6TH MEETING OF THE HYDROGRAPHIC SERVICES AND STANDARDS COMMITTEE
Hotel Marina Del Rey, Viña del Mar, Chile, 11-14 November 2014

Paper for Consideration by HSSC

Report of the Correspondence Group on HSSC Working Groups' Restructuring (CGHR)

Submitted by:	Chair, CGHR
Executive Summary:	This paper reports on the outcome of the Correspondence Group on HSSC Working Groups' Restructuring established by HSSC-5 (action HSSC5/08).
Related Documents:	Final minutes of HSSC-5 (paragraph 4.2); Terms of Reference and Rules of Procedure of HSSC; IHO CL 39/2014 dated 21 May – *Re-structuring of the working groups of the HSSC*.
Related Projects:	HSSC Work Plan.

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Background

1. At its 5th meeting, the Hydrographic Services and Standards Committee (HSSC) discussed the re-structuring of its working groups to acknowledge the changing focus from paper-based to digital products and services and to best use limited resources. The Committee approved in principle a new structure composed of working groups and project teams and decided the establishment of a correspondence group (CG), composed of the Chairs of HSSC, TSMAD, DIPWG, CSPCWG, SNPWG, TWLWG, SCWG and an IHB representative, to develop draft terms of reference and rules of procedure, and to consider the composition of the new bodies as well as appropriate and timely transition arrangements. The Committee tasked the CG to report to its next meeting (HSSC-6) and agreed that the CG be open to representatives of Member States.

Terms of Reference

2. The terms of reference of the CG were defined by action HSSC5/08:

   HSSC Chair and Secretary to establish a correspondence group composed of the Chairs of HSSC, TSMAD, DIPWG, CSPCWG, SNPWG, TWLWG, SCWG and an IHB representative, to develop draft terms of reference and rules of procedure for the proposed new HSSC bodies, and consider their composition as well as the appropriate timely transition arrangements.

Membership and Work Method

3. HSSC had decided that the CG would be chaired by the Chair of HSSC and composed of the Chairs of the working groups affected by the restructuring, namely TSMAD, DIPWG, CSPCWG, SNPWG, TWLWG, and SCWG, and an IHB representative.

4. HSSC had agreed that the CG be open to representative of Member States (MS). In accordance with action HSSC5/09, IHO Circular Letter (CL) 08/2014 dated 20 January 2014 invited MS wishing to participate in the CG to indicate the name and contact information of their representative. Six MS (Brazil, Finland, Sweden, Turkey, United Kingdom, and United States) nominated a representative.

5. The membership of the CG is indicated in Annex A.

6. The work was initiated as soon as the minutes of HSSC-5 were approved. In parallel to the call for participation sent to Member States, the Chair of the CGHR and the IHB prepared a draft work plan for the CG and draft terms of reference and rules of procedure (TOR) for the new proposed bodies. The CG was activated on 21 February 2014.

7. The work was conducted by exchange of e-mails with a provision for one face-to-face meeting near the end of the timeline, as a side-meeting during the week of the 5th Extraordinary International Hydrographic Conference (EIHC-5). The use of this provision has not been required.

Work Plan

8. The work plan agreed by the CG is attached in Annex B. It was implemented in four steps:
   a. development of draft terms of reference and rules of procedure for the proposed new HSSC bodies;
   b. development of draft work plans for the proposed new HSSC bodies;
   c. consultation of the IHO Member States on their contribution in terms of resources to the proposed new HSSC bodies;

d. preparation of the CGHR report, including the consideration of the composition of the proposed new HSSC bodies and of the transition arrangements from the current HSSC structure to the proposed new structure.

9. The work plan of the CGHR was elaborated and implemented on the basis that the CGHR was tasked to implement the principles agreed by HSSC-5 rather than to discuss these principles. Some CG members expressed their dissatisfaction about this approach, considering that the discussions at HSSC-5 had not been sufficiently thorough. The Chair noted that re-opening the discussion of the principles would require reconsidering the composition of the CGHR as some Member States not represented in the CG might have chosen to participate if the mandate had been different.

10. In order to provide a common reference to the members of the CGHR, a paper describing the rationale and objectives of the restructuring, reflecting the discussion and outcome of HSSC-5, was produced by the Chair of HSSC, Chair of the CG. This paper is attached at Annex C.

11. The draft TOR were derived from the current TOR of TSMAD, DIWPG, SNPWG, CSPCWG, TWLWG and SCWG. The draft clauses for section 4 - Composition and Chairmanship - were taken from the current TOR of TSMAD with only some editorial amendments aiming at improving internal consistency and harmonization with variants in the TOR of other HSSC WG.

12. The draft work plans were based on the current framework of the HSSC work plan and on the proposed assignment of IHO Publications under the responsibility of HSSC bodies provided at Annex D.

