



IOC Editorial Board for the International Bathymetric Chart of the Western Indian Ocean (IBCWIO)

Fifth Session

Quatre Bornes, Mauritius
24-28 July 2000

Intergovernmental Oceanographic Commission
Reports of Meetings of Experts and Equivalent Bodies

IOC Editorial Board for the International Bathymetric Chart of the Western Indian Ocean (IBCWIO)

Fifth Session

Quatre Bornes, Mauritius
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1. OPENING OF THE SESSION

The meeting started with an opening ceremony to which members and local guests were invited, at 10 a.m. in the Conference Hall of the Gold Crest Hotel.

The welcome address was delivered by the Acting Director of the Meteorological Service, Mr S.N. Sok Appadu, followed by an address of the Director of the Mauritius Oceanography Institute, Mr M. Vayid. Dr Travin then conveyed to the Board the best wishes for a successful meeting from the Executive Secretary of the IOC, Dr Patricio Bernal. Statements followed by the Chairman of the IOC Consultative Group on Ocean Mapping, Dr G. Giermann, and the Chairman of the Editorial Board, Professor W. Bettac, who thanked the Government for its kind invitation. Finally the Minister of State, the Honourable D. Bhima, officially opened the session. (Addresses see Annex IV).

After a break, the session came to order with the Chairman asking everybody to introduce himself. He recalled that the Board consisted of nine appointed, and one ex officio, members, and invited guests and representatives of organisations. One representative came from RCMRD, the Regional Centre for Mapping of Resources for Development in Nairobi. In four cases, members of the Board could not attend and therefore had sent representatives (see List of Participants, Annex III).

2. ADOPTION OF THE AGENDA

The Agenda was adopted with two amendments: item 3.1 “*Matters arising from the previous meeting*”, and 7.1 “*Status of IBCWIO sheets, and updating of the IBCWIO Website*” (see Agenda, Annex 1).

3. CONDUCT OF THE SESSION AND DOCUMENTATION

The Secretary of the meeting introduced the timetable, and documentation. Dr Giermann was appointed rapporteur.

3.1 MATTERS ARISING FROM THE PREVIOUS MEETING

The Report of the 4th Session of the Board, which had been distributed by mail earlier, was reconsidered and some comments were received. It was agreed that the coordinates of the individual sheets should be made available through the Chairman, including the coastline as it was prepared by the NGDC in Boulder. The question whether any one from the region participated in the Trieste training courses mentioned under item 10.3, was answered negatively. The Board recommended that the course be better announced in the countries of the region.

4. EXCHANGE OF THOUGHTS AND EXPERIENCES IN EVALUATING PLOTTED DEPTHS FOR BATHYMETRIC CHARTS

The Chairman indicated that the scale at which contour lines are drawn much depended on the density of plotting lines in this area.

4.1 EXPERIENCE IN THE USA

Mrs Taylor presented transparencies on the method of compiling sheet 1.05. This case is certainly of great interest to many compilers. Specifically, she illustrated the way in which contours generated from predicted topography data were combined with sounding data to complete the contours for the sheet. She presented the completed compilation sheets and gave them to the Seychelles participant, who will proceed with adding detailed contours in the nearshore areas of the sheet.

Under this item the Chairman made a presentation on the work done to prepare sheet 1.07, and in particular the use of predicted sea floor topography to compile contours in combination with sounding data. The following issues were raised: it appears that predicted topography may be differently incorporated depending on the compiler. Mr Osborne suggested that a manual on how to combine satellite altimetry data with real bathymetry to compile contours of the IBC sheets, should be prepared. The Board supported this idea in general, and asked the IOC Consultative Group on Ocean Mapping (CGOM) to look into this matter that is of interest to all International Bathymetric Charts (IBCs). Mr Huet noting that contours were compiled, for a large part, from predicted topography, wondered how to make clear on the final product, i.e. the IBCWIO sheets, that most of the information shown does not come from bathymetric surveys. At present only the ship tracks superimposed on a sheet are shown on the paper product. The Board suggested that a warning should appear on each sheet to that effect. The manual could become an appendix to the GEBCO Guidelines. Mr Osborne offered digitised GEBCO data as well as plotting sheets to Mozambique.

Under this agenda item, reference was made to two papers: (i) Global Bathymetric Prediction for Ocean Modelling and Marine Geophysics by David T. Sandwell and Walter H.F. Smith, and (ii) Global Sea Floor Topography from Satellite Altimetry and Ship Depth Soundings by Walter H.F. Smith and David T. Sandwell.

5. INFORMATION ON CURRENT IOC OCEAN MAPPING ACTIVITIES

Dr Travin reported on the progress made in ocean mapping in other IBCs, stressing that ocean mapping since 1993 is a priority action of the IOC.

Dr Giermann introduced the new initiative of the IOC to prepare for developing countries a number of large-scale maps of shelf and nearshore areas thus offering to these countries a basis for the exploration of their Exclusive Economic Zones for scientific, environmental, and commercial purposes. He referred to his opening statement contained in Annex IV.

6. PRESENT SITUATION OF DISTRIBUTION OF COLLECTED DATA FOR PARTICIPANTS IN THE IBCWIO PROJECT

Members of the Board spoke about the data that they had sent out or received. A problem seemed to be that sometimes CD-ROMs, which contain such data, are not readable by the receiving side. Mrs Taylor said that NGDC offered to provide Dr Travin with copies of the latest version of their GEODAS CD-ROM set so that he may distribute these to the appropriate participants. There was also a request to use digitised GEBCO soundings, partly in hands of the French Institute for research and Exploitation of the Sea (IFREMER), for the most southern sheets of IBCWIO.

In general, GEBCO data are not always identical with data used in IBCs, (one reason being the quite different scales) so that a new GEBCO release in the near future will not duplicate the efforts of this editorial Board. GEBCO digitised data are made available in form of a GEBCO

Digital Atlas (GDA). The question on whether to use satellite data was also raised. In principle, there was no objection in case that no other data were available (see CGOM-VII Report item 4.5.2). The question still remains to be clarified, whether GEBCO will accept and incorporate IBC data if these contain satellite-borne data. The International Hydrographic Organization (IHO) was requested to provide documentation on collection of data of sea to Mauritius, Seychelles and others.

A sessional group was set up which came up with a recommendation attached as Annex II.

7. STATE OF NATIONAL PARTICIPATION IN THE PROJECT

(The meeting started the 2nd day with another round table led by the Chairman, at which he referred to his training notes and personal experience to illustrate typical problems that may be encountered in the data, and how best these could be resolved).

The Chairman then invited participants to briefly report about their countries' national engagements in IBCWIO. Written statements were received as follows (no written statements have been received from Russia):

FRANCE

The Hydrographic and Oceanographic Service of the French Marine (SHOM)'s activities in IBCWIO are as follows:

Compilation has not started yet.

