
**Global
Ocean
Observing
System**



Intergovernmental Oceanographic Commission
Reports of Meeting of Experts and Equivalent Bodies

The ad hoc Advisory Group for IOCARIBE-GOOS

Fourth Session

21–23 February, 2002

Veracruz, Mexico

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ABSTRACT

The 4th Session of the *ad hoc* Advisory Group for IOCARIBE-GOOS finalized the Strategic Plan for IOCARIBE-GOOS for presentation to the 7th Session of the IOC's regional sub-commission for the wider Caribbean Region (IOCARIBE), which took place during the last week of February 2002 in Veracruz, Mexico.

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1. OPENING

The Co-Chairs of the *ad hoc* Advisory Group for IOCARIBE-GOOS, Guillermo Garcia-Montero and Douglas Wilson, opened the meeting at 09:15 hours on Thursday February 21st, thanking the participants for attending the meeting, kindly hosted by the Direccion de Educacion en Ciencia y Tecnologia del Mar (DECYTM), at the Holiday Inn, Boca del Rio, Veracruz, Mexico.

The list of participants is given in Appendix II. Antonio Rowe of Barbados was unable to attend and was replaced on the Advisory Group by Lorna Innes of Barbados.

The Co-Chairmen reminded participants that the main objectives of the meeting were (i) to revise The Case for IOCARIBE-GOOS (which will be referred to in this report as the Strategic Plan), and (ii) to prepare a presentation on the Strategic Plan for delivery to the 7th session of the Regional Sub-commission for the Wider Caribbean Region (IOCARIBE-VII) in Veracruz, during the week of February 25th, 2002. The goal was to persuade IOCARIBE-VII to endorse the Strategic Plan and to appoint a Steering Committee to begin implementing it.

The Co-Chairmen were pleased that the Group had been able to draft the Strategic Plan ready for presentation to IOCARIBE-VII. They noted that the present version of the draft had been circulated ahead of time to attendees at IOCARIBE-VII, to give them some idea of what to expect. They felt confident that by the end of this 4th session a much improved draft would be available, and noted that this would be distributed at the beginning of IOCARIBE-VII to accompany their Co-Chairs report to IOCARIBE-VII.

Professor Brizuela Venegas, Director-General of Education en Ciencias y Tecnologia del Mar – SEP, warmly welcomed the Advisory Group to Veracruz, noting that the development of operational oceanography as applied through IOCARIBE-GOOS would considerably aid the sustainable development of the marine environment in the Wider Caribbean. He introduced the Group to some of the work being carried out through the extensive network of education and training facilities of DECYTM, and noted that several of the Heads of local DECYTM Centres were participating in the 4th session as Observers. He invited the Members of the Group to visit one of the local DECYTM centres, The visit duly took place on Friday afternoon, February 23rd.

On behalf of the Executive Secretary of the IOC, Colin Summerhayes, Director of the GOOS Project Office, thanked the Group for its hard work in finalizing Version 1.0 of the Strategic Plan, which paved the way for the implementation of GOOS in the region. He reminded participants that GOOS was a flagship programme of the IOC, and noted that it was now being rapidly developed at the regional level by groups of IOC Member States sharing common sea areas. IOCARIBE was in the vanguard of that development. He thanked the participants for their time and effort, and thanked Prof Brizuela and the DECYTM for their hospitality and the efficiency and effectiveness of their Local Organizing Committee.

Mr. Summerhayes observed that he would be acting as Technical Secretary for the session, owing to the unavoidable temporary absence of Cesar Toro of the IOCARIBE Secretariat, who had made all of the arrangements for the session, in collaboration with the Local Organizing Committee. Mr Summerhayes concluded by thanking the many agencies that had provided funds to support the meetings that had enabled progress to date, including the IOC, the Office of Naval Research (ONR) of the USA, the Natural Environment Research Council of the UK, the Dutch NWO, the French IOC Committee, and the governments of the host countries for (a) the four IOCARIBE-GOOS sessions (Venezuela, Cuba, the USA, and Mexico), and (b) the initial GOOS Capacity Building workshop that began the whole process (Costa Rica, April 1999).

