

5TH MEETING OF THE HYDROGRAPHIC SERVICES AND STANDARDS COMMITTEE
Shanghai, China, 5-8 November 2013

TERMS OF REFERENCE FOR HSSC
and Related Working Groups
(October 2013)

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I. HYDROGRAPHIC SERVICES AND STANDARDS COMMITTEE (HSSC) –
Ref: Decision 4 of the XVIIIth IHC (editorial corrections made in July 2013)

Considering the need to promote and coordinate the development of standards, specifications and guidelines for official products and services to meet the requirements of mariners and other users of hydrographic information, the International Hydrographic Organization establishes a Hydrographic Services and Standards Committee (HSSC) with the following Terms of Reference and Rules of Procedure. The HSSC shall be the IHO Technical Steering Group acting on behalf of all Member States and shall report to each ordinary session of the International Hydrographic Conference (*“each ordinary session of the International Hydrographic Conference”* to be replaced by *“each ordinary session of the Assembly through the Council”* when the Council and Assembly are established).

1. Terms of Reference

- 1.1 Monitor the requirements of mariners and other users of hydrographic information concerning the use of hydrographic products and information systems that may require data and information provided by national hydrographic authorities, and to identify those technical matters that may affect the activities and products of those authorities.
- 1.2 Monitor the work of specified IHO Inter-Organizational Bodies engaged in hydrographic services, standards and related technical activities as directed by the International Hydrographic Conference (*“International Hydrographic Conference”* to be replaced by *“the Assembly”* when the Assembly is established) and provide advice and guidance to the IHO representatives as required.
- 1.3 Study and propose methods and standards for the acquisition, assessment and provision of official hydrographic data, nautical products and other related services.
- 1.4 Maintain technical liaison with other relevant stakeholders, such as type-approval authorities, navigation equipment manufacturers, and the hydrographic data user-community.

- 1.5 Prepare and maintain publications related to the objectives of the Committee.
- 1.6 Prepare a Committee Work Program and propose it to each ordinary session of the International Hydrographic Conference (*“each ordinary session of the International Hydrographic Conference”* to be replaced by *“each ordinary session of the Assembly through the Council”* when the Assembly and the Council are established). Consider and decide upon proposals for new work items under the Committee Work Program, taking into account the financial, administrative and wider stakeholder consequences and the IHO Strategic Plan and Work Program.
- 1.7 Monitor the execution of the Committee Work Program and report to each ordinary session of the International Hydrographic Conference (*“ordinary session of the International Hydrographic Conference”* to be replaced by *“meeting of the Council”* when the Council and Assembly are established), including an evaluation of the performance achieved.
- 1.8 Propose to the International Hydrographic Conference (*“the International Hydrographic Conference”* to be replaced by *“the Assembly through the Council”* when the Council and Assembly are established), the establishment of new Sub-Committees, when needed, supported by a comprehensive cost-benefit analysis.
- 1.9 As required, establish Working Groups to fulfil the Committee Work Program, in conformance with IHO Resolution 11/1962 as amended (*“IHO Resolution 11/1962 as amended”* to be replaced by *“Article 6 of the General Regulations”* when the revised IHO Convention enters into force) and approve their Terms of Reference and Rules of Procedure.
- 1.10 Monitor the work of its Sub-committees, Working Groups and other bodies directly subordinate to the Committee.
- 1.11 Review annually the continuing need for each Working Group previously established by the Committee.
- 1.12 Liaise and maintain contact with relevant IHO and other bodies to ensure that IHO work activities are coordinated.
- 1.13 Liaise with other relevant international organizations and Non-Government International Organizations (NGIOs).
- 1.14 These Terms of Reference can be amended in accordance with IHO Resolution 11/1962 as amended (to be replaced by Article 6 of the General Regulations when the revised text of the IHO Convention enters into force).

2. Rules of Procedure

- 2.1 The Committee shall be composed of representatives of Member States. The Chairs of the relevant subordinate bodies of the Committee shall attend and report at all Committee Meetings. International Organizations and accredited Non-Government International Organizations (NGIOs) may attend Committee Meetings.
- 2.2 A Director of the International Hydrographic Bureau (*“the International Hydrographic Bureau”* to be replaced by *“the Secretariat”* when the Secretariat is established) shall act as Secretary to the Committee. The Secretary shall prepare the reports required for submission to each ordinary session of the Conference (*“the Conference”* to be replaced by *“the Assembly and Council”* when the Council and Assembly are established).
- 2.3 The Chair and Vice-Chair shall be a representative of a Member State. The election of the Chair and Vice-Chair shall be decided at the first meeting after each ordinary session of the Conference (*“Conference”* to be replaced by *“Assembly”* when the Assembly is established) and shall be determined by vote of the Member States present and voting. If the Chair is unable to carry out the duties of the office, the Vice-Chair shall act as the Chair with the same powers and duties.

- 2.4 The Committee shall meet once a year, unless decided otherwise by the Committee, whenever possible in conjunction with another relevant conference or meeting. The venue and date of the meeting shall be decided at the previous meeting, in order to facilitate participants' travel arrangements. Meetings should normally be scheduled to precede a session of the International Hydrographic Conference ("*International Hydrographic Conference*" to be replaced by "*Council or Assembly*" when the Council and Assembly are established) by approximately four months. The Chair or any member of the committee, with the agreement of the simple majority of all members of the Committee, can call extraordinary meetings. Confirmation of the venue and date shall normally be announced at least six months in advance. All intending participants shall inform the Chair and Secretary ideally at least one month in advance of their intention to attend meetings of the Committee.
- 2.5 Decisions shall generally be made by consensus. If votes are required on issues or to endorse proposals presented to the Committee, decisions shall be taken by a simple majority of Committee Members present and voting. When dealing with inter-sessional matters by correspondence, a simple majority of all Committee Members shall be required.
- 2.6 The draft record of meetings shall be distributed by the Secretary within six weeks of the end of meetings and participants' comments should be returned within three weeks of the date of despatch. Final minutes of meetings should be distributed to all IHO Member States and posted on the IHO website within three months after a meeting.
- 2.7 The working language of the Committee shall be English.
- 2.8 The Committee shall progress its work primarily through Working Groups, each of which shall address specific tasks. If required, a coordinating Sub-committee on Data Acquisition & Transfer Standards and a coordinating Sub-committee on Symbology & Data Presentation Standards shall coordinate the work of those working groups dealing with data and presentation standards respectively. Sub-committees and Working Groups shall operate by correspondence to the maximum extent practicable.
- 2.9 Recommendations of the Committee shall be submitted to IHO Member States for adoption through the IHB or International Hydrographic Conference as appropriate ("*IHB or International Hydrographic Conference as appropriate*" to be replaced by "*Council to the Assembly*" when the Council and Assembly are established).
- 2.10 These Rules of Procedure can be amended in accordance with IHO Resolution 11/1962 as amended (to be replaced by Article 6 of the General Regulations when the revised text of the IHO Convention enters into force).