Outcomes, Analysis and Discussion

Consideration of the new structure by the Correspondence Group

13. Figure 1 shows the structure which was agreed in principle by HSSC at its 5th meeting.

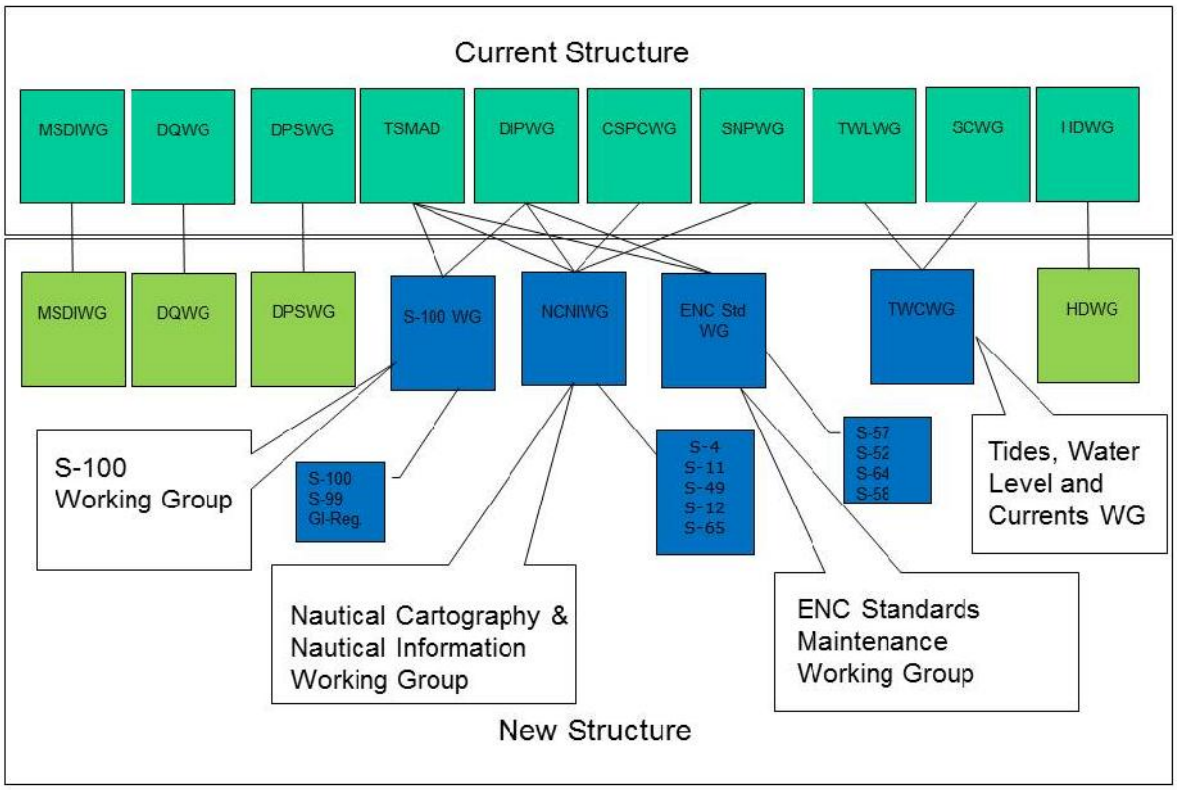


Figure 1
Structure agreed in principle at HSSC-5

14. The development of the draft TOR for the new working groups resulted in minor adjustments of the name and scope of the new working groups as shown in Figure 2.

15. In particular, a majority of the CG members were in favour of adopting acronyms that are as easy to remember and pronounce as possible. The names of the proposed new working groups adopted in this report are as follows:

    - S-100 Working Group (S-100WG);
    - Nautical Information and Cartography Working Group (NICWG), changed in the final proposal to Nautical Information Provision Working Group (NIPWG). This change reflects that the focus of the new group is all about provision of information, regardless of whether it is graphical or textual, paper or digital;
    - ENC Standards Maintenance Working Group (ENCWG);
    - Tides, Water Level and Currents Working Group (TWCWG).