Cooperation has been proposed to Madagascar in 02/98. France (SHOM) still waits for an answer.

The compilation by France (SHOM) should start in 2002 after the end of participation in IBCEA and IBCCA.

FRANCE (SHOM) would like to be more involved in the revision of the IBCWIO sheets; it has been solicited for the check of only one sheet until now.

KENYA

Sheet 1.04 was published and printed in 1999. In this connection, special thanks to the Russian Federation and the Chief Editor for their assistance in incorporating the Smith and Sandwell estimated sea topography data to the areas where there was inadequate or no survey information.

Kenya will continue to cooperate and work with the EB-IBCWIO, particularly in updating sheet 1.04 when new update survey data become available, and generally in exchange of information and ideas to facilitate the completion of the whole series of charts.

MADAGASCAR

Madagascar has received some data and a CD sent by Prof. W. Bettac. But, because of the lack of capability to plotting them, Madagascar is supposed to work with France, and arrangement will be made with France to do the work with Malagasy cartographers in the year 2001 or 2002.

MAURITIUS

Mr Uckiah presented the status of the Mauritius participation in the project. He informed the Board that Mauritius is very interested in participating in the preparation of sheets 1.08 and 1.12 in collaboration with the Russian Federation. However, much assistance is needed in the field of bathymetric charting.

The Board was apprised that Russia would make available bathymetric data existing in digital form. These data could be supplied in GF3 or MGD 77 format. Since Mauritius has no appropriate facilities to compile and prepare bathymetric charts, it was suggested that, if Russia could assist in the production, this country would archive these bathymetric data.

MOZAMBIQUE

Mozambique has the commitment to produce sheets 1.10, 1.13, and 1.16.

Presently the work done is as follows:

1. Digitising of land information for the 3 sheets.
2. Evaluation of sounding data and compilation at scale 1:1 mio.
3. Plotting of 3 fair sheets with evaluated sounding data and contour lines.

Next step of work will be as follows:

1. Evaluating of altimetric data provided by RSA for sheet 1.13
2. By mid 2001 send evaluated sheet 1.13; should be sent to Chief-Editor for revision.
3. Seek for altimetric (Smith + Sandwell) data for sheet 1.10 + 1.16.
4. Start evaluating and contour drawing for Sheet No. 1.10 + 1.16.
5. Sheet 1.10 should be ready for revision by Chief Editor by end 2001.

SEYCHELLES

Concerning sheet 1.05 nearshore and coastal data have to be made available to Mrs Taylor of the World Data Centre for Marine Geology and Geophysics in the USA. Data are available for contour areas only.

Now with regards to the archipelago off the main island (Mahe) there is intensive dredging and reclamation work going on meaning that data for that particular area may not be available soon.

Seychelles is not equipped for plotting and printing the sheet, hence further assistance by the USA will be required in that respect.

SOUTH AFRICA

Since commencing with the first of six sheets much has been learned with respect to the best method to use to process and evaluate data. Deficiencies with respect to handling the data in digital format were addressed as a matter of urgency, and software routines were developed to enable processing, filtering and colour coding of the data to be performed. The purchase of a postscript AO Plotter to replace the existing equipment has meant that accurate plots can be made of the data.

A programme has been put in place to rasterize the fair chart surveys and 1:1 mio bathymetry sheets with priority being given to areas covering national charting interests and the six IBCWIO sheets for which South Africa has accepted responsibility.

Sheet 1.19 is now provisionally contoured and needs to be assessed against satellite altimetry. The validation of the results produced will have to be carried out by a marine expert and South Africa will endeavour to encourage the active participation of Dr Chris Hartnady to carry out this important task. It is intended to complete sheet 1.19 contours in digital format by end of September/October of this year.

Sheets 1.20 and 1.21 will follow but any co-operation and assistance especially with Madagascar, Mozambique and France will be provided for sheets which border on sheets 1.16, 1.17 and 1.18.

South Africa is capable and willing to assist with respect to colour coded/contoured plots and derived satellite altimetry.

The Hydrographer will continue to support the IBCWIO project and promote the collecting of bathymetric data in the region.

USA

The National Geophysical Data Centre (NGDC) completed their compilation of sheet 1.05. The contours were given to the Seychelles participant for the addition of nearshore contours. The IHO Data Centre for Digital Bathymetry (IHODCDB) and NGDC are committed to continuing to support the IBCWIO Project by contributing expertise, data, and review. Ms Taylor stressed the interest of IHODCDB in receiving data that becomes available from the project. Specifically, she asked the Russian participant if the 70,000 newly digitised soundings within the areas of sheets 1.7, 1.8, and 1.12 could be sent to the IHODCDB. The Russian participant said he would consider the question and let the Chief Editor know his decisions.

RCMRD

The Regional Centre for Mapping of Resource for Development continued to coordinate IBCWIO's activities in Kenya, Mauritius, Seychelles and Tanzania, who are its members and members of the IBCWIO Project.

RCMRD communicated with Tanzania and the Institute of Marine Science (IMS), Zanzibar, which represents Tanzania in the Editorial Board. Plotting is supposed to be done by the Surveys Division in Tanzania. However, Mr Chodota sees sheet 1.07 is published by Germany. The RCMRD was in continuous contact with Kenya on sheet 1.04. On visit to Seychelles, he discussed the project with the national representative, Mr Rosette.

Finally during 1998, the Centre prepared a Project Document for the Bathymetric and Hydrographic Mapping of the Western Indian Ocean on behalf of Kenya and Tanzania, and a donor is being sought for financial support. The Centre will follow the offer to contact IOC/and IHB on this.

7.1 STATUS OF IBCWIO SHEETS, AND UPDATING OF THE IBCWIO WEBSITE

The Board agreed to a proposal made by Mr Huet, to present the status of the 21 sheets in tabular form. The Board requested Mr Travin to establish such a table in which also progress in the implementation should be documented, after his return to Paris.

The Chairman then went through the sheets one by one, as follows:

He followed the work plan as laid down in annex III of the Cape Town report.

Sheet 1.01, 1.02 (UK)

Unfortunately information on these two sheets, as had been promised by Mr Peter Hunter, did not reach the meeting in time, so that the present status could not be evaluated.

Sheet 1.03 (Russian Federation)

Captain Fridman explained that the scientific review had been done by HDNO, and a contour proof had been printed; a sheet of which was herewith presented to the Board. After a lengthy discussion on whether the Editorial Board should immediately comment on the sheet and then approve it with proposals for changes to allow publication without delay, or copies of the chart should be sent to the 10 Members of the Board to their home addresses, inviting them to comment in writing, the Board finally agreed that comments should be made during the meeting of the Board, and handed over directly to Mr Fridman. Two Members, Mrs. Taylor and Mr. Parvillers, should receive a copy to study it at home, and comment after a careful review before 15 October 2000.