II. TRANSFER STANDARD MAINTENANCE AND APPLICATIONS DEVELOPMENT W.G. (TSMAD) –

- Ref: 1) 1st HSSC Meeting (Singapore, October 2009)
2) Ref: 3rd HSSC Meeting (Monaco, November 2011)

1. Objective

- a) To maintain, develop and extend:
 - (i) the S-57 IHO transfer standard for digital hydrographic data;
 - (ii) the S-100 IHO Geospatial Standard for Hydrographic Data;
 - (iii) the S-101 IHO ENC Product Specification;
- b) To monitor the development of other related international standards.

2. Authority

This WG is a subsidiary of the Hydrographic Services and Standards Committee (HSSC). Its work is subject to HSSC approval.

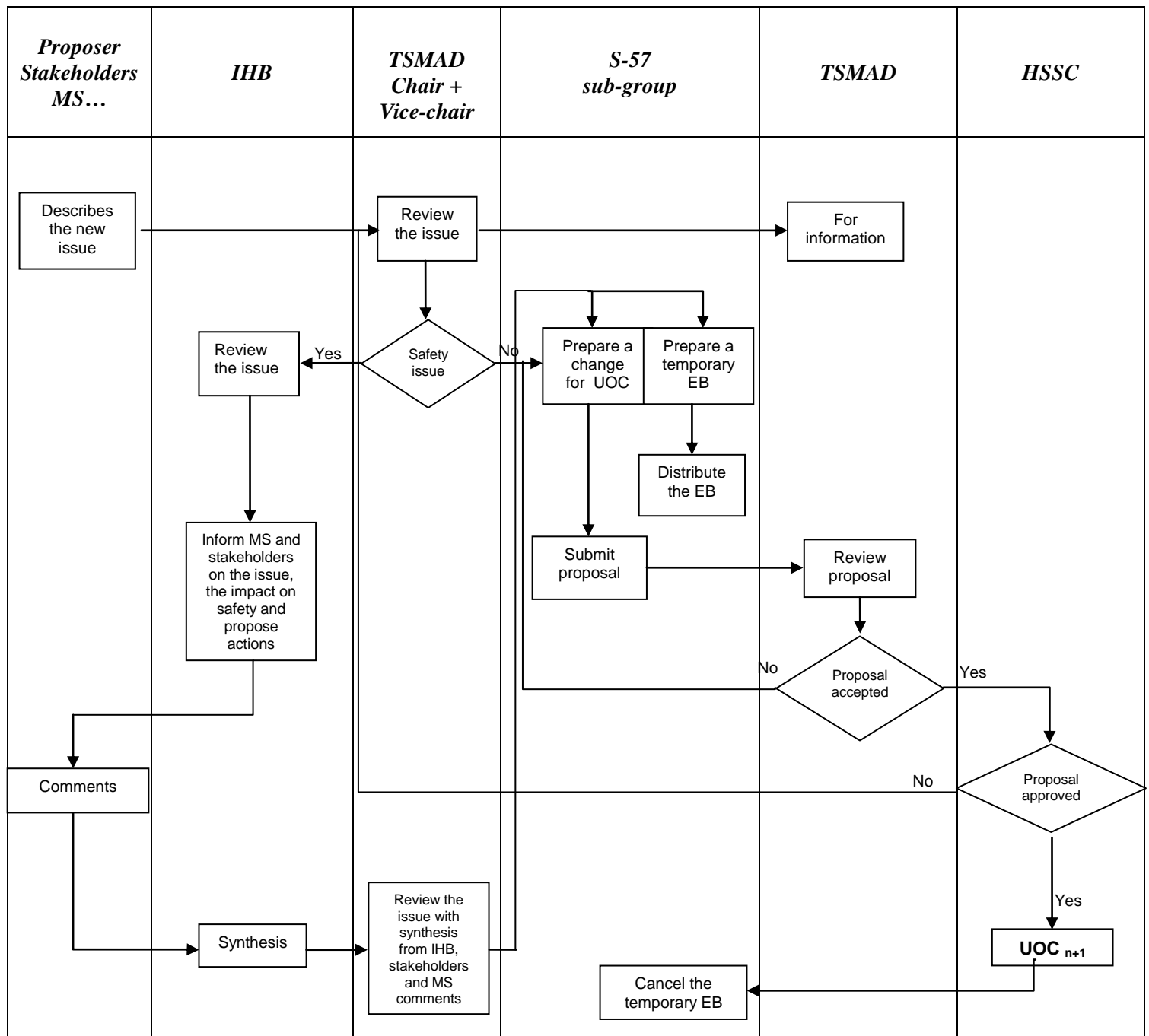
3. Procedures

- a) The WG should:
 - (i) maintain the S-57 IHO transfer standard for digital hydrographic data by preparing and promulgating maintenance documents containing clarifications, corrections and extensions when required. In the case of issues reported which may be data related, procedure described in Annex 1 must be adhered to;
 - (ii) maintain the S-100 IHO Geospatial Standard for Hydrographic Data as directed in Part 13 (S-100 Maintenance Procedures);
 - (iii) maintain the S-100 IHO ENC Product Specification;
 - (iv) review relevant international standards and specifications and advise HSSC accordingly;
 - (v) consider new topics as instructed by HSSC and advise HSSC accordingly and/or draft the relevant extension documents;
 - (vi) draft new editions of the IHO transfer standard for digital hydrographic data as instructed by HSSC.
- b) The WG should work by correspondence, group meetings, workshops or symposia. Permanent or temporary sub-working groups may be created by the WG to undertake detailed work on specific topics such as: maintenance of the IHO transfer standard for digital hydrographic data, product specifications, tidal information, survey information, etc. The WG should meet at least once a year. When meetings are scheduled, and in order to allow any WG submissions and reports to be submitted to HSSC on time, WG meetings should not normally occur later than nine weeks before a meeting of the HSSC.
- c) The WG should liaise with other HSSC WG's, international organizations and industry to educate and encourage the application of IHO standards to the work of those organizations.
- d) The WG should identify and promote the availability of other navigation-related data in ECDIS and in IHO geospatial standard-compliant format.
- e) The WG should identify a work programme for each year, including expected time frame.