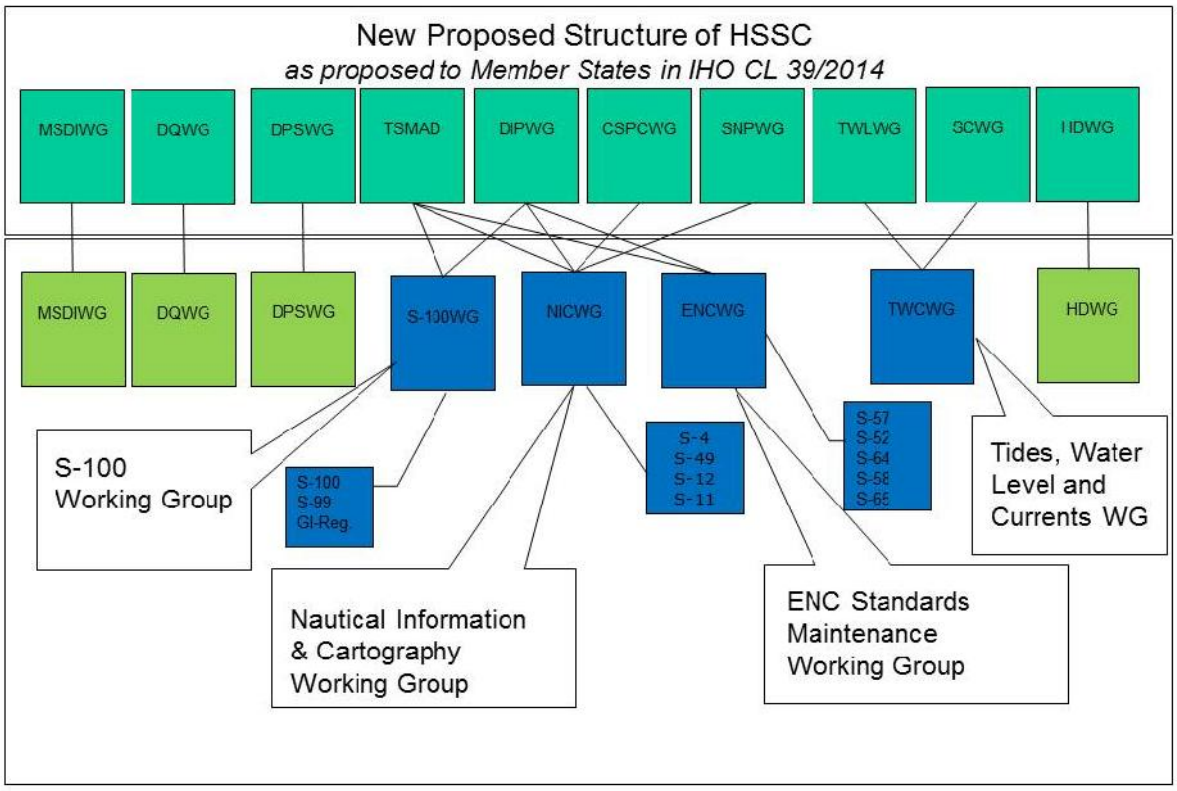


Figure 2
Adjusted structure

16. There was a wide consensus within the CGHR to establish the S-100WG, ENCWG and TWCWG in accordance with the draft TOR developed by the group.

17. Several members of the CG expressed concerns about the purpose, adequacy, feasibility and benefits of some aspects of the merger of the CSPCWG and the SNPWG into the NICWG. Views were expressed that the size and potential scope of work of the NICWG would not be manageable and that the maintenance of the IHO Chart Specifications would still require a dedicated working group for the foreseeable future. Therefore some CG members considered that discussing the TOR and work plan of the NICWG and the allocation of relevant resources was premature at this stage.

18. There was significant support within the CG in favour of a structure of working groups which oversees time-limited sub-working groups or project teams for life cycle maintenance of existing standards and standardised products and the development of new standards and standardised products. It was noted in particular that such a structure:

    - reflects current practice of some of the working groups (e.g. the development of the portrayal part of S-101);
    - attracts industry participation for the defined runtime of a project of special interest to them;
    - facilitates justifying the participation of experts from HOs, industry and academia which are not nominal members of the particular working group.

19. However, some concern was raised about the concept of "project teams" working on time limited actions, whereas some CG members were of the view that permanent WGs would be more effective and would be also easier to justify to their managers with regard to resources allocation.

20. The following generic clause is proposed to regulate the establishment of project teams:

"*Sub-working groups and project teams may be created by the WG or proposed to HSSC to undertake detailed work on specific topics. The terms of reference and rules of procedure of the sub-working groups and project teams are determined or proposed by the WG as appropriate.*"

This clause is meant to provide flexibility and cover cases when a sub-working group or project team is established within a WG to address a current work item (the decision is taken by the WG) and cases when this is part of a proposal to address a new work item or to establish a project team related to more than one WG (the decision is taken by the HSSC).

21. One CG member argued that the new structure could be considered if the proposed new NICWG would be established as a Steering Group (Nautical Information and Cartography Steering Group). This idea was however not supported by some other CG members considering that the HSSC is already *de facto* a steering committee[1]. It was also noted that this would require amending IHO Resolution 11/1962 on the formation of IHO subsidiary organs and subordinate bodies. Finally, one CG member strongly recommended that the S-100WG should be the custodian of IHO Publication S-63 - *IHO Data Protection Scheme*.

Consideration of the new structure by Member States and Stakeholders

22. In accordance with action HSSC5/10 referred to in IHO CL 08/2014, the IHB requested Member States and HSSC Stakeholders to define their contribution in terms of resources to the proposed new HSSC bodies. The request was issued as IHO CL 39/2014 dated 21 May 2014. Member States and HSSC Stakeholders were invited to indicate what would be their level of participation in HSSC and its subsidiary organs on the basis of the following documents:

    a. Restructuring of the HSSC Working Groups - Rationale and objectives (Annex C refers),

    b. Draft Terms of Reference and Rules of Procedure for the proposed new HSSC bodies,

    c. Draft Work Plans of the proposed new HSSC bodies - 2015-2016,

    d. Consolidated HSSC Work Plan 2014-2015 - Extract (January 2014),

    e. Proposed assignment of IHO Publications under the responsibility of HSSC bodies (Annex D refers).

