation

### 6.2.10 OceanExpert

This Agenda Item will be introduced by Ms Linda Pikula (Chair GE-MIM) referring to Document IOC/IODE-XXI/24 (OceanExpert).

Ms Pikula will recall that OceanExpert is a product developed by GEMIM in 1997 and continuously refined to advance with new technologies. It is maintained by the IOC Project Office for IODE and contains information on individuals and institutions involved in all aspects of Marine or Freshwater Research and Management worldwide. It is intended to be a tool for scientists, policy makers and anyone who needs to contact a marine or freshwater professional. OceanExpert currently holds information on 13,180 experts and 4,460 institutions (14/2/2011). It also includes job listings, upcoming events, individual scientist’s
publications listings, and links to the scientists IODE activities. Usage statistics indicate 30,000 uses per month. The url is: http://oceanexpert.org/. Ms Pikula will further note that OceanExpert is used intensively as the “people database” in most IOC web sites as part of the “PaperClip” software that enables the management of events, event participants and documents.

The OceanExpert development is guided by the IODE GE-MIM. The GEMIM-XI workplan indicates that a further investigation into the linking of OceanExpert records and publications to the OceanDocs Repository be made. This has been implemented recently. It could therefore be envisaged to utilize OceanExpert as an “authority list” or “vocabulary” for individual expert information, and similarly the institution record in OceanExpert could be utilized as an “authority list” as well. It is noted that other projects such as SeaDataNet use similar concepts for institutions (EDMO: European Directory of Marine Organizations). In this regard GE-MIM is exploring a collaboration with the International Association of Marine and Aquatic Science Libraries and Information Centers to establish a controlled list of worldwide marine institutions to be used in OceanExpert. The Committee may wish to consider collaboration with other organizations or projects such as IAMSLIC, SCOR, POGO, European Commission, ICES, etc.

Ms Pikula will inform the Committee that no specific budget has been identified for the further development of OceanExpert taking into account that is normal maintenance is covered by IOC ad the IOC Project Office for IODE.

ACTION: The Committee will be invited to consider the need to develop OceanExpert into a “authority list” for individual expert information and/or for institutional information and appropriate partnerships in this regard.

6.2.11 OpenScienceDirectory

This Agenda Item will be introduced by Ms Linda Pikula on behalf of Mr Marc Goovaerts, referring to Document IOC/IODE-XXI/25 (OpenScienceDirectory 2008-2010).

Ms Pikula will recall that the idea of the Open Science Directory started with a request of IOC/IODE to create a database of all accessible journals in oceanography and marine science. The A-to-Z-list of EBSCO was the perfect tool to organize this collection. It was an easy step to extend this collection to a general directory of journals accessible in developing countries. With the help of EBSCO, it was possible to create the Open Science Directory, which started on February 14, 2008. Access to scientific literature is very important for the scientific work of every scientist but is often extremely difficult to obtain in developing countries. As a result of different projects a large collection of e-journals is now available for researchers in developing countries. The number of Open Access Journals is growing steadily as we can see in the Directory of Open Access Journals. Major UN organizations like WHO, FAO and UNEP have their specific programs for the scientific institutions in low-income countries: HINARI, AGORA, OARE. Finally a lot of universities, institutes and publishers have access to supporting programs. The most important are INASP-PERii, eIFL, Highwire, JSTOR’s Developing Nations Access Initiative and eJDS. All these programs and projects have their own website and/or search engine. IOC/IODE and Hasselt University Library, with the support of EBSCO, is creating a single access point to all the journals contained in the different programs: The Open Science Directory – www.opensciencedirectory.org. The directory now contains over 20,000 journals with the aim to reach 25,000. From about 26,000 the number of visitor sessions has increased to over 279,000 in 2010.
Ms Pikula will then inform the Committee of the work plan for the next intersessional period. The first goal now is to complete the collection with the major collections of INASP-PERii and JSTOR’s Developing Nations Access. Then, we will try to enhance the service, by negotiating the accessibility of the different journals. Now we have to send the user to the portal of the different projects, where they have to do the query again. With direct links through their proxy server, which guarantees the authentication and identification of the user (important for the publisher), it could be possible to access directly the journal with one search, but still with an authentication. Also we could use the Open Science Directory as a link resolver, adding it for example to Google Scholar. Therefore we will negotiate with HINARI, AGORA en OARE to enhance the accessibility to their collection and then install the link resolver functionality. These realizations are only possible thanks to good cooperation between EBSCO, IOC and Hasselt University. Partners use their technical capacities and contacts to ameliorate the Open Science Directory.

Ms Pikula will inform the Committee that no financial support is required for the further development of the OpenScienceDirectory.

The Committee will express its appreciation to EBSCO and Hasselt University and urge them to continue this valuable product which provides essential services to scientists in developing countries.

ACTION: The Committee will be invited to comment on the progress made.

7. IODE CAPACITY BUILDING

7.1 OCEANTEACHER AND TRAINING ACTIVITIES

This Agenda Item will be introduced by Mr Greg Reed and Ms Linda Pikula referring to Document IOC/IODE-XXI/26 (OceanTeacher and Training activities).

The Committee will be reminded that OceanTeacher is the cornerstone of the IODE capacity building programme and supports all IODE training activities by providing training tools for data and information management. Training is complemented and supported by the OceanTeacher training system. The OceanTeacher Academy (OTA), which offers a teaching programme of courses related to oceanographic data and information management and the development of related products and services, commenced its first academic year in 2009-2010.

During the inter-sessional period (May 2009 – February 2011) a total of 15 data management and 10 marine information management courses were organized. Although most of the courses have been organized at the IOC Project Office for IODE in Oostende, an increasing number is now hosted by Member States.

During the next inter-sessional period approximately 10-12 courses (6 data management, 6 information management) courses will be organized.

It will be recalled that funding for the courses is sourced mainly from the OceanTeacher Academy project (funded by the Government of Flanders through the UNESCO FUST programme) and the direct funding contributed by the Government of Flanders to the IOC Project Office for IODE (through the Flanders Marine Institute). However the Committee will be informed that increasingly partnerships have been
established between IODE and other programmes or organizations (eg IOC ICAM, EUMETSAT, NOAA, WMO, JCOMM,…) that enable the pooling of resources.

The Committee will be reminded that Ocean Teacher is maintained by a small core of data and information management specialists. To ensure its continued success, Member States are urged to contribute to OceanTeacher, through the provision of content to the Digital Library, the provision of training material and course development for the Classroom, or participating as instructors at OTA courses.

**ACTION:** The Committee will be invited to recommend ways and means to increase the number of content providers and lecturers for OceanTeacher.