4. Composition and Chairmanship

- a) The WG shall comprise representatives of IHO Member States (M/S), Expert Contributors and Accredited NGO Observers.
- b) Decisions should generally be made by consensus. If votes are required on issues or to endorse proposals presented to the WG, only M/S may cast a vote. Votes shall be on the basis of one vote per M/S represented.
- c) Expert Contributor membership is open to entities and organisations that can provide a relevant and constructive contribution to the work of the WG.
- d) The Chair and Vice-Chair shall be a representative of a Member State. The election of the Chair and Vice-Chair shall be decided at the first meeting after each ordinary session of the Conference (Conference to be replaced by Assembly when the revised IHO Convention enters force) and shall be determined by vote of the Member States present and voting.
- e) If the Chair is unable to carry out the duties of the office, the Vice-Chair shall act as the Chair with the same powers and duties.
- f) Expert Contributors shall seek approval of membership from the Chairman.
- g) Expert Contributor membership may be withdrawn in the event that a majority of the M/S represented in the WG agree that an Expert Contributor's continued participation is irrelevant or unconstructive to the work of the WG.
- h) All members shall inform the Chairman in advance of their intention to attend meetings of the WG.
- i) In the event that a large number of Expert Contributor members seek to attend a meeting, the Chairman may restrict attendance by inviting Expert Contributors to act through one or more collective representatives.

Annex 1



III. DATA PROTECTION SCHEME W.G. (DPSWG) –

Ref: 1st HSSC Meeting (Singapore, October 2009)

1. Objective

To develop and maintain an IHO ENC data protection scheme.

2. Authority

This WG is a subsidiary of the Hydrographic Services and Standards Committee (HSSC). Its work is subject to HSSC approval.

3. Procedures

a) The WG should:

- (i) Enable immediate preparation of an IHO ENC Data Protection Scheme v.1 with documentation, software kernel and test data modelled on the Primar Security Scheme.
- (ii) Review international developments in security services to amend and prepare IHO ENC Data Protection Scheme v.2 with industry representatives and other ECDIS standardisation bodies, and allow for a structured transition of the standard into the market.
- (iii) Develop procedures and information to enable IHO to assume responsibility of the documentation and supporting information and operate as the Security Scheme Administrator. Identify how technical support will be made available to IHO.

b) The WG will liaise and harmonise with other international ECDIS-related bodies as appropriate;

c) The WG should work by correspondence, and use group meetings, workshops or symposia only when required. When meetings are scheduled, and in order to allow any WG submissions and reports to be submitted to HSSC on time, WG meetings should not normally occur later than nine weeks before a meeting of the HSSC.

d) The WG should identify a work programme for each year, including expected time frame.

4. Composition and Chairmanship

a) The WG shall comprise representatives of IHO Member States (M/S), Expert Contributors and Accredited NGIO Observers.

b) Decisions should generally be made by consensus. If votes are required on issues or to endorse proposals presented to the WG, only M/S may cast a vote. Votes shall be on the basis of one vote per M/S represented.

c) Expert Contributor membership is open to entities and organisations that can provide a relevant and constructive contribution to the work of the WG.

d) The Chair and Vice-Chair shall be a representative of a Member State. The election of the Chair and Vice-Chair shall be decided at the first meeting after each ordinary session of the Conference (Conference to be replaced by Assembly when the revised IHO Convention enters force) and shall be determined by vote of the Member States present and voting.

e) If the Chair is unable to carry out the duties of the office, the Vice-Chair shall act as the Chair with the same powers and duties.

f) Expert Contributors shall seek approval of membership from the Chairman.

g) Expert Contributor membership may be withdrawn in the event that a majority of the M/S represented in the WG agree that an Expert Contributor's continued participation is irrelevant or unconstructive to the work of the WG.

h) All members shall inform the Chairman in advance of their intention to attend meetings of the

WG.

- i) In the event that a large number of Expert Contributor members seek to attend a meeting, the Chairman may restrict attendance by inviting Expert Contributors to act through one or more collective representatives.

IV. DIGITAL INFORMATION PORTRAYAL W.G. (DIPWG) –

Ref: 1st HSSC Meeting (Singapore, October 2009)

1. Objective

To maintain IHO specifications for colours, symbols and display rules used to show SENC information on ECDIS in a safe and ergonomic manner.

2. Authority

This WG is a subsidiary of the Hydrographic Services and Standards Committee (HSSC). Its work is subject to HSSC approval.

3. Procedures

a) The WG should:

(i) Maintain IHO Special Publication S-52, its accompanying Presentation Library and the portrayal related elements of IHO Special Publications S-100 and S-101, as well as the Portrayal Register of the Geospatial Information Infrastructure (GII) by preparing and promulgating maintenance documents when required.

(ii) Perform maintenance of S-52 and the GII Portrayal Register by immediate amendments for safety related matters and long-term revisions by deferred amendments. Collaborate with TSMAD in performing maintenance of the portrayal related elements of S-100 and S-101 by immediate amendments for safety related matters and long-term revisions by deferred amendments.

(iii) Draft new editions of S-52 and modifications to the GII Portrayal Register as instructed by HSSC.

(iv) Identify basic scientific fundamentals and provide guidance to ECDIS manufacturers related to colours and symbolization of hydrographic information.

(v) Provide and maintain a framework for display of SENC information that is feasible and practicable within available technology.

(vi) Coordinate technical exchange between DIPWG, type-approval authorities, ECDIS manufacturers and ECDIS user community, including the conduction of comprehensive testing and validation of colours and symbolization by manufacturers, and at-sea trials with mariners.

(vii) Monitor the operational performance and development of IHO specifications, progress in display technology, and human perception analysis.