23. The current list of HSSC contacts includes 34 IHO Member States and 22 observer organizations. Only 22 Member States (Australia, Belgium, Brazil, Canada, Croatia, Cyprus, Denmark, Finland, France, Germany, Greece, India, Japan, Korea (Republic of), Netherlands, Norway, Singapore, South Africa, Spain, Sweden, UK and USA) and one observer (Primar) responded to IHO CL 39/2014.

24. The compilation of the responses to IHO CL 39/2014 is given in Annexes E to G. Annex E shows the support which could be expected for HSSC and its working groups in the new

[1] In this respect, it should be noted that the current HSSC TOR include a provision to establish, "*if required, a coordinating Sub-committee on Data Acquisition & Transfer Standards and a "coordinating Sub-committee on Symbology & Data Presentation Standards*" in order to "*coordinate the work of those working groups dealing with data and presentation standards respectively*". To this day, it has not been considered necessary to implement this provision.

structure. Annex F lists the comments on the draft work plans. Annex G lists all the other comments. The main outcomes of the responses are summarized in the following paragraphs.

25. All but two of the Member States who responded to the survey indicate their intention to play an active role in the development of the IHO services and standards. They are: Australia, Belgium, Brazil, Canada, Denmark, Finland, France, Germany, Greece, India, Japan, Korea (Republic of), Netherlands, Norway, Singapore, South Africa, Spain, Sweden, UK and USA. All are already active in HSSC, except Belgium.

26. Croatia and Cyprus, who do not currently participate in HSSC activities, confirm that they are not in a position to play an active role in HSSC and its WGs.

27. In the light of the compilation in Annex E, further noting that the average number of Member States represented in HSSC meetings since HSSC-1 is around 24, and subject to the assumption that a number of Member States active in HSSC who did not respond to the survey will continue to participate, it is likely that the level of support of the Committee and its activities will remain at its current level. There is no indication that the new structure would have a significant overall effect one way or the other. However, there seems to be a decreasing support for the DQWG and the DPSWG. The support of the HDWG and the DPSWG remains at a critically low level.

28. In the absence of responses from all but one observer, it is assumed that the observers do not have any strong view in favour of or against the new structure. Primar confirms its willingness to continue providing support in its areas of expertise (HSSC, DPSWG, S-100WG, ENCWG).

29. Four Member States (Australia, Finland, Spain, UK) do not support the establishment of the NICWG, in line with the concerns outlined in paragraph 17 above. Only Australia and UK provide comments on the associated draft work plan: Australia challenges the relevance of continuing tasks which are not future focussed and UK considers that some tasks will require additional resources which will negate any saving from the formation of the NICWG. Conversely, Japan, Netherlands, Sweden express their support of the principles of the new structure.

30. There are indication of interests for all Chair and Vice-Chair positions except for the positions of Vice-Chair of S-100WG and HDWG. There is no volunteer for the position of Secretary of the WGs. In the current structure, the position is vacant for the SNPWG and filled as follows for the other WGs:

    - by an IHB Assistant Director: TSMAD, DIPWG, TWLWG, HDWG, SCWG, ABLOS;
    - by a MS representative: CSPCWG;
    - by an expert contributor: DPSWG, DQWG, MSDIWG.

31. UK suggests that if the new structure is approved then the DQWG should be considered as a project below the NICWG. Australia recommends migrating the Hydrographic Dictionary into a register of the S-100 GI Registry.

Impact of other developments

32. The Inter-Regional Coordinating Committee (IRCC) considered the status and perspective of the developments related to Marine Spatial Data Infrastructure (MSDI) at its 6th meeting in June (IRCC-6). Noting the increasing inter-regional dimension of these developments, the IRCC decided to propose moving the subordination of the MSDIWG from HSSC to IRCC. The CGHR notes that the standardization activities associated with MSDI should fall within the scope of the S-100WG and that the new project team framework would provide an adequate vehicle to address trans-committee tasks if the MSDIWG is subordinated to IRCC.

33. The implementation of the decision of HSSC-5 to prepare a new edition of IHO Publication S-66 - *Facts about electronic charts and carriage requirements* has led to the establishment of a project team subordinate to the HSSC. This outcome is compatible with the principles of the new HSSC structure.

Conclusions and Recommended Actions

Structure

34. Although there is some reluctance to accept merging the CSPCWG and the SNPWG into the NIPWG, this move seems sufficiently supported to be considered as a realistic medium-term objective. There is general consensus for the other elements of the new structure. On the basis of the inputs and comments provided by CGHR members and Member States, the following provisions are proposed for the consideration of the Committee:

    a. Confirm the establishment of the S-100WG and ENCWG to succeed the TSMAD and DIPWG;

    b. Confirm the merger of the TWLWG and SCWG into the TWCWG;

    c. Transform the SNPWG into the NIPWG with a focus on developing the general specifications of the services required to support e-navigation;

    d. Prolong the existence of the CSPCWG subject to the annual review of its existence by the HSSC with a focus on the future of chart products as a basic component of e-navigation.