Co-Chairman Doug Wilson warmly welcomed Dr Hassan Ali of the ONR as an Observer to the meeting.

2. ADMINISTRATIVE ARRANGEMENTS

Doug Wilson explained the logistical arrangements, and Prof. Elia Moreno of the Local Organizing Committee explained the plan for social events and a visit to a DECYTM Centre.

2.1 ADOPTION OF THE AGENDA

The provisional agenda (Annex I) was adopted with minor modifications. Given that the MedGOOS representatives had been unable to attend this session, Item 3.1 would be replaced by a talk by the Director of the GOOS Project Office on GOOS developments since April 2001.

2.2 DESIGNATION OF THE RAPPORTEUR

Mr. Summerhayes was appointed Rapporteur for the session.

2.3 CONDUCT OF THE SESSION, TIMETABLE, AND DOCUMENTATION

Doug Wilson introduced the main documents, which included (i) Version 1.0 of the Strategic Plan (GOOS Report No 115); (ii) the draft text of the Co-Chairs' report to IOCARIBE-VII, (iii) the draft of A Strategic Plan for PacificGOOS; (iv) the report of the 3rd session of the ad hoc Advisory Group for IOCARIBE-GOOS (GOOS Report 105).

Mr Summerhayes apologized for IOC's delay in printing GOOS Report 105, but noted that it had been sent to Members of the Group in electronic form last summer. Like the reports of the previous sessions, it too would be translated into Spanish. He apologized for the slowness with which IOC was producing the Spanish translations. The English, Spanish, and French versions would all be available on the GOOS web site as soon as they were finalized.

3. EXPERIENCE OF SOME OBSERVING SYSTEMS

3.1 GOOS DEVELOPMENTS SINCE APRIL 2001

Mr. Summerhayes noted that there had been a significant increase in the activities associated with forming regional GOOS bodies. The EuroGOOS Association had formally created the Northwest Shelf Operational Oceanographic Observing System (NOOS), as a partner to the previously existing Baltic equivalent (BOOS). The NOOS and BOOS reports could be downloaded from the EuroGOOS web site, which was accessible through the Regions page on the GOOS web site (<http://ioc.unesco.org/goos>). Also in the European area, the Black Sea states had signed a Memorandum of Understanding to create Black Sea GOOS. In north-east Asia, NEAR-GOOS was now considering the development of a Strategic Plan to widen its observation base to include biological and chemical measurements, and to develop forecasting skills and products. A meeting had been held in Seoul, Republic of Korea (August 2001) to begin development of a GOOS for south-east Asia (SEA-GOOS). PacificGOOS had drafted a Strategic Plan (see agenda item 3.2). The nations of the Indian Ocean, with the aid of the IOC Regional programme Office in Perth, Australia, had begun developing an Indian Ocean GOOS, which had a Secretariat provided by India in Hyderabad. There will be an Indian Ocean GOOS meeting in Mauritius in November 2002. GOOS-AFRICA had held a workshop in Nairobi in November 2001 to begin the development of proposals for funding a network of tide gauges, and for training in the use of remotely sensed data from satellites. MedGOOS had been awarded 2.3 million euros to begin implementing GOOS in the Mediterranean. With the assistance of the Brazilian DHN, the IOC had opened a Regional Programme Office in Rio de Janeiro, in December 2001, to develop GOOS in the equatorial Atlantic and South Atlantic. The office was staffed by Ms. Janice Trotte. Finally, there were several regional GOOS developments in the USA, for example the Gulf of Maine Ocean Observing System (GoMOOS). Last, but not least, there was the development of IOCARIBE-GOOS. All of these activities could be accessed through the regional page on the GOOS homepage.

