The IOC of UNESCO was funded in 1960 and has a mandate to coordinate programmes of ocean sciences and ocean observations globally. Many of these programmes include the active participation of European countries and ocean research institutions as well as organizations developing ocean services in the European area.

The UN Convention on the Law of the Sea considers IOC to be the competent international organization for marine science. In recognition of its mandate as the UN focal point for marine scientific research, the IOC also provides a direct link between Member States and those UN agreements and conventions dealing with ocean and coastal issues.

UNESCO/IOC and the EC have a long and successful history of collaboration. Whilst IOC has had past collaboration with the EC, these have not been formalized in any sustained ways. It is felt that there is scope for strengthening cooperation and exchanges on Marine and Maritime policy and Marine Assessment in the context of IOC’s recent proposal to the European Commission to work towards an agreement including offering a seat in IOC governing body meetings to the European Commission. Such agreement would be of common interest for both institutions as many of our programs in research, environment, marine policy and capacity building would obtain a mutual benefit from it.
INTRODUCTION TO IOC AND IOC SECRETARIAT

UNESCO and the international community recognized the importance of the ocean when they established the IOC (Intergovernmental Oceanographic Commission) in 1960. The United Nations then delegated to IOC, a unique and specialized agency, the mandate to act as the focal point for marine scientific research and to be the link between the Member States on conventions and agreements related to marine and coastal issues. As the only UN organization specialized in ocean sciences, IOC has the responsibility to promote basic marine scientific investigations on a global scale, and with that has played a major role in the progress and advances in ocean sciences.

IOC develops its competences through the promotion and intergovernmental coordination of programmes, projects and related activities in ocean sciences, services, observations and data management, and with due consideration to integrated ocean and coastal zone management in line with UNESCO’s priority for Africa. Scientific research and technological knowledge are vital to our understanding of the integrated ocean system, which depends on advances in science, technology and research and IOC is a driver for such advances and expects to be perceived as a benefactor of such scientific approach.

IOC, as the competent body and focal point for ocean matters in the UN system, is responding in its mandated areas of activity to the Johannesburg Plan of Action and the UN Millennium Development Goals, and acting in conformity with international law, including relevant UN conventions.

The IOC Secretariat coordinates and supports the implementation of the programmes of the Commission. It consists of the Executive Secretary and staff provided by UNESCO as well as personnel provided by other organizations, the United Nations system, and Member States. The Secretariat is organized into offices and sections, based on regional coverage and support to specific programmes. In the implementation of the programme the Secretariat may rely on UNESCO Field Offices. The current organization of the Secretariat, including the Subcommissions and decentralized programme and project offices, is shown in Figure 1.

Figure 1: Diagram showing the organization of IOC Secretariat
IOC MISSION AND HIGH LEVEL OBJECTIVES

The IOC Mission is established in Article 2.1 of the IOC Statutes:

The purpose of the Commission is to promote international cooperation and to coordinate programmes in research, services and capacity-building, in order to learn more about the nature and resources of the ocean and coastal areas and to apply that knowledge for the improvement of management, sustainable development, the protection of the marine environment, and the decision-making processes of its Member States.

The Commission will collaborate with international organizations concerned with the work of the Commission, and especially with those organizations of the United Nations system which are willing and prepared to contribute to the purpose and functions of the Commission and/or to seek advice and cooperation in the field of ocean and coastal area scientific research, related services, and capacity-building.

Thus, IOC has a key role to play as a global knowledge broker involving the promotion of science innovation, nurturing programmes, transferring, disseminating and sharing information, data and knowledge, best practices, assessment and scientific services related to Oceanography. This process is done in an inclusive and participatory way, including views of the scientific community, academia, Member States, scientific enterprises from the North and the South, scientific workers' perspectives, including cultural diversity principles.

In agreement with IOC Resolution EC-XXXIX.1 (Executive Council of 2006), the medium-term strategy (IOC, 2007) for achieving the above vision is implemented and made operative through 4 High-level objectives (HLO) as follows (modified by the Governing Bodies):

- **HLO 1: Prevent and reduce the impacts of natural marine hazards** through:
  a. Promoting integrated and sustained monitoring and warning systems for coastal and oceanic natural hazards (for example hurricane, tsunami, and storm surges);
  b. Educating communities at risk on natural-hazard impact prevention, preparedness and mitigation measures.