35. In addition, and although outside the original scope of the restructuring, the Committee is invited to consider the future of the DQWG, DPSWG and HDWG, given the limited number of active MS participants that is expected (see Annex E). The following options, on which the Chairs of the WG have not been consulted, are suggested to that effect:

    a. Subsume the DQWG into the CSPCWG, noting that most of the current tasks of the DQWG are related to the presentation of data quality on chart products;

    b. Subordinate the DPSWG to the S-100WG as a project team, noting that most of the future tasks of the DPSWG are related to the development of S-100 and related product specifications;

    c. Subsume the maintenance of the Hydrographic Dictionary into the management of the S-100 GI Registry.

36. Besides maintaining all or some of the three WG as at present, some members of the CGHR have suggested alternatives such as allocating the responsibility of S-32 to the NIPWG at step 2 or subsuming the DQWG as a project under the S-100WG. The chairs of the WG and the members of the CGHR have been invited to consider submitting comment papers on the issues to the HSSC.

37. The proposed evolution and the additional options are summarized in Figure 3.

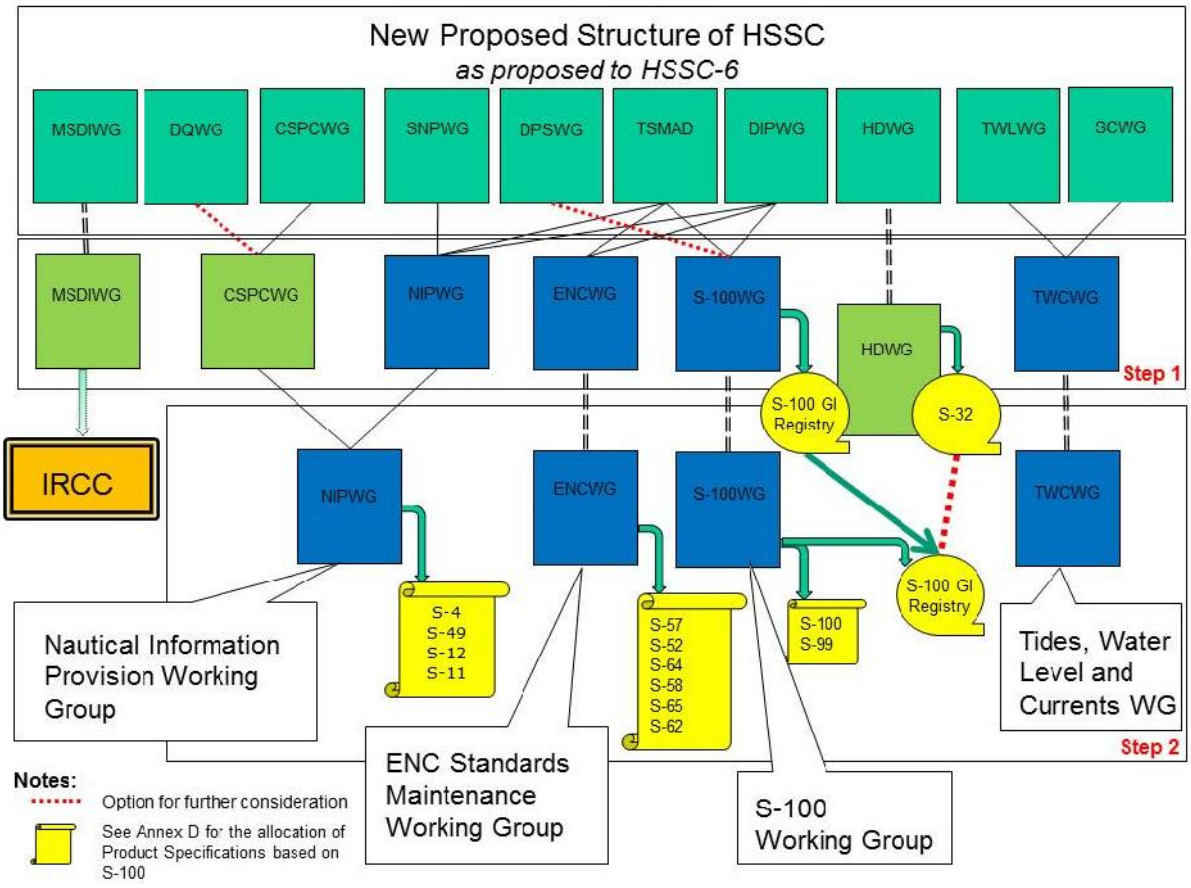


Figure 3
Structure proposed by the Correspondence Group

Terms of Reference and Rules of Procedure

38. The draft terms of reference and rules of procedure of the new WGs are attached in Annex H. They are aligned with the provisions proposed in paragraph 34. Although Australia and Japan made some adverse comments, it is proposed to retain the general layout and clauses of the current TOR in order to ensure consistency with the TOR of the WGs which are not affected by the new structure.