Recognizing this regional flourishing of GOOS activities, the 5th session of the Intergovernmental Committee for GOOS (I-GOOS) (Paris, June 2001) had decided that in between its biennial meetings it would hold a Regional Forum that would bring together representatives of all the regional GOOS bodies so that they could exchange ideas and learn about best practices. The first I-GOOS Regional Forum would be held in Athens during the first week of December 2002, to capitalize on the fact that EuroGOOS was holding its 3rd Conference on Operational Oceanography there at that time. In addition, I-GOOS had decided to hold some of its biennial meetings in the regions, with the 6th session planned for the Pacific, and hosted by PacificGOOS, in early 2003.

GOOS developments on the open ocean continued as planned, with the Ocean Observations Panel for Climate (OOPC) taking responsibility for the development of the Global Ocean Data Assimilation

Experiment, and its Argo profiling float pilot project. It seems that funding is being made available for some 700 new floats to be launched each year.

The Coastal Ocean Observations Panel (COOP) has now almost completed the development of the integrated design plan for GOOS in coastal seas. A final draft is expected in April, following which COOP will work on the production of an Implementation Plan.

The Joint WMO/IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM) held its first meeting, in Iceland (June 2001). Rather few Member States attended from the Wider Caribbean region (Mexico & Venezuela), which suggests that quite an effort will be required to get IOCARIBE Member States to accept and apply the new operational oceanography paradigm that requires meteorologists and oceanographers to work hand in hand.

JCOMM will be the primary implementing mechanism for much of GOOS, so it is essential that all the regional GOOS bodies take the opportunity to map their activities onto the new, four-fold JCOMM structure, comprising: Observations; Products and Services; Data and Information Management; and Capacity Building. To make maximum use of JCOMM, and to develop the appropriate synergy between GOOS and JCOMM, it will be essential in future for the regional GOOS groups to include representatives of meteorological agencies. GOOS is well represented within JCOMM, with the Chair of the GOOS Steering Committee and the Director of the GOOS Project Office both being part of the JCOMM Management Committee.

Another new partnership is providing services that maybe useful for capacity building in IOCARIBE-GOOS. This is the Partnership for Observations of the Global ocean (POGO), which brings together the directors of the world's major oceanographic organizations, such as Woods Hole Oceanographic Institution, Scripps Institution of Oceanography, the Southampton Oceanography Centre, the Indian National Institute of Oceanography, JAMSTEC, and IFREMER. POGO is now providing annual POGO Fellowships, part funded by IOC, to train scientists and technicians from developing countries in global ocean technology, such as the deployment of deep sea moorings. Information about the Fellowships is available on the POGO web site (www.oceanpartners.org).

In discussion, Advisory Group Members agreed on **Action 1, for the Co Chairs** to ask IOCARIBE to find a means to include meteorologists in the Steering Committee for IOCARIBE-GOOS, and that to make the new Steering Group as fully representative as possible it should include experts from fisheries and environment agencies as well as oceanographers and meteorologists.

They also agreed that since JCOMM was to be the implementing mechanism for GOOS it made sense for IOCARIBE-GOOS to adopt the four-fold structure of JCOMM. (**Action 2: new Steering Committee**).

3.2 PACIFICGOOS STRATEGIC PLAN

Mr. Summerhayes described the main points of the draft Strategic Plan for PacificGOOS. The chief difference from the Strategic Plan for IOCARIBE-GOOS was that PacificGOOS would be an Association of Agencies, following the EuroGOOS and MedGOOS models, rather than an intergovernmental subsidiary body, like NEAR-GOOS within WESTPAC, or IOCARIBE-GOOS within IOCARIBE.

PacificGOOS had held a first planning workshop, focussing on coastal issues. The main result was the outline of three pilot projects, on aquaculture, water quality and coral reefs.

The Members of the Advisory Group requested copies of the drafts of the outlines of the three PacificGOOS Pilot Projects (**Action 3: GOOS Project Office**).