- **HLO 2: Mitigate the impacts and adaptation to climate change/variability** by:
  a. Improving the understanding of the ocean’s role in climate variability and climate change;
  b. Contributing to improved prediction of climate;
  c. Increasing the understanding of the impacts of climate change and variability on marine ecosystems and their living resources.
  d. Climate Change adaptation for Africa and SIDS

- **HLO 3: Safeguard the health of ocean ecosystems** by:
  a. Actively contributing to the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socio-economic Aspects;
  b. Further developing research and monitoring required for the prevention of marine environment, the maintenance of biodiversity and the sustainable use of marine habitats.
  c. Identifying and developing the capacity-development necessary for maintaining healthy ocean ecosystems focusing on regional needs.
d. Maintain an ocean biogeographic information system in support of marine assessments and ecosystem research

- **HLO 4: Improve management procedures and policies leading to the sustainability of coastal and ocean environment and resources** through
  
  a. Enhancing regional cooperation and involvement of Member States  
  b. Facilitating science related to ocean and coastal resource management.  
  c. Enhancing development and implementation of decision-support tools that improve integrated ocean and coastal management.  
  d. Facilitate the development and adoption of standards

These four HLOs were developed through consultations with stakeholders within and outside of IOC, based on the need to collate and to focus the marine programme to a few areas taking into account the main oceanographic priorities. The four objectives rely on solid science foundations, which are needed to produce credible and independent advice for societal purposes and for a better management and sustainability of marine ecosystems.

### IOC RELATIONSHIP WITH THE EC AND RECENT APPROACHES AND CONTACTS

The EU currently has 27 member countries, 22 of them are also IOC Member States. Most of them are borderer by the Atlantic, Baltic, Mediterranean and Black Sea with a total of 65,993 km of coastline. Making use of the UNCLOS, most EU Member States have declared an EEZ; in which the coastal state has the exclusive right of exploitation and fisheries and is responsible for regulating pollution from seabed installations, dumping and other activities. Many of the EU member countries have liaisons with other marine organizations and are signatories of different conventions (see Table 1 at the end of this document).

UNESCO/IOC and the EC have a long a successful history of collaboration. Whilst IOC has had past collaboration with the EC, these have not been formalized in any sustained ways. It is felt that EC needs to engage and commit more in ocean affairs, including marine science and observations outside of Europe through existing UN mechanisms.

Several European member states attending the IOC General Assembly at its 25th Session (Paris, 16-25 June 2009) recommended to the IOC Secretariat to initiate conversations with the European Commission to explore its interest in establishing a formal agreement on substance for strengthening our collaboration.

In November 24th 2009, IOC sent a letter of invitation to the Permanent Representative of the EC to UNECO to strengthen the cooperation between the European Commission and the Intergovernmental Oceanographic Commission.

In June 30th 2010 a first technical meeting between EC and IOC officers and a list of possible actions of mutual interest was discussed.

In October 2010, the IOC Executive Secretary, Ms Wendy Watson Wright, along with the IOC chair, Mr Javier Valladares represented IOC-UNESCO at the EurOCEAN pre-event at the EU parliament (a Belgian EU presidency initiative) and the Executive Secretary offered a keynote lecture at EUsroceean 2010 on the 50th anniversary of the IOC.
IOC AGREEMENTS WITH EU MEMBER COUNTRIES

IOC has established fruitful agreements with some EU member states and part of our facilities are based in the EU territory as indicated in the following paragraphs.

The University of Copenhagen (Denmark), Department of Biology, has since 1995 hosted a decentralised Programme Office of the IOC which is staffed with one UNESCO staff and two locally hired scientists (15th anniversary on 5 May 2010). The Office serves as the IOC-UNESCO platform for the implementation of programme activities to enhance national and regional capacities to mitigate the effects of harmful algae on fisheries, aquaculture, public health and tourism, and thereby to support sustainable development of aquaculture. The Office has gained international recognition as an international focal point for cooperation and coordination and activities are implemented in close cooperation with other GOs and NGOs.

The IOC-IEO Science and Communication Centre (Vigo, Spain) was established in October 1996 following the signature of a document of understanding (DOU) between the IOC Secretary and the Instituto Español de Oceanografía. The agreement contemplated the activities of the IOC-IEO Science and Communication Centre for 5 years (1996-2001). Since then, two new agreements (of 5 years each) have been signed to continue the activities of the Centre.