It was also agreed that, on request of Mr Huet, this procedure should remain an exception, and that in future contour proof of all sheets should be sent to all 10 Board Members, in particular during the intersessional period of the Board.

Sheet 1.04 (Kenya, Russian Federation, Germany)

This sheet had been printed by Germany, and presented to the IOC Member States, at their last Assembly meeting, and now to the Board. Mr Travin, on behalf of the IOC Executive Secretary and the Board, thanked Dr Bettac for the publication and his great and continuous efforts. He also congratulated the members of the Board themselves because this was the first sheet ever published under IBCWIO.

Sheet 1.05 (Seychelles, USA)

Ms Taylor informed the Board that there may be still some Russian data which she has not yet received, and that also some near-shore data from the Seychelles were lacking. However, 90 percent of the data compilation had been finished. She felt that review in about 6 months might be realistic (a reviewer has still to be found), and that a colour proof might be available end of next year.

Sheet 1.06 (Russian Federation)

What had been said under sheet 1.03, is also applicable to this sheet.

Sheet 1.07 (Tanzania, Germany)

This sheet was printed in Germany and was presented to the IOC Executive Council at its meeting in Paris in June 2000. Dr Bettac is willing to accept corrections which he will stick in form of a label on the chart before it is reprinted.

Sheet 1.8 (Mauritius, Russian Federation)

Data are being collected; some are still expected to come from Russia. Russia is also invited to assist Mauritius in the production of the chart through training in St. Petersburg. The authority in charge of this sheet has still to be appointed by Mauritius.

Sheet 1.9 (Russian Federation)

This sheet is almost ready; colour proof will be printed in September, of which a copy will be sent to all Board members.

Sheet 1.10 (Mozambique)

Data are being collected, and more are supposed to come from South Africa. Soon there will be a need for an expert for scientific review. South Africa is invited to offer this expert.

Sheet 1.11 (Madagascar, France)

Data are being collected; the sheet may be ready for printing in 2004. France will train people who later can take up the work in Madagascar.

Sheet 1.12 (Mauritius, Russian Federation)

Data are being collected. Someone from Mauritius will go to Russia to be trained. A cooperation agreement is being prepared.

Sheet 1.13 (Mozambique)

Same as sheet 1.10; data are available.

Sheet 1.14 (Madagascar, France)

Same as sheet 1.11

Sheet 1.15 (France)

Same as sheets 1.11 and 1.14, but more advanced. At present data are collected in France.

Sheet 1.16 (Mozambique, South Africa), and Sheets 1.17 to 1.21 (South Africa).

It is planned to issue one sheet per year. In sheet 1.19 contours are available in digital format. Sheets 1.19 to 1.21 will come first; sheet 1.16 with Mozambique will follow, then come sheets 1.17 and 1.18. Sheets 1.17, 1.20 and 1.21 are guided by satellite data.

Concerning the IBCWIO Website, Mrs Taylor was invited to make sure that it is regularly updated. In the website reference will be made to other websites of interest to IBCWIO.

8. FURTHER DEVELOPMENT OF ON-GOING WORK ON THE IBCWIO

When item 7.1 was discussed, the future development had been taken into account. So there was no further discussion.

9. OTHER BUSINESS

9.1 TRAINING

The Chairman of CGOM, Dr. G. Giermann, informed the Board of the great attention IOC pays to training, and that each IOC programme now has its own training component including

mutual assistance and capacity building. The representative of IOC, Dr Travin outlined that the IBCWIO-IV Session recommended to establish partnerships between developed and developing countries for the preparation of some of the IBCWIO sheets (e.g. France with Madagascar on sheets 1.11 and 1.14). It was noted with satisfaction that, in some cases, the resulting cooperative arrangements made provision for training to the benefit of the developing Member States. The Board strongly encouraged all those involved in such partnerships to include, as far as feasible, a training component in any future IBCWIO cooperative arrangement. It was recommended for other developed countries members of the Editorial Board, to follow this. The Editorial Board invited South Africa to organize training courses in bathymetry in its Hydrographic Office. The IOC Executive Secretary was requested to provide the necessary financial support for this above-mentioned training. It was advised by the representative of IHO, Mr Huet, that countries of the region also make applications through the Italian Embassy for hydrography courses in the International Maritime Academy in Trieste, offered by the Italian Government and sponsored by IMO with the participation of IHO. Mr Huet will provide information material to the Board members. Similar courses could be held in UK, on request, as Mr Osborne pointed out.

9.2 REVISION OF THE IBCWIO WORK PLAN

(It was agreed to include in this item also proposals for a revision of the Specifications as contained in Annex IV of the Cape Town report).

Mr Huet presented a revised work plan and introduced the changes. The Board adopted the new work plan as contained in Annex V.

Concerning the specifications it was agreed to discuss necessary changes and to forward the revised specifications to the IOC Secretariat for further action. Dr. Travin will bring them to the attention of the next GCOM meeting.

Under this item, also comments for corrections in the printed sheets 1.04, 1.07, 1.03, and 1.06 were made. They are listed in Annex V. Sheet coordinators are invited to consider the proposed changes and to take them into account when revising their sheets. In this connection it was recommended that the Assembly Diagram for IBCWIO be redrawn, with coordinates introduced.

9.3 UNDERSEA FEATURE NAMES

Mr Huet, the representative of the GEBCO Subcommittee for Undersea Feature Names (SCUFN), informed the Board that a list of new names of underwater features of the region could be made available. He explained the procedures on how to submit names for international waters. Reference was made to an IHB brochure called *Standardization of Undersea Feature Names. Guidelines, Proposal Form, Terminology*, 1989.

10. DATES AND PLACE OF THE NEXT SESSION

The Board accepted the kind invitation of Mozambique to hold the next session in Maputo, in 2002.

11. ELECTION OF THE VICE-CHAIRMAN OF THE IBCWIO

Dr Travin proposed the name of Mr S. Osborn to become the new Vice-Chairman of the Editorial Board. The Board accepted Mr Osborn unanimously, and thanked the parting Vice-Chairman, Mr E. T. James, for his good services to the Board.

12. APPROVAL OF THE DRAFT SUMMARY REPORT

The Board adopted the Summary Report, with its six annexes including one Recommendation.

13. CLOSURE OF THE SESSION

The Chairman thanked the Government of Mauritius for its kind hospitality, and all participants and staff for the excellent work done. The meeting was closed on Friday noon, 28 July 2000.