(viii) Consider new topics and other applications affecting electronic chart display, and/or draft the relevant extension documents.

b) The WG should work by correspondence, group meetings, workshops or symposia. The WG should meet at least once every two years. When meetings are scheduled, and in order to allow any WG submissions and reports to be submitted to HSSC on time, WG meetings should not normally occur later than nine weeks before a meeting of the HSSC.

c) The WG should liaise and harmonize with other ECDIS-related bodies as appropriate (e.g., TSMAD, CSPCWG, IEC, IMO/IHO HGE, IALA, WMO, IACS, NATO, etc.).

d) The WG should identify a work programme for each year, including expected time frame.

4. Composition and Chairmanship

a) The WG shall comprise representatives of IHO Member States (M/S), Expert Contributors and Accredited NGIO Observers.

b) Decisions should generally be made by consensus. If votes are required on issues or to endorse proposals presented to the WG, only M/S may cast a vote. Votes shall be on the

basis of one vote per M/S represented.

- c) Expert Contributor membership is open to entities and organisations that can provide a relevant and constructive contribution to the work of the WG.
- d) The Chair and Vice-Chair shall be a representative of a Member State. The election of the Chair and Vice-Chair shall be decided at the first meeting after each ordinary session of the Conference (Conference to be replaced by Assembly when the revised IHO Convention enters force) and shall be determined by vote of the Member States present and voting.
- e) If the Chair is unable to carry out the duties of the office, the Vice-Chair shall act as the Chair with the same powers and duties.
- f) Expert Contributors shall seek approval of membership from the Chairman.
- g) Expert Contributor membership may be withdrawn in the event that a majority of the M/S represented in the WG agree that an Expert Contributor's continued participation is irrelevant or unconstructive to the work of the WG.
- h) All members shall inform the Chairman in advance of their intention to attend meetings of the WG.
- i) In the event that a large number of Expert Contributor members seek to attend a meeting, the Chairman may restrict attendance by inviting Expert Contributors to act through one or more collective representatives.

V. STANDARDISATION OF NAUTICAL PUBLICATIONS W.G. (SNPWG) –
Ref: 1st HSSC Meeting (Singapore, October 2009)

1. Objective

To develop guidelines for the preparation of nautical publications, in a digital format compatible with ECDIS.

2. Definition

A Nautical Publication is a special-purpose book, or a specially compiled database, that is issued officially by or on the authority of a Government, authorized Hydrographic Office or other relevant government institution and is designed to meet the requirements of marine navigation. Nautical publications include but are not limited to:

Distance Tables,
List of Buoys and Beacons,
List of Lights,
List of Radio Signals,
List of Symbols, Abbreviations and Terms used on Charts,
Mariners' Handbooks,
Notices to Mariners,
Routeing Guides,
Sailing Directions,
Tidal Stream Atlases,
Tide Tables.

Nautical publications can be made available in a paper or a digital format.

3. Authority

This WG is a subsidiary of the Hydrographic Services and Standards Committee (HSSC). Its work is subject to HSSC approval.

4. Procedures

- a) The WG should:
 - (i) Investigate the data format specifications, content and display requirements of digital nautical publications intended for use in ECDIS.
 - (ii) Draft guidance document(s) and/or revised technical resolutions, as appropriate.
 - (iii) Liaise with relevant IHO Technical WG's to ensure, technical feasibility and compatibility of any developed proposals.
- b) The WG should liaise with other HSSC WG's and other IHO and international bodies as appropriate and as instructed by HSSC.

The WG should work primarily by correspondence. The WG should attempt to meet at least once every two years, normally in connection with another convenient IHO forum. When meetings are scheduled, and in order to allow any WG submissions and reports to be submitted to HSSC on time, WG meetings should not normally occur later than nine weeks before a meeting of the HSSC.

- c) The WG should identify a work programme for each year, including expected time frame.

4. Composition and Chairmanship

- a) The WG shall comprise representatives of IHO Member States (M/S), Expert Contributors and Accredited NGIO Observers.
- b) Decisions should generally be made by consensus. If votes are required on issues or to endorse proposals presented to the WG, only M/S may cast a vote. Votes shall be on the basis of one vote per M/S represented.
- c) Expert Contributor membership is open to entities and organisations that can provide a relevant and constructive contribution to the work of the WG.
- d) The Chair and Vice-Chair shall be a representative of a Member State. The election of the Chair and Vice-Chair shall be decided at the first meeting after each ordinary session of the Conference (Conference to be replaced by Assembly when the revised IHO Convention enters force) and shall be determined by vote of the Member States present and voting.
- e) If the Chair is unable to carry out the duties of the office, the Vice-Chair shall act as the Chair with the same powers and duties.
- f) Expert Contributors shall seek approval of membership from the Chairman.
- g) Expert Contributor membership may be withdrawn in the event that a majority of the M/S represented in the WG agree that an Expert Contributor's continued participation is irrelevant or unconstructive to the work of the WG.
- h) All members shall inform the Chairman in advance of their intention to attend meetings of the WG.
- i) In the event that a large number of Expert Contributor members seek to attend a meeting, the Chairman may restrict attendance by inviting Expert Contributors to act through one or more collective representatives.

VI. CHART STANDARDIZATION AND PAPER CHART W.G. (CSPCWG) –

- Ref: 1) 1st HSSC Meeting (Singapore, October 2009)
 2) 4th HSSC Meeting (Taunton, United Kingdom, September 2012)

1. Objectives

- a. To provide a core of expertise on the concepts of charting, noting that whatever physical form the chart may take the fundamental concepts and elements of marine cartography remain the same.
- b. To develop and maintain the IHO publications for which it is responsible.

2. Authority

This WG is a subsidiary of the Hydrographic Services and Standards Committee (HSSC). Its work is subject to HSSC approval. In respect of the current cycle of revision of S-4 and in the interests of procedural efficiency the WG has authority to reach decisions on the maintenance and updating of this document and to seek direct endorsement of its proposals by IHO Member States via the IHB. This does not include matters that may have a strategic or financial implication for Member States or other interested stakeholders.