Work Plans

39. The draft work plans of the new WGs are attached in Annex I. In a similar way to the TOR, it is proposed to retain the general layout of the HSSC Work Plan, notwithstanding the comments from Australia and Japan.

40. There have been suggestions that the ENCWG should be responsible for S-101. Noting that the development of S-101 is closely connected to the maturation of S-100, it is considered more appropriate to assign S-101 to the S-100WG (either directly or through a dedicated project team - see task D.3 of the draft work plan). It is foreseen that S-101 would be moved to the ENCWG when approved and implemented as an operational standard.

Transition Arrangements

41. The transition arrangements proposed in table 1 take into account the tentative plans for the next meetings of the current WGs. They are meant to provide sufficient advance notice from the date of HSSC-6. It is proposed to designate a transition coordinator responsible for inviting

nomination for the office bearers and conducting the relevant elections. Transition arrangements for DPSWG, DQWG and HDWG are not included in table 1 as changes to these WG are options for further consideration by the HSSC (see paragraph 45).

New WG	Current WG	Last meeting Current WG	Transition Coordinator	First meeting New WG	Comments
S-100WG	TSMAD	(31 Mar - 4 Apr 2014)	Chair TSMAD	2-6 Feb 2015	Joint meeting aligned with planned dates for TSMAD29
	DIPWG				
ENCWG	TSMAD		Chair DIPWG		
	DIWPG				
TWCWG	TWLWG	(25-28 Mar 2014)	Chair TWLWG	21-24 Apr 2015	
	SCWG	(28-30 May 2014)			
NIPWG	SNPWG	1-4 Dec 2014	Chair SNPWG	Step 1: June 2015	
NIPWG	CSPCWG	~ 2016	Chair CSPCWG	Step 2: ~ 2017	Consider joint meeting or cross-participation with NIPWG during the transition
New WG	**Current WG**	**Last meeting Current WG**	**Transition Coordinator**	**First meeting New WG**	**Comments**

Table 1
Transition arrangements

Related Issues

42. Noting that many HOs are exposed to budgetary constraints which reduces significantly, if not suppress, their ability to contribute actively to IHO working groups, Croatia suggests to initiate a discussion on the possibility that IHO Member States who play a very active role in the IHO work programme and provide important in-kind contribution be compensated, for instance through the IHO CB Fund, or a reduction of the IHO membership fee. This issue is addressed in the Report on the Technical Capacity of the IHB submitted to the consideration of the 5th Extraordinary International Hydrographic Conference (EIHC-5).

Action Required of HSSC

43. The HSSC is invited to:
    a. **note** the report,
    b. **consider** and **adopt** the proposals in paragraph 34,
    c. **consider** and **decide** on the opportunity to investigate further the options in paragraph 35,
    d. **consider** and **adopt** the draft terms of reference of the new WGs in Annex H,
    e. **consider** and **adopt** the draft work plans of the new WGs in Annex I,
    f. **consider** and **adopt** the transition arrangements in paragraph 41,
    g. **take** any other action as appropriate.

Annex A - Membership

HSCC Correspondence Group on HSSC Working Groups Restructuring (CGHR)
List of Members
(as at 1 July 2014)

Chair Group		
Position	**Name (Affiliation)**	**Email**
Chair (HSSC Chair)	Mathias JONAS (GERMANY)	mathias.jonas@bsh.de
Secretary (HSSC Secretary)	Gilles BESSERO (IHB)	dtech@iho.int
Assistant Secretary (HSSC Assistant Secretary)	Yves GUILLAM (IHB)	adcs@iho.int
Member (TSMAD Chair)	Barrie GREENSLADE (UK)	barrie.greenslade@ukho.gov.uk
Member (DIPWG Chair)	Colby HARMON (USA)	colby.harmon@noaa.gov
Member (CSPCWG Chair)	Jeff WOOTTON (AUSTRALIA)	jeff.wootton@defence.gov.au
Member (SNPWG Chair)	Jens SCHRÖDER-FÜRSTENBERG (GERMANY)	jens.schroeder-fuerstenberg@bsh.de
Member (TWLWG Chair)	Gwenaële JAN (FRANCE)	gwenaele.jan@shom.fr
Member (SCWG Chair)	Kurt HESS (USA)	kurt.hess@noaa.gov
Member State Representatives		
Member State	**Name**	**Email**
Brazil	Nickolás de Andrade ROSCHER	nickolas.roscher@dhn.mar.mil.br hinar_m@yahoo.com
Finland	Juha KORHONEN	juha.korhonen@liikennevirasto.fi
Sweden	Ralf LINDGREN	ralf.lindgren@sjofartsverket.se
Turkey	Eşref GÜNSAY	egunsay@shodb.gov.tr info@shodb.gov.tr
United Kingdom	Edward HOSKEN	edward.hosken@ukho.gov.uk
United States	John NYBERG	john.nyberg@noaa.gov