### 7.2 IODE’S REGIONAL CAPACITY BUILDING PROJECTS: ODIN

#### 7.2.1 Ocean Data and Information Network for Africa (ODINAFRICA)

Mr Odido will introduce this Agenda Item by referring to Document IOC/IODE-XXI/27 (ODINAfrica Progress Report). The implementation of the fourth phase of ODINAFRICA-VI begun at a slow pace in 2009, but has now picked up. Assessments of capacities for implementation of planned activities had been undertaken through questionnaires, assessment missions, and national and regional assessment meetings. Partnership Agreements had been processed and funds provided to institutions in 17 participating countries to enable them organize national Coordination meetings to identified priority issues to be addressed in ODINAFRICA-IV, embark on development of national coastal and marine atlases, and update the products and services developed in the earlier phases.

Experts from ODINAFRICA-IV institutions participated in Ocean Teacher Academy training courses to improve their skills in various aspects of marine data and information management. Good progress was made in the development of the Coastal and Marine Atlases, with four training courses held in May 2010 (Oostende, Belgium), July/August 2010 (Mombasa, Kenya), November 2010 (Oostende, Belgium) and February 2011 (Oostende, Belgium). National Atlas teams were established in most of the countries and data mining and processing begun in earnest. An ODINAFRICA Marine Information Management Planning workshop was held in Dakar, Senegal from 29 November – 2 December 2010 to agree on the Library Management software to use, and finalize work plan for information management activities in the current phase of ODINAFRICA. The work on the development of the African Register of Marine Species will commence in 2011, with support from OBIS. Collaboration with various projects and organizations in Africa was developed and/or strengthened. These include the four LME projects (ASCLME, BCLME, CCLME and GCLME), the Western Indian Ocean Marine Sciences Association, and UNEP.

The ODINAFRICA Steering Committee identified the following broad areas to focus on during each year of implementation of ODINAFRICA-IV:

- **2009:** National Assessments and putting in place management structures at the Regional level.
- **2010:** Finalization of National Assessments, Identification of priority issues to address, Data Mining and commence development of National Marine Atlases.
- **2011:** Completion of National Marine Atlases, commencement of work on regional atlases and national ocean data portals. Training on information management, focusing on library software. Migration from of library databases from INMAGIC to ABCD and AgrOcean/DSpace. Training on communication.
and outreach skills. Update and maintenance of other project databases and services.

2012: Completion of regional atlases and national ocean data portals, development of scenarios and forecasts and incorporating them in the marine atlases. Completion of library databases, update of experts, institutions and databases as well as the marine biodiversity databases

2013: Development of regional ocean data portals, publication of the African Marine Atlas book, finalization of ODINAFRICA-IV

The implementation of activities related to development of scenarios, forecasts and predictions, as well as “outreach and communications tools” will require skills that the ODINAFRICA NODC’s do not have at present. The project looks forward to collaboration with other NODCs that have experience in these fields.

**ACTION:** The Committee will be invited to comment on the progress made and on the work plan.

### 7.2.2 Ocean Data and Information Network for the Caribbean and South America regions (ODINCARSA)

This Agenda Item will be introduced by Mr Ariel Troisi and Mr Ramon Roach, referring to Document IOC/IODE-XXI/28 (*Ocean Data and Information Network for the Caribbean and Latin America – ODINCARSA-LA*).

Mr Troisi will recall the achievements and shortcomings since the inception of ODINCARSA in October 2001 and, in particular, the decisions and results of the activities during the inter-sessional period.

On December 7-10, 2009, an ODINCARSA Planning Meeting was held at the Instituto de Investigaciones Oceanológicas (IIO) of the Universidad Autónoma de Baja California with representatives from nine Member States. At the meeting the status of ODINCARSA, data and information management capacity, needs and requirements were assessed, the main goals and objectives were revisited and reviewed and an implementation plan was discussed and agreed upon. It was further decided to designate two Regional Coordinators, one for data management and another for marine information management (Mr Ariel Troisi and Ms Andrea Cristiani), and rename the network ODINCARSA-LA.

During the present intersessional period, 29 trainees participated in Data Management capacity enhancement activities and 16 in Marine Information Management. Two expert visits were carried out to Member States and additional support was provided via electronic means to several NODCs. Additionally the IODE OceanDataPortal was promoted in the region. ODINCARSA-LA also had an active participation in the 3rd SPINCAM Project Steering Group Meeting through the participation of Mr Ariel Troisi.

Further regarding Marine Information Management Mr Troisi will inform the Committee that Ms Cristiani attende GE-MIM-XI (May 2010). An OceanDocs Latin America meeting was held 16-17 October 2010 in Mar del Plata, Argentina prior to the 36th IAMSLIC Conference.

ODINCARSA-LA contributed to improving the generation and provision of ocean data and information products and services to different users by sharing expertise, knowledge transference and capacity enhancement.
Mr Troisi will call attention of the Committee to important challenges remaining in the region such as the development of partnerships, close interaction with OBIS as well as with different IOC Programs and other relevant organizations.

Mr Roach will inform the Committee that August 2010 was an important month for the development of the Caribbean Marine Atlas (CMA) project, with the completion of the first Planning and Review workshop in Castries, Saint Lucia from August 2nd to the 5th. The workshop brought together nearly all of the regional experts who have been involved in training activities from the inception of the CMA project as well as potential new members from Cayman Islands. The meeting also benefitted from interactions and discussion with an invited coastal web atlas expert, Dr. Marcia Berman of the Center for Coastal Resources Management, Virginia Institute of Marine Science at the College of William and Mary in the US. Attendees were challenged to remain committed to the project and urged to be deeply involved in the next phase of the CMA, which would include the further development and publishing of the regional atlas, and the development of national atlases within the partner countries.

The meeting was very positive and re-energized the participants for the work to come. In addition, several goals were achieved over the course of the workshop including: (i) a review of the progress of the CMA and were given a demonstration of the atlas prototype; (ii) a better understanding of the challenges, benefits and goals of web atlases and environmental data dissemination platforms in general; (iii) identified the necessary inputs (area of focus, data partners, themes, functionality) for the development of their respective national atlases; (iv) determined the steps required to implement a national atlas (workplan) and developed a tentative timeline (schedule). In addition, immediately following the planning and review workshop the first national stakeholder event for a CMA partner country was held on the 6th of August (also in Castries Saint Lucia), to introduce local coastal and marine data stakeholders to the concepts of web-based coastal atlases and the benefits of sharing institutional data within a national system. Those in attendance included representatives from the major stakeholder groups, i.e. government, private sector, and IGOs. Feedback was obtained from each group regarding the types of information they collected and managed, their resource issues and possible solutions, their willingness to actively participate in the Saint Lucia national atlas program, and precisely what datasets they had available for integration within the national system. This feedback provides a clear indication that not only would a national atlas of marine and coastal data be highly useful and substantially improve decision-making in the area of environmental management, but that the national atlas could be the springboard for the national GIS system Saint Lucian environmental managers have been pushing for, and drive regional spatial data infrastructure development. Other national stakeholder meetings are planned for the remaining partner countries throughout 2011.