3.3 U.S. OFFICE OF NAVAL RESEARCH (ONR)

Dr. Hassan Ali of the ONR gave a presentation on ONR's activities and programmes, stressing those aspects relevant to IOCARIBE-GOOS. He tabled copies of his PowerPoint slides, and a list of key web addresses, and provided each participant with a CD-ROM of ONR's Annual Report for 2001. He also provided a CR-ROM of his PowerPoint presentation, which was kindly copied by the Local Organizing Committee for all participants. It contained interesting animations of the monthly forecast for January-February for the Wider Caribbean region.

ONR is proposing to open a regional office for South and Central America, possibly in Chile in August 2002. It will facilitate interaction and communication between US and Latin American scientists. Funding is available to support a Visitor Support programme enabling Latin American scientists to visit the US for extended periods, and vice versa. There is also a Conference Support programme, which would pay for workshops and conferences to address topical issues. And there are funds for joint research programmes. Details can be found at <http://www.ehis.navy.mil/oas/default.asp>.

ONR includes the Naval Research Laboratory (NRL) and the Naval Oceanographic Office (NAVOCEANO). The latter carries out surveys, for example of bathymetry in coastal waters, in partnership with developing countries through the Hydrographic Cooperation programme (HYCOOP).

Dr. Ali pointed out that operational forecasts based on *in situ* and satellite data fed into advanced numerical models are already a reality for much of the world. Forecasts are done once or twice a day, and can be obtained on the following web site: <http://www.ocean.nrlssc.navy.mil>. However, they still need to be validated at the local level. The US Navy makes them available, with the idea of obtaining feedback from the local level about the performance of the models, which will help them to refine the models further.

To facilitate the task of the new ONR Office, the Advisory Group offered to make available the IOCARIBE-GOOS Inventory (**Action 4: IOCARIBE Secretariat**).

The *ad hoc* Advisory Group agreed that the new Steering Committee for IOCARIBE-GOOS (to be appointed by IOCARIBE) should spread information through Wider Caribbean agencies about the availability of these (and other) numerical model outputs and forecasts, and consider how to make best use of the wide range of numerical models and forecasts that were becoming available (**Action 5: new Steering Committee**).

4. REVIEW OF ACTIONS FROM THE MIAMI MEETING

Progress was reviewed against the action items listed in section 10 of the report of the 3rd session of the *ad hoc* Advisory Group for IOCARIBE-GOOS (Miami, April 1-5, 2001). The Co-Chairs noted with approval that 85% of the 52 actions had been dealt with, leaving 11 actions outstanding either in their original form or slightly modified:

- Action 6:** (from Miami Action 10.I.1): All Members: Before mid March send to Doug Wilson the names of candidates for the editorial board that will review the Strategic Plan [Core members are the speakers from the Oceanology International 2001 IOCARIBE-GOOS Session (Miami, April 2001)].
- Action 7:** (from Miami Action 10.I.4): All Members: Before mid March suggest possible additional User Scenarios for Doug Wilson to add to the Annex to the Strategic Plan.
- Action 8:** (from Miami Action 10.II.11): new Steering Committee: Draft a proposal for a regional workshop on pilot projects, in consultation with the GPO and the IOCARIBE Secretariat, and solicit funds to support the meeting.
- Action 9:** (from Miami Action 10.II.12): Doug Wilson: By August 2002, publish the papers from the OI-2001 Americas IOCARIBE-GOOS symposium on the IOCARIBE-GOOS web site and on CD-ROM.
- Action 10:** (from Miami Action 10.II.13): Doug Wilson (with the new Steering Committee): Consider (i) the need for and possible location of high density SOOP lines; (ii) encouraging joint proposals between oceanographers and meteorologists to resource combined VOS/SOOP lines; (iii) developing a pilot project to instrument present VOSs with XBTs; and (iv) compiling a map of shipping activity as the basis for choosing possible VOS/SOOP lines.
- Action 11:** (from Miami Action 10.III.23): Cesar Toro: work with Peter Dexter (WMO) to contact Caribbean meteorological agencies as the basis for engaging them in IOCARIBE-GOOS.
- Action 12:** (from Miami Action 10.V.33): Cesar Toro (in cooperation with Doug Wilson): By June 2002, create an IOCARIBE-GOOS web site.