ANNEX I

AGENDA

- 1. OPENING OF THE SESSION**
- 2. ADOPTION OF THE AGENDA**
- 3. CONDUCT OF THE SESSION AND DOCUMENTATION**
 - 3.1 MATTERS ARISING FROM THE PREVIOUS MEETING
- 4. EXCHANGE OF THOUGHTS AND EXPERIENCES IN EVALUATING PLOTTED DEPTHS FOR BATHYMETRIC CHARTS**
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ANNEX II

RECOMMENDATION EB-IBCWIO V.1

The IBCWIO Editorial Board

Noting that IBCWIO as well as other IBC Projects are making more and more use of predicted sea floor topography (pst) derived from satellite altimetry in combination with bathymetric sounding data to develop contours; and

Noting that pst may be differently interpreted or used depending on the experience of the compiler, for example whether features indicated by pst should only be included when confirmed by bathymetric sounding data or whether such features in the absence of supporting trackline data, may be included if of substantial relief; and

Acknowledging that it is the intention to include the contours from the IBC Projects in the GEBCO Digital Atlas (GDA);

Recommends that:

- Guidelines on how to combine predicted sea floor topography with bathymetric survey data to produce IBC contours be developed;
- The matter be referred to the IOC Consultative Group on Ocean Mapping (CGOM), the umbrella body for all IBC projects;
- A team of experts in the fields of predicted sea floor topography, marine geophysics and/or marine cartography, be identified to undertake this task; this should preferably include an experienced IBCWIO participant;
- These guidelines should be developed in a timely manner so that compilers of IBC sheets can benefit from the recommendations in their on going compilation work;
- These guidelines be possibly included in the existing IHO-IOC publication B-7 "GEBCO Guidelines", e.g. as an Appendix.

ANNEX III

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ANNEX IV
STATEMENTS

*by, Chairman CGO,
M Dr Gunter K.F. Giermann*

Mr Minister, Excellency,
Mr Chairman, Ladies and Gentlemen,

I wish to welcome you, the Board members and guests, in the name of the IOC Consultative Group on Ocean Mapping, which serves as coordinator of IOC's ocean mapping activities, and gives advice to IOC's governing bodies: the Assembly and Executive Council.

I may recall that, since the 17th Session of the Assembly in 1993, Ocean Mapping is a priority action of the Commission. There exist three main components:

- (i) GEBCO, the General Bathymetric Chart of the Oceans, is the work ocean map at a scale of 1:10 mio, which presents and overview of both, land and oceans, in 18 sheets.
- (ii) In order to get a higher resolution, in 6 sub-regions IOC prepares International Bathymetric Charts (IBCs), which give a good insight in the bottom topography, and can be supplemented by overlay sheets of geological/geophysical, but also other parameters. These maps cover the Mediterranean (IBCM), Caribbean (IBCCA), eastern Atlantic (IBCEA), western Indian Ocean (IBCWIO), western Pacific (IBCWP), and Arctic Ocean (IBCAO), with a total of approx. 150 individual sheets to be prepared. Their scale is 1:1 mio, i.e. 1 cm represents 10 kilometers.
- (iii) Finally, to put developing Member States in a position to explore their EEZs with the help of maps at a scale of at least 1:100 000 (where 1 cm represents 1 km), Member States of the Commission are now invited to assist these countries, if they so wish! These activities will fully respect the rights which countries exercise in their EEZs. (on 20 April, a first request was received from NIO in Pakistan). These maps shall assist developing Member States in the exploration, but also preservation of the marine environment, of their 200-mile zones. Coastal development, tourism, mineral resources research and prospecting, artisanal fisheries, archaeology, but also tsunami forecasting, all depend on such maps. To implement this, a strong support in TEMA and Capacity Building is required. I may remind you of the two training courses held in your region on board the German RV METEOR starting from Madagascar, in 1987, and from Durban, in 1993.

In future, all charts mentioned above will also be available in a digitised form.

I wish you much success for your meeting. Your contribution is most valuable.

*by the Chairman of the Editorial Board for IBCWIO,
Professor Werner Bettac*

Mr. Minister, Ladies and Gentlemen,

In the name of all members of my Board I have the pleasure to thank the Government of Mauritius for its kind invitation to host our 5th Session on this beautiful island. This is the second time that we meet here and we are sure that our session will proceed as it did in 1992. The 21 charts which will emerge from our work, will be of great benefit for the countries of the region, which joined our work with enthusiasm. There exists good cooperation between Kenya, Tanzania, Mozambique, South Africa, Madagascar, Mauritius, the Seychelles, and France, Germany, Russia, UK and the United States. We have already started with the publication of our first 2 sheets printed in Germany, followed by 3 sheets ready for printing in Russia and another sheet ready in South Africa.

We are sure that under the kind hospitality offered by our colleagues from Mauritius, our meeting will be a successful one.

Thank you.

ANNEX V

**PROPOSALS MADE BY EDITORIAL BOARD MEMBERS FOR
CHANGES ON PRINTED SHEETS NOS. 1.04, 1.07, 1.03 AND 1.06**

Printed Sheet 1.04

- a) The legend concerning bathymetric tints should be consistent for all charts in the sheet series. Is there a possibility of depths greater than 5999? If so, an additional tint indicator(s) should be added.
- b) The shoalest and deepest depths should be included where this information is available especially in basins and rises/mounts etc.
- c) Where a closed contour exists of reasonable extent, a presence of the depth value (or if the contour represents a depression downslope) this must be indicated clearly.
- d) Summary of contributing bathymetric data as specified in Specification 402 C.
- e) Addition of IHO logo to be considered.
- f) Thicken coastline.

Printed Sheet 1.07

- a) Coastline to be shown as a thick solid line in black. The 200 m land contour is accentuated and overpowers the coastline depicted as printed on the chart.
- b) The contour label 3400 in approximate position 8°18'S, 46°24'E appears to be an error and should probably read 2400.
- c) The sharpness of the 800 m contour line in approximate position 6°30'S, 39°48'E is questionable.
- d) Mozambique proposes that KERIMBAS should be spelt QUERIMBAS as it is in their opinion a Portuguese name.
- e) As for sheet 1.04 (b) with reference to features such as Geyser Reef, Giraud Sea Mount.
- f) As for sheet 1.04 (c)
- g) The name BAGAMOY should read BAGAMOYO
- h) The river RUFJI should be indicated on the sheet as it is the biggest river in Tanzania. Its mouth is opposite MAFIA ISLAND.
- i) The 200, 400, 600, 800 m contour around Comoro Island: missing in places.
- j) More indication of deepest or shoalest depth where appropriate.

Proof Sheets 1.03 and 1.06

Source of detailed survey to be included in bottom left margins with appropriate open faced sans serif reference number within the area in the body of the chart. The style of lettering and linework used for this to be in accordance with that used on sheet 1.07.