Mr Troisi will then inform the Committee of the proposed work plan and budget for the next inter-sessional period. In the area of data management this will include: (i) establish and support new NODCs and continue supporting those existing; (ii) designate/update IODE national coordinators for data management; (iii) improve capabilities to access and use real time and near-real time data to generate products and provide services; (iv) Development of a regional metadata base and query application; (v) improve IODE NODC-OBIS interaction at the national and regional level; (vi) development the regional atlas application for the CMA; (vii) develop national atlases within participating CMA countries. In the area of marine information management (MIM) the focus will be on the OceanDocs graphic user interface and Serial Latin-American Publications in Marine Science, Aquatics and Fisheries.

Mr Troisi will then outline the required financial resources for the work plan which amount to US$ 205,800.
7.2.3 Ocean Data and Information Network for the Central Indian Ocean Region (ODINCINDIO)

This Agenda Item will be introduced by Mr Mika Odido, IODE regional programme coordinator. He will that the Committee, at its 20th Session, had instructed the Secretariat to follow-up with communications to IODE and IOC national contacts in the region, as well as to organize a meeting for Member States from the region during the 25th Session of the IOC Assembly (June 2009). A meeting of ODINCINDIO Member States was called together during the 25th Session of IOC Assembly. There the secretariat was requested to send communications to all IOC national contacts in the region to commence communication and revitalization of ODINCINDIO.

It must be concluded that the initiative to contact IOC contacts in the region has not resulted in sufficient responses to warrant the re-activation of ODINCINDIO.

ACTION: The Committee will be invited to comment on the problematic situation regarding ODINCINDIO region and recommended action, including alternative ways of actively involving the interested member states from the region in the activities of IODE.

7.2.4 Ocean Data and Information Network for European Countries in Economic Transition (ODINECET)

This Agenda Item will be introduced by Ms Olga Akimova (ODINECET regional coordinator) referring to Document IOC/IODE-XXI/30 (Ocean Data and Information Network for the European Countries in Economic Transition – ODINECET).

Ms Akimova will report on progress made with the ODINECET work plan during the inter-sessional period. This includes (i) a three-day ODINECET review and planning meeting was held in Oostende; (ii) 15 students from the region participated in OceanTeacher Academy courses in 2010; (iii) E-repositories were created and/or updated: IBSS, CEEMaR and new input centres were identified; (iv) A Koha e-catalogue pilot was started at IBSS; (v) a Union catalogue system, using the IMIS software developed by the Flanders Marine Institute was implemented involving 22 marine libraries in the region; (vi) an equipment grant was provided by IODE to institutions in the region; (vii) cooperation with the ODINBlackSea project is being discussed; and (viii) ASFA input centers from the ODINECET group provide links full-text documents from CEEMaR and IBSS repositories in ASFA records.

Ms Akimova will then introduce the ODINECET work plan and budget for the next inter-sessional period. The proposed work plan will include (i) updating of the ODINECET web site; (ii) participation in OceanTeacher training courses; (iii) organization of ODINECET coordination meeting in 2011, 2012 and 2013; (iv) Continue submission of documents into CEEMaR and IBSS repositories; (v) providing technical and equipment support to CEEMaR partners; (vi) organizing a meeting of Russian aquatic libraries and information centres staff at VNIRO, Moscow; (vii) installation of Koha software in ODINECET partner institutions; (viii) updating of the ECET Union catalogue including foreign titles stored in ODINECET partner libraries; (ix) digitization of rare monographs related to marine sciences held by ODINECET partner libraries.

Ms Akimova will inform the Committee that the requested budget to implement the above work plan will amount to US$ 76,600.
7.2.5 Ocean Data and Information Network for the Western Pacific region (ODINWESTPAC)

This Agenda Item will be introduced by Prof. Shaohua Lin (ODINWESTPAC regional coordinator), referring to Document IOC/IODE-XXI/31 (Ocean Data and Information Network for the Western Pacific region (ODINWESTPAC)).

Prof. Lin will report to the Committee that China has continued to coordinate ODINWESTPAC since WESTPAC-VII held in Malaysia in May 2008. She will then report on the activities undertaken during the inter-sessional period: (i) collection of information on ODINWESTPAC contact points in 11 Member States (Australia, Cambodia, China, Indonesia, Japan, Korea, Malaysia, Russia, Thailand, United Kingdom and Vietnam); (ii) establishment of 3 working groups at NMDIS to support ODINWESTPAC (external contact and training group, information group, data group); (iii) procurement of equipment for, and creation of the ODINWESTPAC web site by NMDIS; (iv) development of data services including Chinese coastal station data, Chinese session survey profile data, polar data obtained by Antarctic investigation by Chinese research vessel, other regional and international cooperation programme and project data, marine data products; (v) cooperation with NEAR-GOOS and SEAGOOS has been discussed; (vi) cooperation with IODE ODP by installing the data provider on the ODINWESTPAC server.

Prof Lin will report that most proposed activities are progressing slowly due to limited interest shown by the Member States. In addition Member States are slow to provide data to be made available through the ODINWESTPAC web site. Additional training also needs to be provided.

Prof Lin will inform the Committee on the proposed work plan and budget for the next inter-sessional period. This includes (i) continue contacting Member States in the region and invite them to participate in ODINWESTPAC; (ii) continue inviting Member States to make their data and information available through the ODINWESTPAC web site; (iii) organize the 2nd and 3rd Meeting of the ODINWESTPAC Working Group (2011, 2012)); (iv) organize a regional training course (2011) in mastering the fundamental methods of marine data and information collecting, processing, management, and data and information uploading, downloading and application in order to prepare for their active participation in ODINWESTPAC data and information sharing; (v) collect Cruise Summary Reports (CSRs) in the region and make this information available; (vi) prepare a directory of ocean and coastal observations, research and management projects and programmes implemented in the region (not limited to IOC activities); (vii) prepare a directory of marine libraries and ocean publications, a directory of research institutions, experts and regional e-repository of scientific publications published by WESTPAC experts in the region; (viii) enhance cooperation with NEAR-GOOS, NOWPAC, SEAGOOS etc. and provide Data Management Guides.

Prof Lin will inform the Committee that the required financial support will amount of US$ 80,000.
7.2.6  ODIN-Black Sea

Dr V. Vladymyrov will introduce this Agenda Item by referring to Document IOC/IODE-XXI/32 (Ocean Data and Information Network for the Black Sea Region (ODINBLACKSEA)).

He will remind the participants that the Ocean Data and Information Network for the Black Sea (ODINBLACKSEA) Pilot Project was established formally during the Nineteenth Session of the IODE Committee (Trieste, Italy, March 2007) through the Recommendation IODE-XIX.10. All riparian Black Sea countries are the participants of the project.