Action 13: (from Miami Action 10.V.24): Cesar Toro and Co-Chairs: Consider the necessity of sending out the Technology Questionnaire.

Action 14: (from Miami Action 10.VIII.46): New Steering Committee: consider how to coordinate between IOCARIBE-GOOS and ITSU for the Caribbean.

Action 15: (from Miami Actions 10.X.48 and 49): Cesar Toro: Before end March provide a map and description of the IOCARIBE region for publication in the Strategic Plan.

5. IOCARIBE-GOOS STRATEGIC PLAN

5.1 COMPLETION OF THE DOCUMENT TO BE SUBMITTED TO IOCARIBE-VII

Co-Chair Doug Wilson led an extended discussion on the contents of each chapter to the draft Strategic Plan (GOOS Report 115). Much duplication was removed; the quality of the text was improved; several sections were re-ordered to improve the structure and logic; the original chapter 5 (products) was merged with chapter 2; scenarios were moved from the old chapter 5 to an Annex; the original chapter 10 (Technology) was considered to be of too high a level of detail for the Strategic Plan, and set aside for use as an information document by the Steering Committee; pilot projects were moved from chapter 3 (design) to 4 (implementation). The Abstract was expanded into an Executive Summary by listing the key actions needed by the Steering Committee for IOCARIBE-GOOS.

Draft Version 1.0 of the Strategic Plan had been circulated in advance to the participants of IOCARIBE-VII, to stimulate debate about the future development of IOCARIBE-GOOS. The Advisory Group approved the printing of Version 2.0 of the Strategic Plan for distribution to the attendees at IOCARIBE-VII, to ensure that the debate on this topic was well informed. Further improvements would be made later with feedback from the attendees at IOCARIBE-VII, and from an 'editorial board' (see Action 6, above).

Action 16: Co-Chairs: Before mid March, add references to each chapter of the Strategic Plan and compile them into a Bibliography for publication as an Annex.

Action 17: Cesar Toro: immediately, circulate copies of Version 2 of the Strategic Plan to the Members of IOCARIBE-VII during IOCARIBE-VII, with requests for feedback before the end of March.

Action 18: Cesar Toro: immediately, send copies of Version 2 of the Strategic Plan to the members of the editorial board, with requests for feedback before the end of March.

Action 19: All Members: By end March, provide additional comments on Version 2 of the Strategic Plan to Doug Wilson.

Action 20: Co-Chairs: By end April, integrate feedback from editorial board and members of IOCARIBE-VII into Version 3 of the Strategic Plan, and send it to the GPO for publication.

Action 21: GPO: make copies of the Strategic Plan available to the IOC Executive Council (meeting early June)

5.2 PREPARING A RECOMMENDATION TO THE IOCARIBE-VII SESSION

The Advisory Group agreed that the Co-Chairs presentation to IOCARIBE-VII should be accompanied by a Recommendation for endorsement and or modification by IOCARIBE-VII. Once endorsed, the Recommendation would be transmitted to the IOC Executive Council meeting in June 2002, where it was hoped that the Recommendation would become a Resolution. Guillermo Garcia drafted a Recommendation for subsequent polishing by Doug Wilson and Cesar Toro.

5.3 PREPARING THE PRESENTATION TO THE IOCARIBE-VII SESSION

The Advisory Group accepted the bulk of the draft text of the Co-Chairs' report to IOCARIBE-VII, which had been tabled as a working document (see agenda item 2.3, above). The Group agreed on Terms of Reference for the Steering Committee, which would be added to the document for presentation. Also added would be the main Tasks for the Steering Committee, as identified during the finalization of the Strategic Plan (agenda item 5.1, above), and as listed in the Executive Summary of the Strategic Plan.