3. Procedures

- a. The WG's main tasks are to:
 - i. Keep under continuous review the IHO publication S-4 'Regulations of the IHO for International (INT) Charts and Chart Specifications of the IHO', in order to advise the IHO on their updating, design and format and the portrayal of symbols. Note: S-4 is supplemented by:
 - INT 1 'Symbols, Abbreviations and Terms used on Charts'
 - INT 2 'Borders, Graduation, Grids and Linear Scales'
 - INT 3 'Use of Symbols and Abbreviations, as recommended by the IHO'
 - ii. Advise the IHO on suggestions put forward by Member States to update S-4, in accordance with IHO Specification B-160, with the goal of achieving the maximum possible adherence by Member States to the Regulations and Specifications.
 - iii. Keep under continuous review the following IHO publications in order to advise the IHO on their updating:
 - S-11 Part A 'Guidance for the Preparation and Maintenance of International Chart Schemes'
 - S-49 'Recommendations concerning Mariners' Routeing Guides'
 - iv. Advise the IHB and Regional Hydrographic Commissions, as appropriate, on the work of International Charting Coordination Working Groups (ICCWG) or Regional Charting Groups (RCG) in order to promote the production of international (INT) charts. The role of the WG is purely consultative.
 - v. Offer advice based on its experience to ICCWG/RCG and individual Member States, on chart schemes and cartographic work, in order to strongly encourage adherence to IHO charting specifications. The role of the WG is purely consultative.
- b. The WG conducts its business mainly by correspondence. It will also plan to hold meetings at least once every two years, dependant on membership support and business needs. When meetings are scheduled, and in order to allow any WG submissions and reports to be submitted to HSSC on time, WG meetings should not normally occur later than nine weeks before a meeting of the HSSC.

- c. All members shall inform the Chairman in advance of their intention to attend meetings of the WG.
- d. Decisions shall generally be made by consensus. If votes are required on issues or to endorse proposals presented to the WG, votes shall be taken by a simple majority of the Member States present and voting. When dealing with inter-sessional matters by correspondence, a simple majority of responding WG members shall be required.
- e. The WG should identify a work programme for each year, including expected time frame for progressing tasks.
- f. The WG will maintain close liaison with other HSSC WGs, particularly DIPWG and TSMAD, and other international and IHO bodies, as appropriate and as instructed by HSSC.
- g. The WG will report progress to meetings of HSSC and to Member States through the HSSC report in the Annual Report of the IHB

4. Composition and Chairmanship

- a. Membership of the CSPCWG is open to all Member States wishing to be represented. Normally there should be not more than one representative from each Member State.
- b. Accredited Non-Governmental International Organizations observers may participate in CSPCWG activities.
- c. The Chair and Vice-Chair shall be a representative of a Member State. The election of the Chair and Vice-Chair shall be decided at the first meeting after each ordinary session of the Conference (Conference to be replaced by Assembly when the revised IHO Convention enters force) and shall be determined by vote of the Member States present and voting.
- d. If the Chair is unable to carry out the duties of the office, the Vice-Chair shall act as the Chair with the same powers and duties.
- e. The Chairman and Vice-Chairman will decide between themselves the organization of the work entailed in these posts.
- f. The Chairman will monitor membership to ensure that each regional hydrographic commission is invited to be represented on the WG.
- g. A Secretary will be appointed, normally from within the organization of the Chairman of the WG, to ensure the smooth running of business, and to administer consultation and collation of members' views. The Secretary is a member of the WG.

5. Guiding principles

- a. S-4 Part B provides an internationally-agreed product specification for both national and international (INT) charts at medium- and large-scale. The role of S-4 Part B is twofold, in that it provides:
 - i. an explanation of the general concepts and rationale behind the portrayal of features on charts, much of which is relevant to both electronic and paper charts.
 - ii. specific guidance for paper charts, including their content and the use of text and symbology.

VII. DATA QUALITY W.G. (DQWG)

Ref: 1st HSSC Meeting (Singapore, October 2009)

1. Objective

To develop appropriate methods of classifying and depicting the quality of digital hydrographic data.

2. Authority

This WG is a subsidiary of the Hydrographic Services and Standards Committee (HSSC). Its work is subject to HSSC approval.

3. Procedures

- a) The WG should:
 - i. Review ISO 19113 *Geographic Information-Quality Principles*, ISO 19114 *Geographic Information-Quality Evaluation Procedures*, and ISO 19115 *Geographic Information - Metadata* and propose relevant enhancements and amendments for incorporation in S-100;
 - ii. Monitor and further develop quality indicators for hydrographic data;
 - iii. Review and revise as needed existing S-57 quality indicators, including the education of both the mariner and the cartographer, and the development of documentation;
 - iv. Review and revise as needed the presentation of data quality, as provided in S-52 and its Presentation Library;
 - v. Investigate ways of ensuring that ECDIS displays provide a clear warning or indication to the mariner on the quality of the underlying survey data, through appropriate use of the attribute CATZOC and/or improvement of the existing display capabilities, and;
 - vi. Propose new data quality topics and other applications for consideration by HSSC.
- b) The WG should work by correspondence, group meetings, workshops or symposia. Permanent or temporary sub-working groups may be created by the WG to undertake detailed work on specific topics such as: quality indicators for hydrographic data, tidal information, etc. The WG should meet as necessary. When meetings are scheduled, and in order to allow any WG submissions and reports to be submitted to HSSC on time, WG meetings should not normally occur later than nine weeks before a meeting of the HSSC.
- c) The WG should liaise with other relevant HSSC WG's and other IHO bodies, such as S-44 WG, and international bodies as appropriate and as instructed by HSSC.

4. Composition and Chairmanship

- a) The WG shall comprise representatives of IHO Member States (M/S), Expert Contributors and Accredited NGO Observers.
- b) Decisions should generally be made by consensus. If votes are required on issues or to endorse proposals presented to the WG, only M/S may cast a vote. Votes shall be on the basis of one vote per M/S represented.
- c) Expert Contributor membership is open to entities and organisations that can provide a relevant and constructive contribution to the work of the WG.
- d) The Chair and Vice-Chair shall be a representative of a Member State. The election of the Chair and Vice-Chair shall be decided at the first meeting after each ordinary session of the Conference (Conference to be replaced by Assembly when the revised IHO Convention enters force) and shall be determined by vote of the Member States present and voting.
- e) If the Chair is unable to carry out the duties of the office, the Vice-Chair shall act as the Chair with the same powers and duties.
- f) Expert Contributors shall seek approval of membership from the Chairman.

- g) Expert Contributor membership may be withdrawn in the event that a majority of the M/S represented in the WG agree that an Expert Contributor's continued participation is irrelevant or unconstructive to the work of the WG.
- h) All members shall inform the Chairman in advance of their intention to attend meetings of the WG.
- i) In the event that a large number of Expert Contributor members seek to attend a meeting, the Chairman may restrict attendance by inviting Expert Contributors to act through one or more collective representatives.