Annex B - CGHR Work Plan 2014

CGHR: HSCC Correspondence Group on HSSC Working Groups Restructuring

CGHR Tasks

A	Develop draft terms of reference and rules of procedure for the proposed new HSSC bodies
B	Consider the composition of the proposed new HSSC bodies
C	Consider appropriate timely transition arrangements from the current HSSC structure to the proposed new structure
D	Manage the Correspondence Group and report to HSSC

Work item	Deliverable	Start Date	End Date	Responsible	Remarks
D.1	CGHR work plan V0.0	20 Jan 2014	7 Feb 2014	Gilles Bessero (GB)	Output: V0.0 circulated to Mathias Jonas (MJ), Michel Huet (MH), Tony Pharaoh (TP), Alberto Neves (AN) and David Wyatt (DW) for comments
D.2	CGHR work plan V0	10 Feb 2014	21 Feb 2014	GB	Consolidation of the comments on V0.0 Output: V0 issued to CGHR members for comments
D.3	CGHR work plan V1	24 Feb 2014	21 Mar 2014	GB	Consolidation of the comments on V0 in consultation with MJ, MH, TP, AN and DW Output: V1 issued to CGHR members for reference
D.4	CGHR list of members	20 Jan 2014	21 Feb 2014	GB	Consolidation of the responses of MS to IHO CL 08/2014, paragraph 5 Output: List issued to CGHR members for reference
A.1	Draft terms of reference and rules of procedure V0.0	20 Jan 2014	7 Feb 2014	GB	Output: V0.0 circulated to MJ, MH, TP, AN and DW for comments
A.2	Draft terms of reference and rules of procedure V0	10 Feb 2014	21 Feb 2014	GB	Consolidation of the comments on V0.0 Output: V0 issued to CGHR members for comments
A.3	Draft terms of reference and rules of procedure V1	24 Feb 2014	21 Mar 2014	GB	Consolidation of the comments on V0 in consultation with MJ, MH, TP, AN and DW Output: V1 issued to CGHR members for approval
A.4	Draft terms of reference and rules of procedure V2	24 Mar 2014	11 Apr 2014	GB	Consolidation of the comments on V1 in consultation with MJ, MH, TP, AN and DW Output: V2 issued to CGHR members for reference

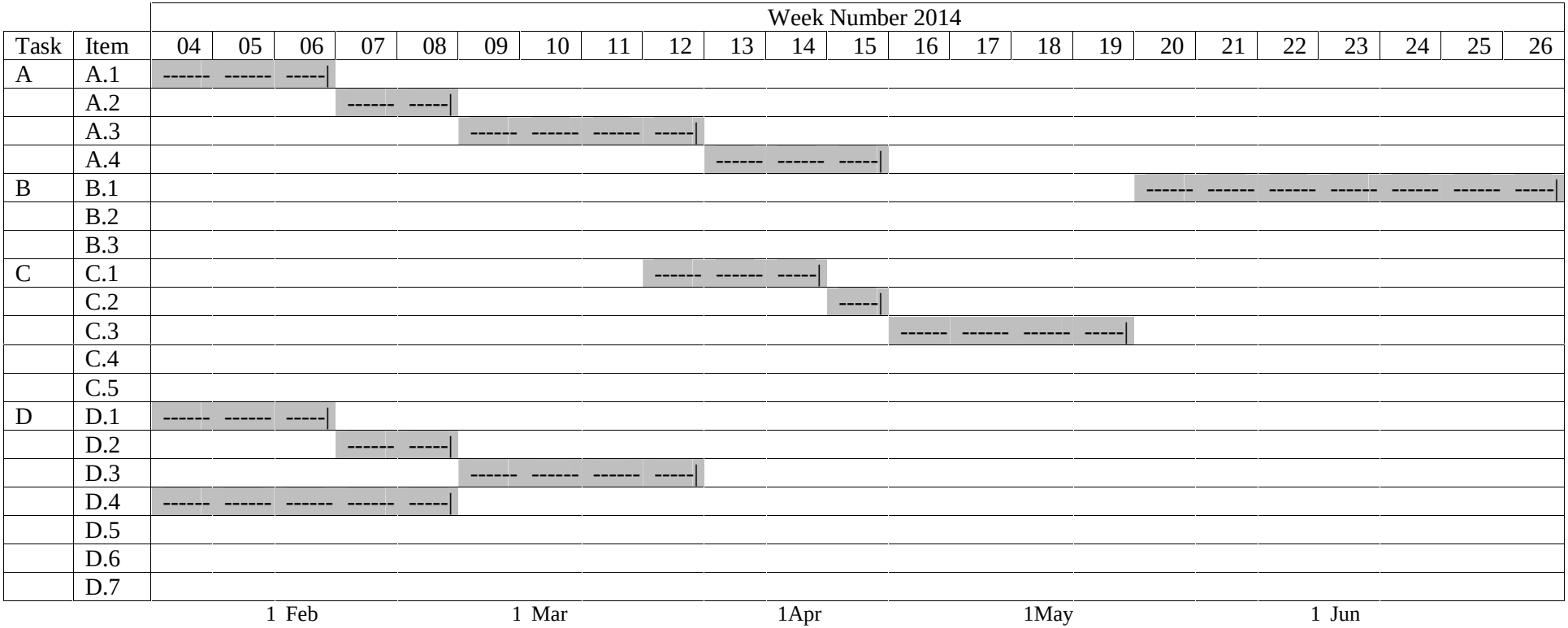
Work item	Deliverable	Start Date	End Date	Responsible	Remarks
C.1	Draft work plans V0.0	17 Mar 2014	4 Apr 2014	Michel Huet (MH)	Draft redistribution of the HSSC 2014-2015 Work Plan Output: V0.0 circulated to MJ, GB, TP, AN and DW for comments
C.2	Draft work plans V0	7 Apr 2014	11 Apr 2014	MH	Consolidation of the comments on V0.0 Output: V0 issued to CGHR members for comments
C.3	Draft work plans V1	14 Apr 2014	9 May 2014	MH	Consolidation of the comments on V0 in consultation with MJ, GB, TP, AN and DW Output: V1 circulated to CGHR members for reference
B.1	Request Member States and Stakeholders to define their contribution in terms of resources to the proposed new HSSC bodies.	12 May 2014	27 Jun 2014	GB	MS and Stakeholders invited to consider the draft terms of reference and rules of procedure V2 and the draft work plans V1
B.2	Draft composition V0	30 Jun 2014	22 Aug 2014	GB	Consolidation of the outcome of B.1 in consultation with MJ, Yves Guillam (YG), TP, AN and DW Loose timing to account for summer break Output: V0 circulated to CGHR members for comments
C.4	Draft transition arrangements V0	30 Jun 2014	22 Aug 2014	GB	Consolidation of the outcome of B.1 in consultation with MJ, YG, TP, AN and DW Loose timing to account for summer break Output: V0 circulated to CGHR members for comments
B.3	Draft composition V1	25 Aug 2014	12 Sep 2014	GB	Consolidation of the outcome of B.2 in consultation with MJ, YG, TP, AN and DW
C.5	Draft transition arrangements V1	25 Aug 2014	12 Sep 2014	GB	Consolidation of the outcome of C.4 in consultation with MJ, YG, TP, AN and DW
D.5	Draft report to HSSC-6 V0	25 Aug 2014	19 Sep 2014	GB	In consultation with MJ, YG, TP, AN and DW Output: - draft report circulated to CGHR members with outputs of B.3 and C.5 - submission to HSSC-6 (deadline: 22 Sep 2014)
D.6	CGHR Meeting	TBD	TBD	Mathias Jonas (MJ)	In conjunction with EIHC5 (6-10 Oct 2014)
D.7	Revised report to HSSC-6	13 Oct 2014	17 Oct 2014	MJ	Consolidation of the outcome of D.6