Dr Vladymyrov will outline the activities that had been planned for 2009 – 2011, giving details of what had been implemented: (i) A preliminary review presenting the results of analysis of the structure and state of the Black Sea Region National Oceanographic Data Centers was done. (ii) The ODINBLACKSEA project website was developed in order to assist the coordination of project activities, as well as to create awareness and to promote the project. (iii) The application of the E2EDM technology to integrate the non-homogeneous local data systems into unified distributed marine data system that will provide the transparent exchange between these local systems is ongoing. (iv) Organization of working collaboration with the ODINECET IODE Project was done, (v) additional E2EDM training (Obninsk, Russia, March 2009) was organized.

He will report that the ODINBLACKSEA Project Steering Committee noted the significant progress that has been made in implementation of activities since March 2009 and the ODINBLACKSEA Steering Committee agreed that ODINBLACKSEA will continue working with the objectives defined at its inception in 2007.

Dr Vladymyrov will then inform the Committee of the proposed work plan for the next inter-sessional period: (i) updating of the ODINBLACKSEA web site; (ii) strengthening of ODINBLACKSEA partner cooperation in IODE ODP; (iii) organization of ODINBLACKSEA Steering Group meetings in 2011, 2012 and 2013; (iv) review and analyze the structure and state of the Black Sea Region National Oceanographic Data Centers and their web sites.

Dr Vladymyrov will inform the Committee that the required financial support will amount of US$ 27,000.

ACTION: The Committee will be invited to consider the proposed work plan and budget and allocate funds accordingly.

7.2.7  Regional Network of Pacific Marine Libraries (ODIN-PIMRIS)

Ms Susana Macanawai, the ODIN-PIMRIS Project Coordinator will introduce this Agenda Item, referring to Document IOC/IODE-XXI/33 (Ocean Data and Information Network for the Pacific Islands Region (ODIN-PIMRIS)).

ACTION: The Committee will be invited to consider the proposed work plan and budget and allocate funds accordingly.
She will recall that the ODIN-PIMRIS project was established in 2008 but formally during the Twentieth Session of the IODE Committee (Beijing, China May 2009). The ODIN-PIMRIS project combines existing information sources developed by Pacific regional and international agencies such as the Secretariat of the Pacific Community (SPC), Forum Fisheries Agency (FFA), South Pacific Regional and Environmental Programme (SPREP) and the South Pacific Applied Geoscience Commission (SOPAC). Maria Kalenchits, the founding coordinator of ODIN-PIMRIS resigned from her position and left the University of the South Pacific in April 2010 with her replacement, Susana Macanawai taking up office and coordination of ODIN-PIMRIS in November 2010.

She will inform the Committee that the first phase of the ODIN-PIMRIS pilot project can be considered successful as the main objectives of the project were achieved through the creation of the Pacific Islands Marine Portal – http://www.pimrisportal.org, establishment of national fisheries/marine e-repositories in selected Pacific Island countries (Cook Islands, Kiribati, Samoa and Solomon Islands), national and regional awareness and promotional activities undertaken and several skills training and advisory expert visits were conducted.

Ms Macanawai will further inform the Committee that the University Librarian (Sin Joan Yee) had temporarily taken over the management of the project from April 2010 (when Maria Kalenchits left) and was unable to implement planned activities of 2010 (Phase II) due to very demanding and tight pre-planned work schedules in addition to delays within the University’s appointment process. Therefore, project activities of Phase I (2008-2009) will be reviewed in May 2011 and planned activities for 2010 will now be implemented in 2011.

These activities include (i) the regional review meeting for Phase I (2008-2009), (ii) e-repository training for Phase II countries, (iii) country visits and technical support to Phase II countries, (iv) the establishment of a scholarship scheme (Certificate level) to support library/information skills development, and (v) plans for a possible digitization project for all Pacific Island countries participating in the ODIN-PIMRIS project.

Ms Macanawai will inform the Committee that the required financial support will amount of US$ 110,500.

**ACTION:** The Committee will be invited to consider the proposed work plan and budget and allocate funds accordingly.

7.3 EMERGING NEEDS IN CAPACITY BUILDING

This Agenda Item will be introduced by Mr Greg Reed (IODE Co-Chair) and Ms Linda Pikula. They will inform the Committee that the purpose of this Agenda Item is to identify emerging areas in the field of oceanographic data management and marine information management (eg related to new user service requirements, new data types, etc) that require training or other capacity development. They will invite the Committee to introduce relevant items.

**ACTION:** The Committee will be invited to consider the proposed items and to recommend how to address emerging needs.
This Agenda Item will be introduced by Mr Greg Reed. He will inform the Committee that, as mentioned under agenda item 7.1 the IODE Secretariat has made active invitations to invite other IOC programmes to utilize the ODIN platforms as IOC-wide capacity development frameworks, to jointly organize training courses, e.g. at the IOC Project Office for IODE, Oostende, and to utilize the OceanTeacher software platform to manage training content.

These invitations have been responded to positively by IOC/HAB, IOC/MSP (Marine Spatial Planning) and IOC/Tsunami. In February 2011 a 2-day workshop was organized with the IOC/MSP team to provide hands-on training in the OceanTeacher software platform. A similar workshop will be organized in April for the tsunami team. Furthermore one or two MSP training courses will be organized in 2011 at the IOC Project Office for IODE.

Cooperation between IODE/ODINs and other IOC programmes has met with less success. Cooperation between ODINAFRICA and GOOS Africa has been minimal (except for cooperation with GLOSS Africa).

The Committee will also be reminded that one of the objectives of the OceanTeacher project is to assist regions with the establishment of regional training centres. These centres could be focused on IODE but also on other IOC programmes. OceanTeacher could assist these emerging centres with its OceanTeacher software platforms as well as with organizational assistance. In this regard it will be noted that the “Regional Training and Research Centre on Ocean Dynamics and Climate (hereinafter referred to as “ODC Centre”)” has been established in the First Institute of Oceanography, State Oceanic Administration of China. As per the Agreement signed by both parties, “the objectives of the Centre shall be to enhance the regional research capacity and capability on ocean dynamics, air-sea interactions, climate change and numerical modelling through, among others, provisions of regular training courses in English once a year to around 15-20 junior scientists and doctoral/master students mainly from the developing Member States of IOC in the Western Pacific”. A first course is planned to take place 16-20 June 2011. So far no cooperation has been established between the IOC Project Office for IODE (an invitation was sent to the WESTPAC Secretariat in Bangkok in February 2011). IOC Regional Subsidiary Bodies and ODINs may wish to consider the establishment of regional training centres in close collaboration with OceanTeacher.

The Committee will also be informed that Dr Ehrlich Desa, Deputy Executive Secretary and responsible for the IOC Capacity Development programme has retired in December 2010.

ACTION: The Committee will be invited to consider ways to promote close cooperation between IODE and other IOC programmes related to capacity development. ODINs may wish to consider the establishment of regional training centres, in close collaboration with OceanTeacher.
8. IODE ORGANIZATIONAL REFORMS ISSUES

8.1 REPORT ON THE FOLLOW-UP TO THE IODE REVIEW

This Agenda Item will be introduced by Dr Malika Bel Hassen (IODE Co-Chair). She will report on the outstanding review recommendations and the actions taken.