VIII. MARINE SPATIAL DATA INFRASTRUCTURES W.G. (MSDIWG) –
Ref: 1st HSSC Meeting (Singapore, October 2009)

1. Objective

Support the SDI activities of the IHO.

2. Authority

This Working Group (WG) is a subsidiary of the Hydrographic Services and Standards Committee (HSSC). Its work is subject to HSSC approval.

3. Procedures

The WG should:

- a) Monitor national and international SDI activities and present information on those activities to HSSC members by correspondence and at the annual meeting.
- b) Promote the use of IHO standards and member state marine data in SDI activities.
- c) Liaise, as appropriate, with other relevant technical bodies such as the IOC, and the World Data Centres for Oceanography, Bathymetry and Marine Geophysics, to increase the visibility of marine spatial data.
- d) Propose any Technical and/or Administrative Resolutions that may be required to reflect IHO involvement in the support of SDI.
- e) Identify actions and procedures that the IHO might take to contribute to the development of Spatial Data Infrastructure (SDI) and / or MSDI in support of Member States.
- f) Determine any actions that the IHO and individual M/S might take to forge links with other bodies (e.g. OGC, ISO TC211, IOC) to ensure M/S are best placed to meet the developing challenges associated with data management and governance.
- g) Identify and recommend possible solutions to any significant technical issues related to interoperability between maritime and land based inputs to SDI, and in particular:
 - 1) Datum issues.
 - 2) S-100 interoperability with SDI.
 - 3) S-100 interoperability with oceanographic, marine biological, geological and geophysical data structures.
- h) Identify any IHO capacity building requirements.
- i) The WG should work by correspondence, and use group meetings, workshops or symposia only if required. When meetings are scheduled, and in order to allow any WG submissions and reports to be submitted to HSSC on time, WG meetings should not normally occur later than nine weeks before a meeting of the HSSC.
- j) Submit a report annually to HSSC.

4. Composition and Chairmanship

- a) The WG shall comprise representatives of Member States, Expert Contributors and Accredited NGIO Observers, all of whom have expressed their willingness to participate.
- b) Member States, Expert Contributors and Accredited NGIO Observers may indicate their willingness to participate at any time. A membership list shall be maintained and confirmed annually.
- c) Expert Contributor membership is open to entities and organisations that can provide a relevant and constructive contribution to the work of the WG.

- d) The Chair and Vice-Chair shall be a representative of a Member State. The election of the Chair and Vice-Chair should normally be decided at the first meeting after each ordinary session of the Conference (Conference to be replaced by Assembly when the revised IHO Convention enters force) and, in such case, shall be determined by vote of the Member States present and voting.
- e) Decisions should generally be made by consensus. If votes are required on issues or to endorse proposals presented to the WG, only M/S may cast a vote. Votes shall be on the basis of one vote per M/S represented. In the event that votes are required between meetings or in the absence of meetings, including for elections of the Chair and Vice Chair, this shall be achieved through a postal ballot of those M/S on the current membership list.
- f) If a secretary is required it should normally be drawn from a member of the WG.
- g) If the Chair is unable to carry out the duties of the office, the Vice-Chair shall act as the Chair with the same powers and duties.
- h) Expert Contributors shall seek approval of membership from the Chairman.
- i) Expert Contributor membership may be withdrawn in the event that a majority of the M/S represented in the WG agrees that an Expert Contributor's continued participation is irrelevant or unconstructive to the work of the WG.
- j) All members shall inform the Chairman in advance of their intention to attend any meetings of the WG.
- k) In the event that a large number of Expert Contributor members seek to attend a meeting, the Chairman may restrict attendance by inviting Expert Contributors to act through one or more collective representatives.

IX. TIDAL AND WATER LEVEL W.G. (TWLWG) –

Ref: 1st HSSC Meeting (Singapore, October 2009)

1. Objective

To provide technical advice and coordination on tidal, water level and vertical datum matters.

2. Authority

The Working Group (WG) is a subsidiary of the Hydrographic Services and Standards Committee (HSSC) and its work is subject to HSSC approval.

3. Procedures

a. The WG should:

- (i) monitor and develop the use of tidal and water level information;
- (ii) advise on the use of vertical datums;
- (iii) advise on tidal and water level observation, analysis and prediction;
- (iv) advise on matters concerning the exchange, distribution and use of tidal and water level related data;
- (v) propose relevant amendments and improvements to IHO Technical Resolutions (M-3) relating to tidal, water level and vertical datums;
- (vi) propose new tidal, water level and vertical datum topics and other applications for consideration by HSSC; and
- (vii) study principles and methods for conveying tidal and water level information to mariners.

b. The WG should work primarily by correspondence.

c. The WG should attempt to meet annually, normally in connection with another convenient IHO forum. When meetings are scheduled, and in order to allow any WG submissions and reports to be submitted to HSSC on time, WG meetings should not normally occur later than nine weeks before a meeting of the HSSC.

d. The WG should liaise with other WG's; other IHO and international bodies as appropriate; and as instructed by HSSC.

4. Composition and Chairmanship

a. The WG shall comprise representatives of IHO Member States (MS), Expert Contributors and accredited NGIO Observers, all of whom have expressed their willingness to participate, and a representative of the IHB.

b. Member States, Expert Contributors and accredited NGIO Observers may indicate their willingness to participate at any time. A membership list shall be maintained and confirmed annually.

c. Expert Contributor membership is open to entities and organisations that can provide a relevant and constructive contribution to the work of the WG.

d. The Chair and Vice Chair shall be a representative of a Member State. The election of the Chair and Vice-Chair should normally be decided at the first meeting following each ordinary session of the Conference (Conference to be replaced by Assembly when the revised IHO Convention enters force) and, in such case, shall be determined by vote of the Member States present and voting.

e. Decisions should generally be made by consensus. If votes are required on issues or to endorse proposals presented to the WG, only MS may cast a vote. Votes shall be on the

basis of one vote per MS represented. In the event that votes are required between meetings or in the absence of meetings, including for elections of the Chair and Vice-Chair, this shall be achieved through a postal ballot of those MS on the current membership list.