6. LINKS WITH OTHER UNITED PROGRAMMES AND AGENCIES

6.1 LINKS WITH UNEP

Cesar Toro told the Advisory Group about the discussions he had been holding with the Office of the Cartagena Convention, in Jamaica, which was responsible for the implementation of UNEP's Regional Seas Programme in the Caribbean. A Memorandum of Understanding was in preparation to ensure that IOCARIBE and the Cartagena Convention Office worked closely together in future. UNEP sees GOOS as a tool for the implementation of many of the observations required under the Convention.

6.2 LINKS WITH OTHER PROGRAMMES

A strengthening of links between the National Meteorological Services and National Oceanographic Agencies throughout the region is required to support the full development of GOOS and JCOMM, and should involve the help of the WMO (see Action 11).

Links are also required with the regional fisheries bodies and with the managers of the proposed Large Marine Ecosystem project (**Action 22; IOCARIBE Secretariat, and the New Steering Committee**)

7. ADOPTION OF THE REPORT

The preliminary list of Actions was adopted (agenda item 10).

Action 23: GPO: by end February complete the draft of the report of the 4th session of the Advisory Group, and send it to members for comment, with the aim of printing the report by summer 2002.

8. DATE AND PLACE OF NEXT MEETING

This was the last session of the Advisory Group, unless IOCARIBE-VII finds some means of keeping it in being. The Co-Chairs will recommend to IOCARIBE-VII that the Members of the Advisory Group should be on the Steering Committee for its first two years, to provide continuity.

9. CLOSURE

In closing the meeting, the Co-Chairs once again thanked the Local Organizing Committee for its tremendous support.

Doug Wilson particularly thanked his Co-Chairman, Guillermo Garcia, and the other Members of the Group for their hard work and dedication, noting that the Group had achieved what it set out to do, namely to produce a Strategic Plan in time for the IOCARIBE-VII meeting. He felt that this document would provide a very useful guide to the development of operational oceanography and the development of useful services and products throughout the region at both regional and national levels. He also noted that the production of the Plan was most timely given the increasing interest of the USA in the Caribbean in particular and Latin America in general, as evidenced by the attendance at the meeting of Dr. Ali from ONR.

Guillermo Garcia expressed the view that the Strategic Plan is a valuable product. It will be an extremely useful educational document not only for governments, but also for the scientific community. In fact it is a unique product, the only one of its kind that he could recall during the past 10 years or so of IOCARIBE's recent history, and a model to follow.

Alejandro Gutierrez seconded that opinion, noting that the production of the Strategic Plan was a very significant achievement, and something important for the future of the region. Nevertheless, there was still much to do to turn the dream into a reality by means of an Implementation Plan followed by actual implementation.

The Group recognized the inspirational role that Dr. George Maul had played in setting the scene for the development of collective observing activities like this in the region.

The Group also recognized the influential role that Ms Janice Trotte had played as the GOOS Project Office's representative with responsibilities for setting up GOOS in Latin America. It was Janice's promotion of the IOCARIBE Users and GOOS Capacity Building Workshop (San José, Costa Rica, 22-24 April 1999) that had led to IOCARIBE-VII creating the *ad hoc* Advisory Group and laying the ground work for creation of the proposed Steering Group for IOCARIBE-GOOS. Through that meeting, and the 1st session of the Advisory Group (Caracas, 3-5 November 1999), she had done an excellent job of educating regional delegates as to the nature and benefits of doing GOOS at the regional scale.

The Group thanked the Director of the GOOS Project Office for taking on Janice's role in guiding the Group forward to the production of the Strategic Plan after she returned to Brazil, and for his significant role in the writing and editing process.

Mr. Cesar Toro, Head of the IOCARIBE Secretariat, congratulated the Group on the production of Version 2.0 of the Strategic Plan, which showed that the Group was focused, dedicated, product-oriented, and willing to work hard. He noted that he is using the success of this Group as an example for other IOC programme activities under the IOCARIBE umbrella.