8.2 IODE ARRANGEMENTS FOR THE LONG-TERM SECURE ARCHIVAL OF DATA AND INFORMATION

This Agenda Item will be introduced by Dr Lesley Rickards (Member WDS Scientific Committee).

She will recall that the International Council of Scientific Unions (now International Council for Science) established the World Data Center system to serve the IGY (International Geophysical Year) of 1957-1958, and developed data management plans for each IGY scientific discipline. Multiple Centers were established to guard against catastrophic loss of data, and for the convenience of data providers and users. Three World Data Centers for Oceanography were established: Silver Spring, USA; Obninsk, Russian Federation and Tianjin, China. These centres have been collaborating with IODE as long-term permanent archives of oceanographic data since their establishment.

A new ICSU World Data System (WDS) has been created through a decision of the 29th General Assembly of the International Council for Science (ICSU). WDS builds on the 50-year legacy of the ICSU World Data Centre system (WDC) and the ICSU Federation of Astronomical and Geophysical data-analysis Services. Many existing WDCs and Federation Services, as well as numerous other data centres, services and activities, have already expressed interest in becoming part of the new system.

The WDS concept aims at a transition from existing stand-alone WDCs and individual Services to a common globally interoperable distributed data system, that incorporates emerging technologies and new scientific data activities.

The new system will build on the potential offered by advanced interconnections between data management components for disciplinary and multidisciplinary scientific data applications. Applications for the new WDS are already being investigated, including the WDC online portal which is being considered as a proof of concept for an element of the new system.

WDS will enjoy a broader disciplinary and geographic base than previous ICSU bodies and will strive to become a worldwide ‘community of excellence’ for scientific data. To this end, WDS will work closely with ICSU’s Committee on Data for Science and Technology (CODATA) and with the new ICSU Strategic Coordinating Committee for Information and Data (SCCID).

The WDS Vision is as follows: "The new WDS will support ICSU’s mission and objectives, ensuring the long-term stewardship and provision of quality-assessed data and data services to the international science community and other stakeholders." SCID Report 2008.
8.3 **JCOMM ad hoc TASK TEAM ON RNODCs AND SOCs**

This Agenda Item will be introduced by Ms Sissy Iona (Chair JCOMM DMCG) referring to Document IOC/IODE-XXI/35 (JCOMM ad Task Team on RNODCs and SOCs).

She will remind the Committee that according to the JCOMM/DMCG-I V Report, Action 62 - 8.1.3. (16), an ad hoc task team was convened to address the RNODCs and SOCs issue and develop a proposal for integrating them into a single system of dedicated centres contributing to the ODP, and with specialized functions (archive, QC, monitoring, etc.).

According to this report (see Appendix A) which is not responsible for providing any funding recommendations that will impact RNODCs and SOCs, or the RTMC, the ad hoc Task Team recommends the integration of these centres into a more unified system of (tentatively) “Global Data Assembly Centres” (GDACs) for all drifting buoys in a similar role that Argo and OceanSITES GDACs server for their programmes.

The potential benefits the proposal are analyzed in the full report and is expected that such a centralized scheme can assure for the most up-to-date and synchronized versions of the data and their catalogues. The experience of existing DACs in receiving, archiving real time data and applying delayed mode quality control will be implemented in the future scheme.

To discuss this proposal and its implementation, the Ad Hoc Task Team recommends that representatives from the RNODC/DB and SOC/DB schedule a workshop with representatives from this Task Team, the RTMC, PIs, DACs and GDACs to discuss the implementation of such a system, determine the Information Technology impacts for both Centres, and develop a timeline for achieving Initial Operational Capability (IOC) and Full Operational Capability (FOC). The following are suggested as additional specific elements of the proposal for discussion at the workshop:

- SOC/DB will be a Real-Time GDAC for the data within 30 days.
- ISDM will be a Delayed Mode GDAC for the data 30 days passed and received from Real-time GDAC.
- AOML could be a special analyzed GDAC to assist other data centers including GDACs and other projects to develop special products and QC procedures/techniques.

It is also expected that an installation plan of ODP servers in the system will be discussed at the workshop considering the capacities of the centers which will participate in the system.

**ACTION:** 1 The Committee is invited to consider the proposal and then task the Ad Hoc Task Team to draft a Recommendation for JCOMM-IV, including ToR of such centres, plus background information.
8.4 IODE DATA AND INFORMATION CENTRES QUALITY MANAGEMENT AND CERTIFICATION

This Agenda Item will be introduced by Dr Lesley Rickards (IODE Past-Chair). She will recall that IODE-XX had tasked the IODE Officers to look into this matter and report back to the next Session, and also to monitor the accreditation and certification process of data centres established by the WDS.

**ACTION:** The Committee will be invited to consider the development of a quality management framework for IODE data centres, possibly taking WMO’s QMF as an example. The Committee will be requested to consider the establishment of an inter-sessional working group or Task Team to explore this matter further.

9. IMPLEMENTATION OF THE IOC STRATEGIC PLAN FOR OCEANOGRAPHIC DATA AND INFORMATION EXCHANGE: COOPERATION WITH OTHER PROGRAMMES AND ORGANIZATIONS

9.1 COOPERATION WITH IOC PROGRAMMES

This Agenda Item will be introduced by Ms Gwen Moncoiffé (Chair GE-BICH). He will briefly inform the Committee on ongoing cooperation with other IOC Programmes. As reported during IODE-XX cooperation has been established with the IOC HAB (Harmful Algal Blooms) programme through the Harmful Algal Information System (HAIS). The Harmful Algal Information System, HAIS, will when fully established consist of access to information on harmful algal events, harmful algae monitoring and management systems worldwide, current use of taxonomic names of harmful algae, and information on biogeography of harmful algal species. Supplementary components are an expert directory and a bibliography. The expectation is that it will be a service to scientists, managers of regulatory monitoring programmes, and to policy administrators to access to high quality data on current taxonomic names of harmful algae, the biogeography of harmful species and occurrence of harmful algal events, together with details of monitoring and management systems worldwide, directories of experts, and bibliography on harmful algae. The HAIS System is being built by IPHAB and IODE in cooperation with WoRMS, ICES, PICES and ISSHA. The Joint IPHAB/IODE Task Team on the development of the Harmful Algal Information System oversees the development. The network and HAB related groups within IOC, ICES, PICES etc gives an unique position at a cross road of very diverse and multidisciplinary sets of data. HAIS comprises:

- HA Events with ICES, PICES et al (HAEDAT)
- Biogeography in OBIS with ISSHA (HABMAP)
- Taxonomy with WoRMS (‘IOC Taxonomic Reference List on Toxic Species’ which is the back bone of HAIS)
- References with ASFA and OceanDoc
- Expert Directory with IODE (OceanExpert)
- Monitoring and management design with ICES (MONDAT)