- f. If a secretary is required it should normally be drawn from a member of the WG.
- g. If the Chair is unable to carry out the duties of the office, the Vice-Chair shall act as the Chair with the same powers and duties.
- h. Expert Contributors shall seek approval of membership from the Chair.
- i. Expert Contributor membership may be withdrawn in the event that a majority of the MS represented in the WG agree that an Expert Contributor's continued participation is irrelevant or unconstructive to the work of the WG.
- j. All members shall inform the Chair in advance of their intention to attend meetings of the WG.
- k. In the event that a large number of Expert Contributor members seek to attend a meeting, the Chair may restrict attendance by inviting Expert Contributors to act through one or more collective representatives.

X. HYDROGRAPHIC DICTIONARY W.G. (HDWG) –
Ref: 1st HSSC Meeting (Singapore, October 2009)

1. Objective

To systematically review and update the definitions in the IHO Hydrographic Dictionary in English, French and Spanish.

2. Authority

The HDWG is a subsidiary of the Hydrographic Services and Standards Committee (HSSC) and its work is subject to HSSC approval.

3. Procedures

- a. The HDWG should conduct its business mainly by correspondence. Meetings will be held, if necessary, at intervals of about 2-3 years. When meetings are scheduled, and in order to allow any WG submissions and reports to be submitted to HSSC on time, WG meetings should not normally occur later than nine weeks before a meeting of the HSSC.
- b. The HDWG may establish individual language sub-groups as necessary. These sub-groups should work by correspondence only and their work will be coordinated by a leader appointed by the HDWG.
- c. The HDWG should liaise with other IHO bodies developing publications containing glossaries to ensure consistency.
- d. The WG should liaise as appropriate with other organisations developing dictionaries and/or glossaries.
- e. The WG should develop a work programme for each year that includes target completion dates where appropriate.

4. Composition and Chairmanship

- a. Membership of the HDWG is open to all Member States wishing to participate. The International Hydrographic Bureau (IHB) (“the International Hydrographic Bureau (IHB)” to be replaced by “the IHO Secretariat” when the Secretariat is established) will maintain a list of nominated members,
- b. The HDWG may invite expert contributors to participate in its deliberations during and between meetings. Accredited Non-Governmental International Organizations (NGIO) may also participate as observers in the work and meetings of the HDWG.
- c. Expert Contributor membership is open to entities and organisations that can provide a relevant and constructive contribution to the work of the WG.
- d. The Chair and Vice-Chair shall be a representative of a Member State. The election of the Chair and Vice-Chair should normally be decided at the first meeting following each ordinary session of the Conference (“Conference” to be replaced by “Assembly” when the revised IHO Convention enters force) and, in such case, shall be determined by vote of the Member States present and voting.
- e. Decisions should generally be made by consensus. If a vote is required only Member States may cast a vote. Votes shall be on the basis of one vote per Member State represented.
- f. If a secretary is required it should normally be drawn from a member of the HDWG.
- g. If the Chair is unable to carry out the duties of the office, the Vice-Chair shall act as the Chair with the same powers and duties.
- h. Expert Contributors shall seek approval of membership from the Chairman.
- i. Expert Contributor membership may be withdrawn in the event that a majority of the M/S represented in the WG agree that an Expert Contributor’s continued participation is irrelevant or unconstructive to the work of the WG.
- j. All members shall inform the Chairman in advance of their intention to attend meetings of the

WG.

k. In the event that a large number of Expert Contributor members seek to attend a meeting, the Chairman may restrict attendance by inviting Expert Contributors to act through one or more collective representatives.

XI. SURFACE CURRENT WORKING GROUP (SCWG)

Ref: 4th HSSC Meeting (Taunton, UK, September 2012)

1. Objective

To develop standards for the delivery and presentation of navigationally relevant current information.

2. Authority

The Working Group (WG) is a subsidiary of the Hydrographic Services and Standards Committee (HSSC) and its work is subject to HSSC approval.

3. Procedures

- a. The WG should:
 - (1) develop S-100 based product specifications, including content and display requirements with technical characteristics, for navigationally relevant currents;
 - (2) advise on matters concerning the exchange, distribution and use of navigationally relevant current data;
 - (3) liaise with relevant IHO WG's to ensure technical feasibility and compatibility of relevant developed proposals.
- b. The WG should work primarily by correspondence; may meet face to face if required in conjunction with another convenient IHO forum.
- c. The WG should liaise with other international bodies as appropriate.

4. Composition and Chairmanship

- a. The WG shall comprise of representatives of IHO Member States (MS), Expert Contributors and accredited NGIO Observers, all of whom have expressed their willingness to participate, and a representative of the IHB.
- b. Member States, Expert Contributors and accredited NGIO Observers may indicate their willingness to participate at any time. A membership list shall be maintained and confirmed annually.
- c. Expert Contributor membership is open to entities and organizations that can provide a relevant and constructive contribution to the work of the WG.
- d. The Chair and Vice Chair shall be a representative of a Member State. The election of the Chair and Vice-Chair should normally be decided at the first meeting following each ordinary session of the Conference (Conference to be replaced by Assembly when the revised IHO Convention enters force) and, in such case, shall be determined by vote of the Member States present and voting.
- e. Decisions should generally be made by consensus. If votes are required on issues or to endorse proposals presented to the WG, only MS may cast a vote. Votes shall be on the basis of one vote per MS represented. In the event that votes are required between meetings or in the absence of meetings, including for elections of the Chair and Vice-Chair, this shall be achieved through a postal ballot of those MS on the current membership list.
- f. If a secretary is required it should normally be drawn from a member of the WG.
- g. If the Chair is unable to carry out the duties of the office, the Vice-Chair shall act as the Chair with the same powers and duties.
- h. Expert Contributors shall seek approval of membership from the Chair.

- i. Expert Contributor membership may be withdrawn in the event that a majority of the MS represented in the WG agree that an Expert Contributor's continued participation is irrelevant or unconstructive to the work of the WG.
- j. All members shall inform the Chair in advance of their intention to attend meetings of the WG.
- k. In the event that a large number of Expert Contributor members seek to attend a meeting, the Chair may restrict attendance by inviting Expert Contributors to act through one or more collective representatives.

XII. ADVISORY BOARD ON THE LAW OF THE SEA (ABLOS) –

Note: ABLOS is a joint board established by the IHO and the International Association of Geodesy (IAG)

Ref: 1st HSSC Meeting (Singapore, October 2009)

OBJECTIVE:

To provide advice on technical aspects of the Law of the Sea.