- a) Summary of the contributing bathymetric data as specified in Specifications 402.C.
- b) The sheet being represented should be highlighted in “*The Assembly Diagram of the IBCWIO*”.
- c) Point depths are indicated without supporting bathymetry tracklines running through these points. These need to be resolved.
- d) The colours used for the bathymetric intervals, as specified in 403D, to be consistent with those printed on the printed sheets 1.04 and 1.07.
- e) The addition of N or S to indicate the hemisphere north or south to be added.
- f) The reference to the EGS 84 Spheroid, Units of measurement for Heights, and Sheet Number are to be included in the Title Notes.
- g) The logo of the IHO might be included, as depicted on published sheet 1.07.
- h) Size and fonts not in agreement with printed sheets 1.04, 1.07. Chart number (1.03, etc.), contour labels, sheet limits, Title Notes, etc.
- i) Contour labels are sparse and a review of these with a view to adding more, to minimize misinterpretation.
- j) Lines in chart border drawing attention to 5’ segments of latitude and longitude. In the case of latitudes this line should start directly at the beginning of every degree of latitude from lowest value to highest value towards the N and S poles.

In the case of longitudes extending eastwards away from Greenwich, i.e. the first black line should appear directly to the right of the start of each degree line of longitude.
- k) The sheet coordinates in degrees minutes and seconds followed by the appropriate letter S, N, E or W.
- l) Large blemishes/spots, e.g. sheet 1.06, southern border between 67°-68°, and western latitude border between 4° and 5° and in various places in the body of the sheets, need to be identified and removed.
- m) The legend M _ _ _ in the southern border of each sheet should be removed.
- n) Amend the wording of the South African legend in Contributing Organisations to read: South African Naval Hydrographic Office, Cape Town.

- o) On the published sheets the colour of names is in black, but those on the proofs is in blue. The decision resulting from this point may require a new statement in the Specifications Section 501, after existing paragraph (c).
- p) Will the trimmed size of all sheets be the same?
- q) Colours of all contours (land and bathymetric) are to be depicted in black with thick lines being used as specified in amended specifications 302, 303B, 403B and 403C.

COMMENT CONCERNING ALL SHEETS

The line “Due to the possibility of name changes, these should not be considered as authoritative.” is to be removed from the nomenclature note to the right of the Title Notes

ANNEX VI

LIST OF ACRONYMS

ACUF	Advisory Committee on Undersea Features (SCUFN)
AGU	American Geophysical Union
BODC	British Oceanographic Data Centre
CERESCOR	Centre de Recherche Scientifique de Conakry (Guinea)
CGOM	IOC Consultative Group on Ocean Mapping
CHS	Canadian Hydrographic Service
DTM	Digital Terrain Model
EB	Editorial Board
EMSCS	European Mediterranean Seismological Centre (France)
GAPA	International Geological/Geophysical Atlases of the Atlantic and Pacific Oceans
GDA	GEBCO Digital Atlas (GEBCO Data base)
GEBCO	General Bathymetric Chart of the Oceans (IOC-IHO)
GLOSS	Global Sea Level Observing System (IOC)
HDNO	Head Department of Navigation and Oceanography (Russian Federation)
IASC	International Arctic Science Committee (Norway)
IBCCA	International Bathymetric Chart of the Caribbean Sea and the Gulf of Mexico
IBCEA	International Bathymetric Chart of the Central Eastern Atlantic
IBC	International Bathymetric Chart
IBCM	International Bathymetric Chart of the Mediterranean and its Geological/Geophysical Series
IBCWIO	International Bathymetric Chart of the Western Indian Ocean
IBCWP	International Bathymetric Chart of the Western Pacific
IFREMER	Institut Francais de Recherche pour l'Exploitation de la Mer
IGOSS	Integrated Global Ocean Services System (IOC-WMO)
IHB	International Hydrographic Bureau (Monaco)
IHO	International Hydrographic Organization (Monaco)
INEGI	Instituto Nacional de Estadística, Geografía e Informática (Mexico)
IOC	Intergovernmental Oceanographic Commission (UNESCO)
IOS	Institute of Oceanographic Sciences (UK)
ISM	International Sea Mapping
NERC	Natural Environment Research Council (UK)
NGDC	National Geophysical Data Centre (USA)
ORSTOM	Institut Francais de Recherche Scientifique pour le Développement en Coopération
SAREC	Swedish Agency for Research Co-operation with Developing Countries
SCAR	Scientific Committee on Antarctic Research (UK)
SCDB	Sub-Committee on Digital Bathymetry (GEBCO)
SCOR	Scientific Committee on Oceanic Research (USA)
SCUFN	Sub-Committee on Undersea Feature Names (GEBCO)
SHOM	Service Hydrographique et Oceanographique de la Marine (France)
SOC	Southampton Oceanographic Centre (UK)
SOPAC	South Pacific Applied Geo-science Commission (Fiji)
UNCLOS	United Nations Conference on the Law of the Sea
UNESCO	United Nations Educational, Scientific and Cultural Organization
WVS	World Vector Shoreline
WWW	World-Wide Web

In this Series, entitled

Reports of Meetings of Experts and Equivalent Bodies, which was initiated in 1984 and which is published in English only, unless otherwise specified, the reports of the following meetings have already been issued:

1. Third Meeting of the Central Editorial Board for the Geological/Geophysical Atlases of the Atlantic and Pacific Oceans
2. Fourth Meeting of the Central Editorial Board for the Geological/Geophysical Atlases of the Atlantic and Pacific Oceans S. Fourth Session of the Joint IOC-WMO-CPPS Working Group on the Investigations of 'El Niño' (**Also printed in Spanish**)
4. First Session of the IOC-FAO Guiding Group of Experts on the Programme of Ocean Science in Relation to Living Resources
5. First Session of the IOC-UN(OETB) Guiding Group of Experts on the Programme of Ocean Science in Relation to Non-Living Resources
6. First Session of the Editorial Board for the International Bathymetric Chart of the Mediterranean and Overlay Sheets
7. First Session of the Joint CCOP(SOPAC)-IOC Working Group on South Pacific Tectonics and Resources
8. First Session of the IODE Group of Experts on Marine Information Management
9. Tenth Session of the Joint CCOP-IOC Working Group on Post-IDOE Studies in East Asian Tectonics and Resources
10. Sixth Session of the IOC-UNEP Group of Experts on Methods, Standards and Intercalibration
11. First Session of the IOC Consultative Group on Ocean Mapping (**Also printed in French and Spanish**)
12. Joint 100-WMO Meeting for Implementation of IGOSS XBT Ships-of-Opportunity Programmes
13. Second Session of the Joint CCOP/SOPAC-IOC Working Group on South Pacific Tectonics and Resources
14. Third Session of the Group of Experts on Format Development
15. Eleventh Session of the Joint CCOP-IOC Working Group on Post-IDOE Studies of South-East Asian Tectonics and Resources
16. Second Session of the IOC Editorial Board for the International Bathymetric Chart of the Mediterranean and Overlay Sheets
17. Seventh Session of the IOC-UNEP Group of Experts on Methods, Standards and Intercalibration
18. Second Session of the IOC Group of Experts on Effects of Pollutants
19. Primera Reunión del Comité Editorial de la COI para la Carta Batimétrica Internacional del Mar Caribe y Parte del Océano Pacífico frente a Centroamérica (**Spanish only**)
20. Third Session of the Joint CCOP/SOPAC-IOC Working Group on South Pacific Tectonics and Resources
21. Twelfth Session of the Joint CCOP-IOC Working Group on Post-IDOE Studies of South-East Asian Tectonics and Resources
22. Second Session of the IODE Group of Experts on Marine Information Management
23. First Session of the IOC Group of Experts on Marine Geology and Geophysics in the Western Pacific
24. Second Session of the IOC-UN(OETB) Guiding Group of Experts on the Programme of Ocean Science in Relation to Non-Living Resources (**Also printed in French and Spanish**)
25. Third Session of the IOC Group of Experts on Effects of Pollutants
26. Eighth Session of the IOC-UNEP Group of Experts on Methods, Standards and Intercalibration
27. Eleventh Session of the Joint IOC-IHO Guiding Committee for the General Bathymetric Chart of the Oceans (**Also printed in French**)
28. Second Session of the IOC-FAO Guiding Group of Experts on the Programme of Ocean Science in Relation to Living Resources
29. First Session of the IOC-IAEA-UNEP Group of Experts on Standards and Reference Materials
30. First Session of the IOCARIBE Group of Experts on Recruitment in Tropical Coastal Demersal Communities (**Also printed in Spanish**)
31. Second IOC-WMO Meeting for Implementation of IGOSS XBT Ship-of-Opportunity Programmes
32. Thirteenth Session of the Joint CCOP-IOC Working Group on Post-IDOE Studies of East Asia Tectonics and Resources
33. Second Session of the IOC Task Team on the Global Sea-Level Observing System
34. Third Session of the IOC Editorial Board for the International Bathymetric Chart of the Mediterranean and Overlay Sheets
35. Fourth Session of the IOC-UNEP-IMO Group of Experts on Effects of Pollutants
36. First Consultative Meeting on RNODCs and Climate Data Services
37. Second Joint IOC-WMO Meeting of Experts on IGOSS-IODE Data Flow
38. Fourth Session of the Joint CCOP/SOPAC-IOC Working Group on South Pacific Tectonics and Resources
39. Fourth Session of the IODE Group of Experts on Technical Aspects of Data Exchange
40. Fourteenth Session of the Joint CCOP-IOC Working Group on Post-IDOE Studies of East Asian Tectonics and Resources
41. Third Session of the IOC Consultative Group on Ocean Mapping
42. Sixth Session of the Joint IOC-WMO-CCPS Working Group on the Investigations of 'El Niño' (**Also printed in Spanish**)
43. First Session of the IOC Editorial Board for the International Bathymetric Chart of the Western Indian Ocean
44. Third Session of the IOC-UN(OALOS) Guiding Group of Experts on the Programme of Ocean Science in Relation to Non-Living Resources
45. Ninth Session of the IOC-UNEP Group of Experts on Methods, Standards and Intercalibration
46. Second Session of the IOC Editorial Board for the International Bathymetric Chart of the Caribbean Sea and the Gulf of Mexico
47. First Session of the IOC Editorial Board for the International Bathymetric Chart of the Western Indian Ocean
48. Twelfth Session of the Joint IOC-IHO Guiding Committee for the General Bathymetric Chart of the Oceans
49. Fifteenth Session of the Joint CCOP-IOC Working Group on Post-IDOE Studies of East Asian Tectonics and Resources
50. Third Joint IOC-WMO Meeting for Implementation of IGOSS XBT Ship-of-Opportunity Programmes
51. First Session of the IOC Group of Experts on the Global Sea-Level Observing System
52. Fourth Session of the IOC Editorial Board for the International Bathymetric Chart of the Mediterranean
53. First Session of the IOC Editorial Board for the International Chart of the Central Eastern Atlantic (**Also printed in French**)
54. Third Session of the IOC Editorial Board for the International Bathymetric Chart of the Caribbean Sea and the Gulf of Mexico (**Also printed in Spanish**)
55. Fifth Session of the IOC-UNEP-IMO Group of Experts on Effects of Pollutants
56. Second Session of the IOC Editorial Board for the International Bathymetric Chart of the Western Indian Ocean
57. First Meeting of the IOC *ad hoc* Group of Experts on Ocean Mapping in the WESTPAC Area
58. Fourth Session of the IOC Consultative Group on Ocean Mapping