During 2009-2010 the IPHAB Taxonomic Task Team meet in October 2010 to update the ‘IOC Taxonomic Reference List on Toxic Species’ in WoRMS. Action has been taken to have all ICES Countries update and complete submissions to HAEDAT before
March 2011. HABMAP was re-launched jointly with OBIS at 14th Int Conference on HAB at Crete Nov 2010 (joint poster and Editors meeting) and the HAEDAT format has been customized to OBIS. A FP7 proposal entitled SpEcoSS (SPecies to ECOsystems using Semantic Standards) has been submitted with IOC HAB Centre as partner. If approved it will contribute to further develop elements of HAIS. A FP7 ‘Initial Training Network’ Proposal has been submitted IOC UNECO as partner and will if approved provide a 2 year post docfull time to compile and analyze data for HAIS primarily but not exclusively from EU. The implementation of these projects will in 2011-2013 involve the staff at the IODE PO. If thetwo projects are funded HAIS is expected to progress significantly. If not funded focus in 2012-2013 will be at ensuring continuous data submission to HAEDAT, stepwise establishment of HABMAP in OBIS and maintenance of the ‘IOC Taxonomic Reference List on Toxic Species’. This will require technical support from IODE PO staff at same level as during 2009-2010.

**ACTION: The Committee will be invited to comment on cooperation with IOC/HAB and HAIS in particular.**

### 9.2 COOPERATION WITH WMO

This Agenda Item will be discussed under Agenda Item 6.2.2.1.

### 9.3 COOPERATION WITH POGO

This Agenda Item will be introduced by Mr Greg Reed. He will recall that Dr Murray Brown has lectured a data management class (2009-2010 season) during the “Centre of Excellence Student Training in Observational Oceanography” organized at the Bermuda Institute of Ocean Sciences (BIOS) within the framework of the Nippon Foundation (NF) - Partnership for Observations of the Global Ocean (POGO) Centre of Excellence (C of E) at the Bermuda Institute of Ocean Sciences (BIOS). The purpose of this programme is to expand world-wide capacity to observe the oceans, to develop human resources in developing countries; to expand international networking in ocean sciences, with an emphasis on training young scientists from developing countries; and to strengthen ocean networking relations between developed and developing countries. POGO has expressed the desire to formalize the cooperation between IOC/IODE and NF-POGO.

**ACTION: The Committee will be invited to consider the proposed formal cooperation between IOC/IODE and NF-POGO.**

### 9.4 COOPERATION WITH SCOR

This Agenda Item will be introduced by Mr Peter Pissierssens, Technical Secretary. He will report that cooperation with SCOR has developed extremely well. He will refer to the SCOR/IODE/MBLWHOI Library Project on Data Publication, discussed under Agenda Item 6.2.3.

In addition IODE was invited to the “Conference on Developing a Global Strategy for Capacity Building in the Ocean Sciences”, Bremen, Germany, 16-18 August 2010. The purpose of the meeting was to bring together representatives of organizations interested in capacity development (CD) for ocean research and observations, to discuss their experiences with past and existing activities, to identify new activities, and to discuss how the
organizations could work together to create a global strategy for capacity building for ocean research and observations. This was the first meeting to bring together representatives of the international organizations most active in CD for ocean sciences. The participants thank the University of Bremen’s Center for Tropical Marine Ecology (ZMT) for providing local support and for the organizations that funded their own participants. IODE was represented by Mr Peter Pissierssens. We were able to make a presentation on the IODE capacity building activities including the ODINs and OceanTeacher (Academy). The meeting identified a number of approaches to strengthen capacity and considerations for their implementation: (i) funding for participation in science meetings; (ii) grants for short-term training in ocean observations; (iii) grants for short-term training in ocean research; (iv) grants for training in data and information management; (v) Summer schools; (vi) training for professionals; (vii) training through research; (viii) shipboard experience; (ix) visiting professorships; (x) Centers of Excellence in oceanography training; (xi) leadership training; (xii) distance learning; (xiii) internships in international secretariat. Under the topic “Summerschools” IODE volunteered to set up a web-based portal where institutions providing summer school opportunities can enter such information and interested students can consult the database. The portal is available on http://www.oceansummerschools.org/. It has been launched in March 2011.

9.5  COOPERATION WITH ICSU

Mr Reed will recall that discussions on this item were held under Agenda Item 8.3.

9.6  COOPERATION WITH EUMETSAT

This Agenda Item will be introduced by the representative from EUMETSAT. He will inform the Committee that NOAA, IODE and EUMETSAT jointly organized the EUMETSAT-NOAA-IODE Training Course on the Use of Satellite Wind and Wave Products for Marine Forecasting (14-18 December 2009), which was held at the premises of at the IOC Project Office for IODE in Ostend. Given the success of this activity, this training event could be considered as the first step for further cooperation in the field of oceanography. EUMETSAT expressed its great satisfaction with the facilities and services offered by the Project Offices as well as with the co-sponsoring of the event. EUMETSAT prime objective is to provide its European Member States’ with meteorological satellite data, including those for climate monitoring and ocean applications. Recognizing that IOC and EUMETSAT already have been cooperating on various ocean-climate issues (e.g. JASON launching/operation, Ocean Colour research support, Indian Ocean GLOSS data transmission), EUMETSAT wishes to further extend its partnership with IOC.

On 23 June 2010 Ms Boram Lee (IOC) and Mr Peter Pissierssens (IOC/IODE) were invited to the EUMETSAT facilities in Darmstadt, Germany where they met with Dr. Mikael Rattenborg, Director of Operations; Mr Henk Verschuur, Senior Training Officer; Dr. Leo van de Berg, Meteorological Operations; Dr. Julia Figa Saldana, Product Operations; Dr. Kenneth Holmlund, Head of Met. Operations; Dr. Harald Rothfuss, EUMETSAT Data Centre; Dr. Volker Gartner, Head of User Services, and; Dr. Hans Bonekamp, Ocean Mission Scientist. EUMETSAT expressed its appreciation to the IOC training activities through the IODE Project Office in Ostend, and wished to continue and to expand the partnership for the future training courses. It was agreed that such a cooperation would be mutually beneficial and synergetic therefore both organization should extend the cooperation in the feasible areas. It was agreed that a second Training Course on the Use of Satellite Wind and Wave Products for Marine Forecasting should be organized, in 2011. A possible venue would be the IOC Project Office for IODE, Oostende. The objectives and expect results of this course coincide with the work of IOC/IODE in Ostend, as well as the JCOMM support for storm surge application. It was agreed that IOC, through IODE Project Office and JCOMM, will support this course, and continue to be involved in the organization.
EUMETSAT is planning to procure and operate a Synergie workstation, which can collect, process and visualise global meteorological and satellite data. Météo France developed these tools for general meteorology, aviation and marine applications. It was developed as a decision making tool for forecasting and warnings. It was discussed that training on the use of the Synergie station could be the subject of cooperation between IOC and EUMETSAT and might be used for training activities in other regions, e.g. in Africa.