The IOC project office for IODE is hosted and supported by the Flemish Government through the Flanders Marine Institute (VLIZ). The office was established in April 2005 in Oostende (Belgium) and has at its disposal three conference halls for the training and meeting activities and all necessary facilities for effective work and training events including computer equipment and a high speed Internet connection. It has 6 permanent/long-term staff (Belgian and international) and a varying number of short-term seconded staff. The technical training programme implemented at the Project Office has gained an excellent reputation as an effective mechanism to share technical expertise within the oceanographic data management and marine information (library) communities. Each year about 10 courses are organized either in Oostende or in other countries attended by approx. 20 students per course. Since 2005 nearly 1000 students have been welcomed by the IODE training programme.

The JCOMM Observing Programme Support Centre (JCOMMOPS) was established in 2001 in Toulouse (France). The office is hosted by the company CLS, operating the Argos system used on most of marine platforms, and with the support of IFREMER. The office is staffed with two full time technical coordinators. The centre benefits from the high quality infrastructure and computing facilities of CLS. JCOMM-OPS has an infrastructure in place providing essential services to the JCOMM/GOOS community, and in particular to the backbone of the GOOS: Argo, DBCP, SOT and OceanSITES programmes. Panels and steering teams benefit from having a focal point and a centre for technical coordination, in order to move together as a community towards greater standardisation, development of common practices, as well as better sharing of common technical and operational resources.

Other EU member countries provide extrabudgetary funds for IOC activities. These incomes are variable in time. Figure 2 shows the contribution of the main donors during the last biennium 2008-2009 (red arrows indicate EU member countries).
COMMON RESEARCH PROJECTS AND ACTIVITIES

The IOC Mission, the HLOs, and the priority areas of research are achieved through a series of programmes, projects and actions that collectively constitute the IOC scientific work-plan. The scientific programmes and projects are essential to implement ideas and techniques and to guarantee that new findings, methods and models are delivered at global scale in timely manner. IOC also develops projects and activities to prepare the IOC to respond to the increasing demand of scientific and technical assessment on emerging issues; most of IOC work is developed in relationship, through co-sponsorships, with other United Nations system agencies and International partners including the European Commission. The following paragraphs show some examples of recent joint activities.

The IOC has been, and remains, a partner in numerous DG Research Framework programme projects (ARENA, ASCABOS, CARBOOCEAN, CASPINFO, EAMNET, EPOCA, HERMES, MAMA, SEADATANET, SIMORC).

UNESCO/IOC is a partner in the FP7 project no. 244170 PEGASO (People for Ecosystem-based Governance in Assessing Sustainable Development of Ocean and coast), led by the University of Barcelona, for € 309,933

IOC/IODE is a partner in SeaDatanet (ending March 2011) as well as in its regional extensions CASPINFO and BSScene. IOC/IODE has an advisory role in EMODNET-Bio and EMODNET-Chem.

Currently UNESCO/IOC has applied for funding (directly or indirectly) for several projects, e.g.: SpEcoSS (SPecies to ECOsystems using Semantic Standards; INFRA-2011-1.2.2: Data infrastructures for e-Science), iMarine (Data e-Infrastructure Initiative for Fisheries Management and Conservation of Marine Living Resources; INFRA-2011-1.2.2: Data infrastructures for e-Science), and is also partner in a consortium for a project proposal on Euro-GOOS, the European component of the Global Ocean Observing System.

The EC and IOC have funded the GESAMP International Workshop on Micro-plastics particles as a vector in transporting persistent, bioaccumulating and toxic substances in the oceans (IOC-UNESCO, 28-30 June, 2010).
Intergovernmental Coordination Group for the Tsunami Early Warning and Mitigation System in the North-eastern Atlantic, the Mediterranean and Connected Seas (ICG/NEAMTWS) and Council conclusions 15473/07, 15479/07 and 7562/08 (early warning and disaster management)

European membership to all Intergovernmental Coordination Groups for Tsunami Early Warning Systems (TEWS) through Overseas Territories (OTs), in the Pacific (PTWS), Caribbean (CARIBE EWS) and Indian Ocean (IOTWS)

DIPECHO has funded the project on Learning and Adapting to Tsunamis in Colombia, Ecuador, Peru and Chile and has expressed interest to support further similar preparedness-oriented activities.

Participation of European Civil Protection in the sessions of the Intergovernmental Coordination Group for the Tsunami Early Warning and Mitigation System in the North-eastern Atlantic, the Mediterranean and connected seas (ICG/NEAMTWS); the European Civil Protection will fund the 2011-2012 activities of the Tsunami Information Centre for the North-eastern Atlantic and the Mediterranean (NEAMTIC) established in the context of the (ICG/NEAMTWS).