59. Second Session of the IOC-WMO/IGOSS Group of Experts on Operations and Technical Applications
60. Second Session of the IOC Group of Experts on the Global Sea-Level Observing System
61. UNEP-IOC-WMO Meeting of Experts on Long-Term Global Monitoring System of Coastal and Near-Shore Phenomena Related to Climate Change
62. Third Session of the IOC-FAO Group of Experts on the Programme of Ocean Science in Relation to Living Resources
63. Second Session of the IOC-IAEA-UNEP Group of Experts on Standards and Reference Materials
64. Joint Meeting of the Group of Experts on Pollutants and the Group of Experts on Methods, Standards and Inter-calibration
65. First Meeting of the Working Group on Oceanographic Co-operation in the ROPME Sea Area
66. Fifth Session of the Editorial Board for the International Bathymetric and its Geological/Geophysical Series
67. Thirteenth Session of the IOC-IHO Joint Guiding Committee for the General Bathymetric Chart of the Oceans **(Also printed in French)**
68. International Meeting of Scientific and Technical Experts on Climate Change and Oceans
69. UNEP-IOC-WMO-IUCN Meeting of Experts on a Long-Term Global Monitoring System
70. Fourth Joint IOC-WMO Meeting for Implementation of IGOSS XBT Ship-of-Opportunity Programmes
71. ROPME-IOC Meeting of the Steering Committee on Oceanographic Co-operation in the ROPME Sea Area
72. Seventh Session of the Joint IOC-WMO-CPPS Working Group on the Investigations of 'El Niño' **(Spanish only)**
73. Fourth Session of the IOC Editorial Board for the International Bathymetric Chart of the Caribbean Sea and the Gulf of Mexico **(Also printed in Spanish)**
74. UNEP-IOC-ASPEI Global Task Team on the Implications of Climate Change on Coral Reefs
75. Third Session of the IODE Group of Experts on Marine Information Management
76. Fifth Session of the IODE Group of Experts on Technical Aspects of Data Exchange
77. ROPME-IOC Meeting of the Steering Committee for the Integrated Project Plan for the Coastal and Marine Environment of the ROPME Sea Area
78. Third Session of the IOC Group of Experts on the Global Sea-level Observing System
79. Third Session of the IOC-IAEA-UNEP Group of Experts on Standards and Reference Materials
80. Fourteenth Session of the Joint IOC-IHO Guiding Committee for the General Bathymetric Chart of the Oceans
81. Fifth Joint IOG-WMO Meeting for Implementation of IGOSS XBT Ship-of-Opportunity Programmes
82. Second Meeting of the UNEP-IOC-ASPEI Global Task Team on the Implications of climate Change on Coral Reefs
83. Seventh Session of the JSC Ocean Observing System Development Panel
84. Fourth Session of the IODE Group of Experts on Marine Information Management
85. Sixth Session of the IOC Editorial Board for the International Bathymetric chart of the Mediterranean and its Geological/Geophysical Series
86. Fourth Session of the Joint IOC-JGOFS Panel on Carbon Dioxide
87. First Session of the IOC Editorial Board for the International Bathymetric Chart of the Western Pacific
88. Eighth Session of the JSC Ocean Observing System Development Panel
89. Ninth Session of the JSC Ocean Observing System Development Panel
90. Sixth Session of the IODE Group of Experts on Technical Aspects of Data Exchange
91. First Session of the IOC-FAO Group of Experts on OSLR for the IOCINCWIO Region
92. Fifth Session of the Joint IOC-JGOFS CO₂ Advisory Panel Meeting
93. Tenth Session of the JSC Ocean Observing System Development Panel
94. First Session of the Joint CMM-IGOSS-IODE Sub-group on Ocean Satellites and Remote Sensing
95. Third Session of the IOC Editorial Board for the International Chart of the Western Indian Ocean
96. Fourth Session of the IOC Group of Experts on the Global Sea Level Observing System
97. Joint Meeting of GEMSI and GEEP Core Groups
98. First Session of the Joint Scientific and Technical Committee for Global Ocean Observing System
99. Second International Meeting of Scientific and Technical Experts on Climate Change and the Oceans
100. First Meeting of the Officers of the Editorial Board for the International Bathymetric Chart of the Western Pacific
101. Fifth Session of the IOC Editorial Board for the International Bathymetric Chart of the Caribbean Sea and the Gulf of Mexico
102. Second Session of the Joint Scientific and Technical Committee for Global Ocean Observing System
103. Fifteenth Session of the Joint IOC-IHO Committee for the General Bathymetric Chart of the Oceans
104. Fifth Session of the IOC Consultative Group on Ocean Mapping
105. Fifth Session of the IODE Group of Experts on Marine Information Management
106. IOC-NOAA *Ad hoc* Consultation on Marine Biodiversity
107. Sixth Joint IOC-WMO Meeting for Implementation of IGOSS XBT Ship-of-Opportunity Programmes
108. Third Session of the Health of the Oceans (HOTO) Panel of the Joint Scientific and Technical Committee for GLOSS
109. Second Session of the Strategy Subcommittee (SSC) of the IOC-WMO-UNEP Intergovernmental Committee for the Global Ocean Observing System
110. Third Session of the Joint Scientific and Technical Committee for Global Ocean Observing System
111. First Session of the Joint GCOS-GOOS-WCRP Ocean Observations Panel for Climate
112. Sixth Session of the Joint IOC-JGOFS CO₂ Advisory Panel Meeting
113. First Meeting of the IOC/WESTPAC Co-ordinating Committee for the North-East Asian Regional - Global Ocean Observing System (NEAR-GOOS)
114. Eighth Session of the Joint IOC-WMO-CPPS Working Group on the Investigations of "El Niño" **(Spanish only)**
115. Second Session of the IOC Editorial Board of the International Bathymetric Chart of the Central Eastern Atlantic **(Also printed in French)**
116. Tenth Session of the Officers Committee for the Joint IOC-IHO General Bathymetric Chart of the Oceans (GEBCO), USA, 1996
117. IOC Group of Experts on the Global Sea Level Observing System (GLOSS), Fifth Session, USA, 1997
118. Joint Scientific Technical Committee for Global Ocean Observing System (J-GOOS), Fourth Session, USA, 1997
119. First Session of the Joint 100-WMO IGOSS Ship-of-Opportunity Programme Implementation Panel, South Africa, 1997
120. Report of Ocean Climate Time-Series Workshop, Joint GCOS-GOOS-WCRP Ocean Observations Panel for Climate, USA, 1997