The WMO Training department and EUMETSAT has been closely working together on the development of the training infrastructure for training on satellite meteorology through the Virtual Laboratory concept. Considering that IOC/IODE has been communicating with the WMO responsible officers to investigate the possibility to combine Ocean Teacher and Virtual Laboratory activities. IOC and EUMETSAT are ready to work closely in this area. It also was agreed that the OceanTeacher can be a very useful tool for a “blended learning”, combining the pre-study at home (through Ocean Teacher / VLab), on-site training and take-home work (through Ocean Teacher / VLab / Synergie workstation). It was also suggested by Peter Pissierssens that EUMETSAT provide content for OceanTeacher related to the use of the EUMETSAT Product Navigator. Reference is made to: http://www.eumetsat.int/home/Main/Access_to_Data/ProductNavigator/index.htm

**ACTION:** The Committee will be invited to consider opportunities for further cooperation with EUMETSAT and to identify concrete actions in this regard.

9.7 COOPERATION WITH IAMSLIC

This Agenda Item will be discussed under Agenda Item 6.1.2

9.8 COOPERATION WITH FAO

This Agenda Item will be discussed under Agenda Item 6.1.2 and 6.2.8

9.9 OTHERS (GEO/GEOSS, UNEP, WCRP, SOLAS, ...)

Members of the Committee will be invited to report on ongoing or proposed collaboration with other organizations.

9.10 IOC OCEANOGRAPHIC DATA EXCHANGE POLICY: IMPLEMENTATION BY MEMBER STATES AND COOPERATING PROGRAMMES

This Agenda Item will be introduced by Mr Robert Gelfeld. He will remind the Committee that the IOC Assembly had requested IODE to regularly report on the status of implementation by IOC Member States of the IOC Oceanographic Data Exchange Policy as adopted through Resolution IOC-XXII-6 (2003). Mr Gelfeld will inform the Committee that, in order to obtain this information, the following question was included in the online national report survey: “Has your country applied (in 2009 and/or 2010) the IOC Oceanographic Data Exchange Policy adopted as Resolution IOC-XXII-6 in 2003? (http://www.iode.org/policy).

Mr Gelfeld will report that Sixty-five Member States responded to this question in the online survey. 61% have applied the IOC Data Exchange Policy, 23% have not and 16% do not know. Though this shows that though the majority of reporting Member States have applied the IOC Data Exchange Policy, there is work to be down by the remaining Member States to have this policy in place. The timely, free and unrestricted international exchange of
oceanographic data and associated metadata is imperative for future of the oceanographic community. This policy should be reviewed by each Member State and should become part of their Oceanographic Data Policy.

**ACTION:** The Committee will be invited to discuss reasons why Member States are not applying the IOC Policy and how this could be remedied.

### 10. IODE PUBLIC AWARENESS

#### 10.1 IODE WEB SITES, BROCHURES, POSTERS AND PUBLICATIONS

230 This Agenda Item will be introduced by Mr Peter Pissierssens. He will inform the Committee that the IODE web site has been further developed. It uses a Joomla Content Management System, with custom-designed add-on features that allow the management of events, expert information, and documents. As mentioned in Agenda Item 6.2.10 the add-on software relies heavily on OceanExpert. In addition to the main IODE web site ([http://www.iode.org](http://www.iode.org)) a number of projects have established their own web presence. This is the case for most of the ODINs. Some are using the Joomla content management system software (indicated by ‘dynamic’ below) and can be easily edited by multiple users, whereas others are using static html:

- [http://www.odinafrica.org](http://www.odinafrica.org) (dynamic) (hosted by IODE Project Office)
- [http://www.iode.org/odinecet/](http://www.iode.org/odinecet/) (static) (hosted by IODE Project Office)
- [http://www.odinwestpac.org/](http://www.odinwestpac.org/) (hosted by NMDIS, China)


232 The IODE GE-BICH has created its own wiki on [http://sites.google.com/site/gebichwiki/](http://sites.google.com/site/gebichwiki/) to post detailed technical information on the various activities of the GE-BICH.

233 In other agenda items the various online service web sites have been discussed:

- [http://www.oceandataportal.org](http://www.oceandataportal.org) (hosted by IODE Project Office)
- [http://www.oceanteacher.org](http://www.oceanteacher.org) (hosted by IODE Project Office)
- [http://www.oceanexpert.org](http://www.oceanexpert.org) (hosted by IODE Project Office)
- [http://www.oceandocs.net](http://www.oceandocs.net) (hosted by IODE Project Office)
- [http://www.opensciencedirectory.net](http://www.opensciencedirectory.net)
- [http://www.oceansummerschools.org](http://www.oceansummerschools.org) (hosted by IODE Project Office)
- [http://www.aquaticcommons.org](http://www.aquaticcommons.org) (hosted by IODE Project Office for IAMSLIC)
- and the new OBIS web site [http://www.iobis.org](http://www.iobis.org)
Regarding publications Mr Pissierssens will report that during the inter-sessional period (May 2009-February 2011) the following documents were published by IODE:

- 2 reports of IOC Governing and Major Subsidiary Bodies (IODE-XX summary report and executive summary);
- 3 IOC Manuals and Guides
- 10 IOC Workshop Reports
- 3 Reports of IODE Groups of Experts
- 7 IOC Circular Letters

It will be noted that reports of Training Courses are no longer published as such as the content is available through OceanTeacher. It will be noted further that working documents for IODE meetings are not included in the above list, and that all documents (including working documents) are made available electronically through the IODE web site. Nevertheless the following documents were also made available in printed form (and are available upon request):

- Ocean Data Standards: Recommendation to Adopt ISO 8601:2004 as the Standard for the Representation of Date and Time in Oceanographic Data Exchange; 11th Feb 11/ IOC Manuals and Guides No. 54 - Volume 2
- Ocean Data Standards: Recommendation to Adopt ISO 3166-1 and 3166-3 Country Codes as the Standard for Identifying Countries in Oceanographic Data Exchange; 6th Jan 10/IOC Manuals and guides No. 54 - Volume 1

10.2 50TH ANNIVERSARY OF IODE IN 2011

Ms Sissy Iona will introduce this Agenda Item by referring to Document IOC/IODE-XXI/41 (50TH ANNIVERSARY OF IODE IN 2011).

She will remind the Committee that an inter-sessional working group (chaired by Greece) was established during the IODE-XX Session to propose a plan for the commemoration of the 50th Anniversary of IODE in 2011. The Officers at their Session on March of 2010 discussed the proposals and finalized the future actions.

Ms Iona will report on the following activities that were implemented during 2010:

(i) The Anniversary IODE 50th International Conference that will be held 21-22 March at Liege, Belgium aiming at the “customers” of IODE e.g. how IODE products and services are being used by various stakeholders. Detailed information about the Conference and the provisional agenda can be found at the web site (http://www.iode2011.be).

