

**Brief report to the IACMST Marine Environmental Data Action Group on the
18th Session of the IOC Committee on
International Oceanographic Data and Information Exchange (IODE)
Ostend, Belgium, 26-30 April 2005**

1. The IOC's International Oceanographic Data and Information Exchange (IODE) committee was established in 1961. The main objectives of the IODE Programme are (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; (ii) to ensure the long term archival, management and services of all marine data and information; (iii) to promote the use of international standards, and develop or help in the development of standards and methods for the global exchange of marine data and information, using the most appropriate information management and information technology; (iv) to assist Member States to acquire the necessary capacity to manage marine data and information and become partners in the IODE network; and (v) to support international scientific and operational marine programmes of IOC and WMO and their sponsor organisations with advice and data management services.
2. The UK was represented at IODE-18 by Garry Dawson (UKHO), Gaynor Evans (BODC), Lesley Rickards (BODC) and Pauline Simpson (SOC). IODE-18 was attended by 59 delegates from 31 Member States, 15 representatives of organizations, programmes and projects, and five observers. The current Chair (Lesley Rickards, UK) and Vice-chair (Ricardo Rojas, Chile) were elected to serve a second term during the session.
3. Over the last 40 years, IOC Member States have established over 60 oceanographic data centres. Collaboration with the ICSU network of World Data Centres has been, and remains close. The IODE data centres (i.e. the National Oceanographic Data Centres (NODCs)) underpin the activities of IODE; these centres handle a wide range of data types (e.g. physical, chemical, biological, geological/geophysical, marine meteorology); 30% of them are handling data in real time, and many are dealing with data relevant to GOOS and/or major science programmes.
4. Good progress has been made since IODE-17 in the technical arena with further developments towards a MarineXML and with a prototype 'end-to-end data management' system developed through the joint IODE-JCOMM ETDMP. Development of global databases was continuing in a number of projects, notably the Global Ocean Surface Underway Data (GOSUD) pilot project.
5. For capacity building there are significant successes with the continuing developments of Ocean Data and Information Networks (ODINs), in particular ODINAFRICA, now in its third phase, but also in ODINCARSA and the newly established ODINCINDIO. An associated activity is the development of ODIMeX – upgrading the existing OceanTeacher training package to include operational oceanography, biological data, remote sensing, GIS, etc.
6. IODE cooperates with many other projects and programmes, including JCOMM, GOOS, ICES, SCAR's Joint Committee on Antarctic Data Management (JCADM), NASA's Global Change Master Directory (GCMD), Ocean Biogeographic Information System (OBIS), Carbon Dioxide Information Analysis Center (CDIAC), Caspian Environment Programme (CEP), IAMSLIC and EURASLIC. Of particular note is the developing collaboration between the Regional OBIS Nodes and IODE's NODCs, and also the emerging links between JCADM's National Antarctic Data Centres and NODCs.
7. The IOC Project Office for IODE was opened on 25 April 2005, immediately prior to IODE-18. This facility has been provided by the Government of Flanders and City of Ostend (Belgium). The Office will act as a meeting venue, training centre and a communications hub. It will act as a forum and creative environment for developing

IODE and partner projects, programmes and organizations. Ten training courses are planned for 2005, including a joint JCOMM/IODE/GOOS training course on numerical modelling and data management.

8. The IODE Review took place during the inter-sessional period, with a Review Team led by Mr Dieter Kohnke (Germany). The Review Team provided 17 recommendations which IODE-18 discussed in detail. In response to the Review, IODE is making several fundamental and structural changes, including streamlining operations by re-composition of the IODE Officers, abolishment of the RNODC and IODE Regional Co-ordinator systems, and further reviewing the IODE Groups of Experts during the next inter-sessional period. Other recommendations include encouraging Steering Groups with clearly defined goals (and limited duration), consideration of distributed systems member states with the NODC as the focus, ensuring a better quality of data is made available, development of scientific services and products in collaboration with appropriate experts, encouragement of the appointment of IODE national coordinators where these do not yet exist, and urging implementation of IOC's data exchange policy at the national level.
9. In addition to recommendations relating to the IODE Review and the ODINs, several other recommendations were made relating to metadata, XML and quality control. These are:

(I) The Marine Environmental Data Inventory (MEDI) Programme

IODE recommends that the MEDI Steering Group collaborate with national and international metadata initiatives to ensure a metadata system, that meets international standards, is available to the IODE member states and that the MEDI Steering Group be reconstituted with the following terms of reference:

- (i) identify and document current metadata management best practice;
- (ii) in collaboration with national and international initiatives, as well as the IODE Groups of Experts, recommend a marine profile of ISO 19115 and develop relevant vocabularies to describe marine datasets;
- (iii) make available an ISO 19115 compliant metadata entry tool to the IODE community to ensure metadata is uniformly collected.

(II) Establishment of the IODE XML Steering Group

IODE recommends the establishment of a MarineXML Steering Group with the following terms of reference:

- (i) establish a Pilot Project to set up an ISO 19100 series of standards compliant standards register, with possible collaboration with IHO, to be hosted by the IODE Project Office;
- (ii) monitor and assist with XML development activities in other IODE/JCOMM groups, such as ETDMP, GEBICH and SGMEDI.

(III) Establishment of an Inter-sessional Working Group on Ocean Data Quality Control

IODE decides to establish an inter-sessional working group that will:

- (i) review existing quality control procedures and software;
 - (ii) discuss quality control issues of historical, real-time, delayed-mode and modern ocean profile data;
 - (iii) prepare a report on (i) and (ii) above.
10. The IODE Programme is currently staffed by only one permanent position and the IODE budget from UNESCO's Regular Programme has been reduced to a level that will not allow it to sustain the continued development of the IODE programme. Member States are encouraged to assist IODE through the provision of extra-budgetary funds and secondment of experts to the IOC Secretariat and/or IOC Project Office for IODE.
 11. The Chairman's report to IODE-18 and the presentation given to the 23rd session of the IOC Assembly are attached (Annexes A and B).

12. Further information can be found at the following IODE Websites:

- www.iode.org
- www.oceanportal.org
- www.oceanteacher.org
- www.oceanexpert.org
- www.marinexml.net
- www.odinafrica.net
- www.odincarsa.net
- ioc.unesco.org/MEDI

Lesley Rickards
03 July 2005