IOC collaborates on a regular basis with the EC, for example the Heads of IOC Sections of Ocean Observation and of Ocean Sciences addressed presentations in the 3rd EUROMARES (18-21 May in Gijón, Spain).

**STRATEGIC POLICY ORIENTATIONS FOR FUTURE IOC-EC DEVELOPMENTS**

The Green/Blue books of the EC provides an insight view for the EU integrated marine policy and states that the EU will work towards more efficient international governance of maritime affairs and effective enforcement of international maritime law. It also states that the EU will also develop shared responsibility over the seas it shares with its closest neighbours.


IOC and the EC should coordinate and cooperate in the implementation of the UN Regular process for global reporting and assessment of the state of the marine environment (RP) and the Marine Strategy Framework Directive (MSFD). Both processed could be nested and metrics for the descriptors harmonized.

IOC can organize scientific networks and assist in the definition of international standards in marine research, and the delivery of marine information and assessments to decision-makers. IOC can also serve as a bridge to foster international cooperation with other regions of the world (e.g. in the implementation of the MSFD in the Mediterranean and Black Sea).

Since 2006, IOC leads the development of Marine Spatial Planning (MSP) principles. IOC can provide EU Member States technical assistance, i.e. training activities.

The Global Ocean Observing System (GOOS) and European marine research infrastructure initiatives (EURO-GOOS, EMODNET, GMES, ESFRI, other initiatives in the framework of the Marine and Maritime Research Strategy - MMRS) provides a platform to cooperate in marine observations and data infrastructures.

Cooperation in oceanographic data and information management and exchange to promote the free and open access to ocean data and information (IODE). Facilitate free and open access to ocean data and information collected within and outside the EU to users within and outside the EU.
through collaboration between IODE’s OceanDataPortal and EMODNET, SeaDataNet-2, OBIS and similar activities.

Foster cooperation in the area of early warning systems for natural hazards, including research and preparedness for tsunamis and other sea-level related hazards. For instance the Tsunami Early Warning and Mitigation System in the North-eastern Atlantic and the Mediterranean and Connected Seas (ICG/NEAMTWS).

Capacity building is a common objective of European membership and to all IOC Member States, these cooperation is being developed by the Coordination Groups for Tsunami Early Warning Systems (TEWS) through Overseas Territories (OTs), in the Pacific (PTWS), Caribbean (CARIBE EWS) and Indian Ocean (IOTWS).

STRENGTHENING COOPERATION

The convergences between the two organisations’ objectives are clear. The EU strategy for marine and maritime research (Green/Blue Books) has a strong international dimension because:

European seas are shared with third countries and we need to cooperate with them at regional level to ensure an integrated and sustainable management of their resources.

We are eventually dealing with one global ocean and the European Commission is committed to contribute to the global governance of oceans and corresponding global programmes, such as the Global Ocean Observation System (GOOS), and the Tsunamis Early Warning Systems, both coordinated by IOC.

The EU Marine Strategy Framework Directive (MSFD) provides a framework for an ecosystem-based approach for sustainable use of marine goods and services by human activities. IOC and the EC should coordinate and cooperate in the implementation of the UN Regular process for global reporting and assessment of the state of the marine environment and MSFD. Both processed could be nested and metrics for the descriptors harmonized.

IOC and the EC share a common view on the importance of creating capacity in developing countries. IOC can serve as a bridge to foster international cooperation with other regions of the world (e.g. in the implementation of the MSFD in the Mediterranean and Black Sea).

In conclusion, there is scope for strengthening cooperation and exchanges on Marine and Maritime policy and Marine Assessment in the context of IOC’s recent proposal to the European Commission to work towards an agreement including offering a seat in IOC governing body meetings to the European Commission. Such agreement would be of common interest for both institutions as many of our programs in research, environment, marine policy and capacity building would obtain a mutual benefit from it.

A MoU to enhance the long-standing partnership between the two organizations will formalise our cooperation in a sustained way. The MoU will provide a structured framework for cooperation across a broad range of issues of common interest, with emphasis on consolidating and further developing the cooperation with developing countries, the implementation of the European Marine Strategy and the Global Monitoring for Environment and Security, and for facilitating exchange of oceanographic data from national ocean data centers to contribute to the establishment of the European Marine Observation and Data Network.

It is hoped that this instrument could include a financial allocation to IOC following the example that EC has with other science/observation organizations.
Table 1: EU Member States and their membership in IOC and in other councils and conventions intervening in the governance of the oceans and regional seas (the column ‘IOC EC’ stands for the EU member states that are currently members of the IOC Executive Council).

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