1. Terms of Reference

- 1.1. To provide advice, guidance and, where applicable, offer expert interpretation of the technical aspects of the Law of the Sea to the parent Organizations, their Member States or to other organizations on request.
- 1.2. To review State practice and jurisprudence on Law of the Sea matters which are relevant to the work of ABLOS so as to be in a position to provide expert advice when needed.
- 1.3. To study, promote and encourage the development of appropriate techniques in the application of the technical provisions contained within the UN Convention on the Law of the Sea.
- 1.4. To review and update IHO Special Publication C-51 "A Manual on Technical Aspects of the United Nations' Convention on the Law of the Sea - 1982" (TALOS Manual).
- 1.5. To prepare, review and update other ABLOS publications as required by the parent organizations.

2. Rules of Procedure

- 2.1. ABLOS shall be composed of eight full members, preferably chosen with wide geographic representation. Each parent Organization shall appoint four members. The Division for Ocean Affairs and the Law of the Sea of the UN Office of Legal Affairs (DOALOS), and the International Hydrographic Bureau (IHB) (*"the International Hydrographic Bureau (IHB)"* to be replaced by *"the IHO Secretariat"* when the Secretariat is established) shall have representatives in an ex-officio capacity without voting rights.
- 2.2. ABLOS should normally take decisions by consensus. Should a vote be necessary then a simple majority of those present and voting is required, subject to a minimum of 4 voting members being present. In the case of a tied vote the Chairman shall have a casting vote.
- 2.3. The Member States of the IHO, the IAG and ABLOS through its Chairman may nominate additional observers to ABLOS. Observers may participate in correspondence and attend meetings but may not vote.
- 2.4. The term of office of a full member is four years, after which he/she may be re-appointed or replaced by his/her parent organization. Members are expected to attend every meeting of ABLOS. Where a member fails to attend two consecutive meetings the Chairman should raise the matter with the Parent Organization with a view to rectifying the situation.
- 2.5. Whilst members of ABLOS are appointed by their parent Organizations, to whom they are accountable, members are expected to serve as individual experts in their own right. No statements or publications may be issued in the name of ABLOS without ABLOS's prior approval.
- 2.6. The Chairman and Vice-Chairman shall be elected by ABLOS and should normally come from different parent Organizations on a rotational basis. They will serve for a two-year period, after which the Vice-Chairman becomes Chairman and a new Vice-Chairman is elected. If the Chairman is not present or available, the Vice-Chairman shall act in this capacity until the next meeting. Should the Vice-Chairman not be available to take office as Chairman when required, a new Chairman and Vice-Chairman should be elected.

- 2.7. ABLOS may establish Working Groups to carry out specific tasks.
- 2.8. ABLOS will have its permanent Secretariat at the IHB (*“the IHB”* to be replaced by *“the IHO Secretariat”* when the Secretariat is established), Monaco. The Secretariat will publish the documents and publications produced by the Board as required.
- 2.9. Members of ABLOS are expected to be supported by their own organizations for travel expenses and work.
- 2.10. ABLOS will normally meet once a year at a venue and time that minimizes cost and conduct business by correspondence between meetings.
- 2.11. ABLOS may organise conferences and seminars. A biennial technical conference will normally be held in Monaco in conjunction with an ABLOS Meeting. ABLOS may operate a fund to cover the receipts and expenses of running such a conference. Guidelines for the operation of this fund are appended to these terms of reference.
- 2.12. The Chair shall report on the activities of the Board to the annual meeting of the IHO Hydrographic Services and Standards Committee (HSSC) and to each ordinary session of the International Hydrographic Conference (*“each ordinary session of the International Hydrographic Conference”* to be replaced by *“each ordinary session of the Assembly through the Council”* when the Council and Assembly are established). The Chairman shall also provide an annual report on ABLOS’s activities to the IAG and a report covering the inter-sessional period to the General Assembly of the IAG.
- 2.13. These TOR should be reviewed by ABLOS as required and not less frequently than every 4 years. Amendments, recommended by ABLOS, are to be submitted to the parent Organizations for approval.

ABLOS CONFERENCE FUND GUIDELINES

(As amended 15 October 2008)

1. Introduction

1.1 The Advisory Board on the Law of the Sea (ABLOS) is formed by four representatives from each of the following bodies: The International Hydrographic Organization (IHO) and the International Association of Geodesy (IAG). Secretarial support for ABLOS is provided by the International Hydrographic Bureau (IHB) (“*the International Hydrographic Bureau (IHB)*” to be replaced by “*the IHO Secretariat*” when the Secretariat is established). The parent organizations approve the Terms of Reference (TOR) for ABLOS. The UN Division of Ocean Affairs and Law of the Sea (DOALOS) and the IHB (“*the IHB*” to be replaced by “*the IHO Secretariat*” when the Secretariat is established) attend ABLOS meetings in an ex-Officio capacity.

2. Biennial Conference

2.1 The TOR invite ABLOS to organise seminars and technical conferences and permit the operation of a fund to support such activities.

3. Income

3.1 The primary source of income for the fund will be from the registration fees of delegates attending such seminars / conferences. ABLOS should set the level of registrations fees in order to provide a modest excess of income over expenditure given an estimated attendance.

4. Expenditure

4.1 The primary expenditure for the fund will be to cover the costs of running the seminars / conferences. Expenditure may include but is not limited to: assistance to speakers / tutorial leaders, conference equipment, documentation, proceedings, staff overtime, reception and tea breaks.

4.2 ABLOS may use any funds in excess of 3000 Euros remaining after all expenses for a seminar / conference have been settled, to fund other activities conducted by ABLOS. Support for travel / subsistence in connection with production of a new edition of C-51 ‘A Manual on Technical Aspects of the Law of the Sea’ might be considered such an activity. Such expenditure must be approved by a simple majority of the ABLOS Membership.

4.3 Routine expenditure in support of a seminar / conference may be transacted by the IHB (“*the IHB*” to be replaced by “*the IHO Secretariat*” when the Secretariat is established) and reported in the fund accounts.

5. Operation

5.1 The fund will be operated by the IHB (“*the IHB*” to be replaced by “*the IHO Secretariat*” when the Secretariat is established) on behalf of ABLOS. A copy of the fund accounts will be provided to the Annual Business Meeting of ABLOS and immediately after finalising the accounts following a seminar / conference.

6. Review

6.1 This guidance should be reviewed, and amended as necessary, by ABLOS at intervals not exceeding 4 years.