(ii) The anniversary logo that is used on all web sites, documents and promotional materials prepared for, and during 2011. It is available upon request from the IODE Secretariat

(iii) The Promotional Material that has been announced and produced so far by the IODE PO and the Member States.

She will report on the activities related to the final phase of the IODE 50th Anniversary International Conference as well as any other promotional activities dedicated to the anniversary event.
This Agenda Item will be introduced by Mr Greg Reed, Co-Chair. He will recall that the “IOC Strategic Plan for Oceanographic Data and Information Exchange (2008-2011)” was prepared by Dr Lesley Rickards, Mr Greg Reed as well as other IODE experts. The Strategy was adopted by the IOC Assembly at its 24th Session (2007) through Resolution XXIV-9 and the Strategy was subsequently published as IOC Manuals and Guides No. 51.

It will be recalled that the major elements of the Strategy are: The major elements of the Strategy are:

- Adherence to the IOC Oceanographic Data Exchange Policy;
- Governance by a management committee, aided by a technical task team, supported by data and information coordination units;
- A permanent long-term data archiving centre for all data, which operates to agreed standards;
- Recommended best practice for quality control, documented and made easily accessible and available;
- Acceptance and implementation of a set of interoperability arrangements, including technical specifications for collecting, processing, storing, and disseminating shared data, metadata and products;
- Interoperability between the different end-to-end systems for IOC data and with other systems (e.g. GEOSS, International Council for Science (ICSU), International Council for the Exploration of the Sea (ICES), Census of Marine Life (CoML)/Ocean Biogeographic Information System (OBIS), US Integrated Ocean Observing System Data Management and Communications (IOOS DMAC) system, SeaDataNet, etc.) through the use of service oriented architecture;
- To continue to develop Ocean Data and Information Networks (ODINs) backed up by OceanTeacher as a capacity building tool, whilst extending OceanTeacher through cooperation with WMO, JCOMM and others as appropriate;
- Development of appropriate metrics to help evaluate the data and information system; and
- Facilitation of proper citation of data sets by providing all the required elements of a citation including an unambiguous, unchanging reference.

Communication within and between IOC programmes, and with IOC’s partners, was highlighted as essential to ensure that a fully integrated data system rather than the current multitude of systems results. In order to promote communication and coordination between IOC programmes the “Data and Information Management Advisory Group” was established with Chairs of other IOC subsidiary bodies as members. Regrettably this Group has remained largely inactive.

A more successful outcome of the Strategy has been the development of the IODE Ocean Data Portal and JCOMM/IODE Ocean Data Standards pilot project, both discussed under separate agenda items. An unfortunate omission in the Strategy, as indicated under agenda item 6.1.2 was the lack of marine information management elements.

The Committee will be reminded that the current Strategy will expire at the end of 2011. The Committee is therefore invited to consider the need for a revision of the Strategy.
12. ANY OTHER BUSINESS

Under Agenda Item 2.1 the Committee will be requested to identify additional topics for discussion. These will be discussed here.


This Agenda Item will be introduced by Mr Greg Reed. He will inform the Committee that the funding through the UNESCO Regular Programme for the next inter-sessional period will cover two UNESCO biennia: 2010-2011 (35 C/5) and 2012-2013 (36 C/5). He will note that from the 35 C/5 allocation approximately $90,000 will be available for the remainder of 2011. For 2012-2013 it is expected that a total amount of $285,500 will be available, including $90,000 earmarked for OBIS. This represents a substantial increase for OBIS (which was allocated only $10,000 for 2010-2011).

In terms of extra-budgetary funding he will note that funding has been confirmed from the following sources (as on 15 February 2011):
- Approx. €400,000/year (of which approx. €180,000 is available for training courses and meetings) for the operations of the IOC Project Office for IODE, Oostende, Belgium [from the Government of Flanders, through the Flanders Marine Institute];
- $2,000,000 for the implementation of the ODINAFRICA-IV project [from the Government of Flanders, through the Flanders-UNESCO Trust Fund for Science] – ending 31/12/2013;
- $240,000 for the implementation of the Caribbean Marine Atlas project [from the Government of Flanders, through the Flanders-UNESCO Trust Fund for Science] – ending 31/12/2013;
- $670,000 for the implementation of the OceanTeacher Academy project [from the Government of Flanders, through the Flanders-UNESCO Trust Fund for Science] – ending 31/12/2013;
- $309,943 for OBIS [From the United States of America];
- $88,986 for OBIS [From Australia];
- $10,000 for OBIS [from Brazil].
- An additional commitment was made by Canada but has not yet been received.

IODE has been invited to participate in a few projects submitted to the European Commission for funding. They include SeaDataNet-II, iMarine (together with IOC/HAB), SpEcoSS - SPeCies to ECOsystems using Semantic Standards (together with IOC/HAB). At the time of preparation of the Action Paper no information was available on the review results of these submissions.

The Committee will be reminded that IODE is currently supported by only one UNESCO regular position (Peter Pissierssens). The two additional professional positions (Mr Mika Odido and Mr Aditya Kakodkar) are funded from ODINAFRICA and OceanTeacher extra-budgetary projects respectively. As indicated above these projects will end on 31/12/2013.

ACTION: The Committee will be invited to consider the need to revise the Strategy and to identify ways and means to produce a new document for the 2012 Session of the IOC Executive Council.
14. ELECTIONS OF CO-CHAIRS

The IODE Technical Secretary will introduce this item by referring to the IOC Rules of Procedure (Document IOC/INF-1166), and more particularly to Rule 25, para 3.

The Technical Secretary will inform the Committee that, in accordance with the above Rules, and taking into account that both Co-Chairs have completed two terms (two inter-sessional periods) new Co-Chairs need to be elected. He will inform the Committee that IOC Circular Letter No. 2360 was issued on 14 September 2010, inviting Member States to nominate candidates for the two Co-Chairs. The following nominations were received:

- Ms Sissy Iona (Greece)
- Mr Ariel Troisi (Argentina)

The CV and personal perspective on the future of IODE was posted on the IODE website on page http://www.iode.org/index.php?option=com_content&view=article&id=238%Aiode-xxi-candidatures-for-iode-co-chairs&catid=11&Itemid=155

ACTION: The Committee will be invited to elect two Co-Chairs

15. DATE AND PLACE OF IODE-XXII

Mr Greg Reed will invite the Committee to consider the date and place of the Twenty-second Session of the IODE Committee.

16. ADOPTION OF THE SUMMARY REPORT

The Committee will be requested to adopt the draft Summary Report of the Session, and the Resolutions and Recommendations.

17. CLOSURE

The Session will be closed on Saturday 26 March 2011.
## ANNEX I

### RESOURCE REQUIREMENTS 2011-2013 AS IDENTIFIED IN THE WORKING DOCUMENTS

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<th>Agenda</th>
<th>Project/Group</th>
<th>Item</th>
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<th>Requested 2012</th>
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### 15 IODE-XXII

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