The Local Organizing Committee provided Members of the Advisory Group with copies of a group photograph.

The meeting was closed at 13.00, following which most of the Group visited a DECYTM Centre, and were provided with a splendid lunch by their hosts.

10. LIST OF ACTIONS

- Action 1:** Co Chairs: to ask IOCARIBE-VII to find a means to include meteorologists in the new Steering Committee for IOCARIBE-GOOS, and to make the new Steering Group as fully representative as possible by including experts from fisheries and environment agencies as well as oceanographers and meteorologists.
- Action 2:** New Steering Committee: IOCARIBE-GOOS should adopt the four-fold structure of JCOMM.
- Action 3:** GOOS Project Office: provide Members of the Advisory Group with copies of the outlines of the three PacificGOOS Pilot Projects.
- Action 4:** IOCARIBE Secretariat: copy the IOCARIBE-GOOS Inventory to ONR.
- Action 5:** New Steering Committee: spread information through Wider Caribbean agencies about the availability of numerical model outputs and forecasts, and consider how to make best use of the wide range of numerical models and forecasts that are becoming available.
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- Action 19:** All Members: By end March, provide additional comments on Version 2 of the Strategic Plan to Doug Wilson.
- Action 20:** Co-Chairs: By end April, integrate feedback from editorial board and members of IOCARIBE-VII into Version 3 of the Strategic Plan, and send it to the GPO for publication.
- Action 21:** GPO: make copies of the Strategic Plan available to the IOC Executive Council meeting (early June).
- Action 22:** IOCARIBE Secretariat, and new Steering Committee: build links with the regional fisheries bodies and with the managers of the proposed Large Marine Ecosystem project for the Caribbean.
- Action 23:** GPO: by end February complete the draft of the report of the 4th session of the Advisory Group, and send it to members for comment, with the aim of printing the report by summer 2002.

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ANNEX II

LIST OF PARTICIPANTS

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ANNEX III

LIST OF ACRONYMS

BOOS	Baltic Operational Oceanographic System
COOP	Coastal Ocean Observations Panel
DECYTM	Dirección de Educación en Ciencia y Tecnología del Mar
DHN	Directorate of Hydrography and Navigation (of the Brazilian Navy)
EuroGOOS	European GOOS
GoMOOS	Gulf of Maine Ocean Observing System
GOOS	Global Ocean Observing System
GPO	GOOS Project Office
HYCOOP	Hydrographic Cooperation programme
IFREMER	Institut français de recherche pour l'exploitation de la mer
I-GOOS	Intergovernmental Committee for GOOS
IOC	Intergovernmental Oceanographic Commission (of UNESCO)
IOCARIBE-GOOS	IOC Sub-Commission for the Caribbean and Adjacent Regions GOOS
ITSU	International Co-ordination Group for the Tsunami Warning System in the Pacific (IOC)
JAMSTEC	Japanese Marine Science and Technology Centre
JCOMM	Joint WMO/IOC Technical Commission for Oceanography and Marine Meteorology
MedGOOS	Mediterranean GOOS
NAVOCEANO	Naval Oceanographic Office
NEAR-GOOS	N.E. Asian Region GOOS
NOOS	Northwest Shelf Operational Oceanographic Observing System
NWO	Netherlands Organization for Scientific Research
NRL	Naval Research Laboratory
OI	Oceanology International
ONR	Office of Naval Research (US Navy)
OOPC	Ocean Observations Panel for Climate
POGO	Partnership for Observations of the Global Ocean
SEA-GOOS	South-east Asia GOOS
SOOP	Ship of Opportunity Programme
UNEP	United Nations Environment Programme
VOS	Voluntary Observing Ship
WESTPAC	IOC Sub-commission for the Western Pacific
WMO	World Meteorological Organization
XBT	Expendable Bathythermograph