121. IOC/WESTPAC Co-ordinating Committee for the North-East Asian Regional Global Ocean Observing System (NEAR-GOOS), Second Session, Thailand, 1997
122. First Session of the IOC-IUCN-NOAA *Ad hoc* Consultative Meeting on Large Marine Ecosystems (LME), France, 1997
123. Second Session of the Joint GCOS-GOOS-WCRP Ocean Observations Panel for Climate (OOPC), South Africa, 1997
124. Sixth Session of the IOC Editorial Board for the International Bathymetric Chart of the Caribbean Sea and the Gulf of Mexico, Colombia, 1996 (**also printed in Spanish**)
125. Seventh Session of the IODE Group of Experts on Technical Aspects of Data Exchange, Ireland, 1997
126. IOC-WMO-UNEP-ICSU Coastal Panel of the Global Ocean Observing System (GOOS), First Session, France, 1997
127. Second Session of the IOC-IUCN-NOAA Consultative Meeting on Large Marine Ecosystems (LME), France, 1998
128. Sixth Session of the IOC Consultative Group on Ocean Mapping (CGOM), Monaco, 1997
129. Sixth Session of the Tropical Atmosphere - Ocean Array (TAO) Implementation Panel, United Kingdom, 1997
130. First Session of the IOC-WMO-UNEP-ICSU Steering Committee of the Global Ocean Observing System (GOOS), France, 1998
131. Fourth Session of the Health of the Oceans (HOTO) Panel of the Global Ocean Observing System (GOOS), Singapore, 1997
132. Sixteenth Session of the Joint IOC-IHO Guiding Committee for the General Bathymetric Chart of the Oceans (GEBCO), United Kingdom, 1997
133. First Session of the IOC-WMO-UNEP-ICSU-FAO Living Marine Resources Panel of the Global Ocean Observing System (GOOS), France, 1998
134. Fourth Session of the IOC Editorial Board for the International Bathymetric Chart of the Western Indian Ocean (IOC/EB-IBCWIO-IW3), South Africa, 1997
135. Third Session of the Joint GCOS-GOOS-WCRP Ocean Observations Panel for Climate (OOPC), France, 1998
136. Seventh Session of the Joint IOC-JGOFS C02 Advisory Panel Meeting, Germany, 1997
137. Implementation of Global Ocean Observations for GOOS/GCOS, First Session, Australia, 1998
138. Implementation of Global Ocean Observations for GOOS/GCOS, Second Session, France, 1998
139. Second Session of the IOC-WMO-UNEP-ICSU Coastal Panel of the Global Ocean Observing System (GOOS), Brazil, 1998
140. Third Session of IOC/WESTPAC Co-ordinating Committee for the North-East Asian Regional - Global Ocean Observing System (NEAR-GOOS), China, 1998
141. Ninth Session of the Joint IOC-WMO-CPPS Working Group on the Investigations of 'El Niño', Ecuador, 1998 (**Spanish only**)
142. Seventh Session of the IOC Editorial Board for the International Bathymetric Chart of the Mediterranean and its Geological/Geophysical Series, Croatia, 1998
143. Seventh Session of the Tropical Atmosphere-Ocean Array (TAO) Implementation Panel, Abidjan, Côte d'Ivoire, 1998
144. Sixth Session of the IODE Group of Experts on Marine Information Management (GEMIM), USA, 1999
145. Second Session of the IOC-WMO-UNEP-ICSU Steering Committee of the Global Ocean Observing System (GOOS), China, 1999
146. Third Session of the IOC-WMO-UNEP-ICSU Coastal Panel of the Global Ocean Observing System (GOOS), Ghana, 1999
147. Fourth Session of the GCOS-GOOS-WCRP Ocean Observations Panel for Climate (OOPC); Fourth Session of the WCRP CLIVAR Upper Ocean Panel (UOP); Special Joint Session of OOPC and UOP, USA, 1999
148. Second Session of the IOC-WMO-UNEP-ICSU-FAO Living Marine Resources Panel of the Global Ocean Observing System (GOOS), France, 1999
149. Eighth Session of the Joint IOC-JGOFS CO2 Advisory Panel Meeting, Japan, 1999
150. Fourth Session of the IOC/WESTPAC Co-ordinating Committee for the North-East Asian Regional – Global Ocean Observing System (NEAR-GOOS), Japan, 1999
151. Seventh Session of the IOC Consultative Group on Ocean Mapping (CGOM), Monaco, 1999
152. Sixth Session of the IOC Group of Experts on the Global Sea level Observing System (GLOSS), France, 1999
153. Seventeenth Session of the Joint IOC-IHO Guiding Committee for the General Bathymetric Chart of the Oceans (GEBCO), Canada, 1999
154. Comité Editorial de la COI para la Carta Batimétrica Internacional del Mar Caribe y el Golfo de Mexico (IBCCA), Septima Reunión, Mexico, 1998
IOC Editorial Board for the International Bathymetric Chart of the Caribbean Sea and the Gulf of Mexico (IBCCA), Seventh Session, Mexico, 1998
155. Initial Global Ocean Observing System (GOOS) Commitments Meeting, IOC-WMO-UNEP-ICSU/Impl-III/3, France, 1999
156. First Session of the *ad hoc* Advisory Group for IOCARIBE-GOOS, Venezuela, 1999 (**also printed in Spanish and French**)
157. Fourth Session of the IOC-WMO-UNEP-ICSU Coastal Panel of the Global Ocean Observing System (GOOS), China, 1999
158. Eighth Session of the IOC Editorial Board for the International Bathymetric Chart of the Mediterranean and its Geological/Geophysical Series, Russian Federation, 1999
159. Third Session of the IOC-WMO-UNEP-ICSU-FAO Living Marine Resources Panel of the Global Ocean Observing System (GOOS), Chile, 1999
160. Fourth Session of the IOC-WMO-UNEP-ICSU-FAO Living Marine Resources Panel of the Global Ocean Observing System (GOOS). Hawaii, 2000
161. Eighth Session of the IODE Group of Experts on Technical Aspects of Data Exchange, USA, 2000
162. Third Session of the IOC-IUCN-NOAA Consultative Meeting on Large Marine Ecosystems (LME), France, 2000
163. Fifth Session of the IOC-WMO-UNEP-ICSU Coastal Panel of the Global Ocean Observing System (GOOS), Poland, 2000
164. Third Session of the IOC-WMO-UNEP-ICSU Steering Committee of the Global Ocean Observing System (GOOS), France, 2000
165. Second Session of the *ad hoc* Advisory Group for IOCARIBE-GOOS, Cuba, 2000 (**also printed in Spanish and French**)
166. First Session of the Coastal Ocean Observations Panel, Costa Rica, 2000
167. First GOOS Users' Forum, 2000
168. Seventh Session of the Group of Experts on the Global Sea Level Observing System, Honolulu, 2001
169. First Session of the Advisory Body of Experts on the Law of the Sea (ABE-LOS), France, 2001 (**also printed in French**)
170. Fourth Session of the IOC-WMO-UNEP-ICSU Steering Committee of the Global Ocean Observing System, Chile, 2001
171. First Session of the IOC-SCOR Ocean CO₂ Advisory Panel, France, 2000
172. *Cancelled*
173. Third Session of the *ad hoc* Advisory Group for IOCARIBE-GOOS, USA, 2001 (**also printed in Spanish and French**)
174. Second Session of the Coastal Ocean Observations Panel and GOOS Users' Forum, Italy, 2001
175. Second Session of the Black Sea GOOS Workshop, Georgia, 2001
176. Fifth Session of the IOC/WESTPAC Co-ordinating Committee for the North-East Asian Regional – Global Ocean Observing System (NEAR-GOOS), Republic of Korea, 2000

177. Second Session of the Advisory Body of Experts on the Law of the Sea (IOC/ABE-LOS), Morocco, 2002 **(also printed in French)**
178. Third Session of the Coastal Ocean Observations Panel and GOOS Users' Forum, Vietnam, 2002
179. Fourth Session of the IOC-IUCN-NOAA Consultative Meeting on Large Marine Ecosystems (LMEs), France, 2002
180. Second Session of the IOC-SCOR Ocean CO₂ Advisory Panel, Honolulu, Hawaii, U.S.A, 2002 **(electronic copy only)**
181. IOC Workshop on the Establishment of SEAGOOS in the Wider Southeast Asian Region, Seoul, Republic of Korea, 2001 (SEAGOOS preparatory workshop) **(electronic copy only)**
182. Third Session of the GOOS Users' Forum and Coastal Ocean Observations Panel, Vietnam, 2002
183. Fourth Session of the IOC-IUCN-NOAA Consultative Meeting on Large Marine Ecosystems (LMEs), France, 2002
184. Seventh Session of the IODE Group of Experts on Marine Information Management (GEMIM), France, 2002 **(electronic copy only)**
185. Sixth Session of IOC/WESTPAC Coordinating Committee for the North-East Asian Regional - Global Ocean Observing System (NEAR-GOOS), Republic of Korea, 2001
186. First Session of the Global Ocean Observing System (GOOS) Capacity Building Panel, Switzerland, 2002 **(electronic copy only)**
187. Fourth Session of the ad hoc Advisory Group for IOCARIBE-GOOS, 2002, Mexico **(also printed in French and Spanish)**
188. Fifth Session of the IOC Editorial Board for the International Bathymetric Chart of the Western Indian Ocean (IBCWIO), Mauritius, 2000