CGHR Meeting (Task D)

Date	**Location**	**Remark**
(TBD)	Monaco	In conjunction with EIHC5

CG Chair: Mathias JONAS, Germany — Email: Mathias.Jonas@bsh.de
CG Secretary: Gilles BESSERO, IHB — Email: dtech@iho.int
CG Assistant Secretary: Michel HUET, IHB — Email: adcs@iho.int

CGHR Timeline



		Week Number 2014																			
Task	Item	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
A	A.1																				
	A.2																				
	A.3																				
	A.4																				
B	B.1																				
	B.2	-------	-------	-------	-------	-------	-------	-------	-----|												
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Annex C - Restructuring of the HSSC Working Groups - Rationale and objectives

Restructuring of the HSSC working groups
Rationale and objectives
Mathias Jonas
Chair, HSSC
Rostock, 11 April 2014

Preface

The IHO Convention in force designates as the second of the four objectives of the Organization "the greatest possible uniformity in nautical charts and documents". There is no doubt that this implies technical standardisation of all products which carry nautical information in any form. The scope of this standardisation is largely influenced by the type of media and dissemination technology for these products. However, neither of those two elements is under the full control of the Organization anymore. Colour print, digital cartography and wireless information transfer are examples of developments which have reset the technical basis for the dissemination of nautical information. All of the IHO various standardisation activities are driven by the mainstream of modern geoinformation technology.

Standardisation always considers current possibilities and anticipates future development - and this must also be so for the rather small domain of nautical information. The main relevant consideration here is that the time of printed charts is over. Though the transition from paper to screen will probably continue over another decade, the standardisation of nautical information must focus on digital means. The global focus, as now seen at national, regional and global levels is digital geoinformation - which must, of course, include 21st century hydrographic and nautical charting services.

With the global uptake of digital geoinformation even seafarers get their first familiarization with geoinformation systems on consumer devices based on proprietary standards which have a major influence on all domains. The electronic media which carries nautical information nowadays is technically very complex with a steady tendency to increase. Moreover, it can be easily anticipated that nautical information will become fully absorbed by the look and feel of these emerging technologies.

IHO standardisation must inevitably take account of this tendency, though there is some creative leeway in the provision of nautical Information. This range of specific aspects at the changeover from the thematic interpretation of the basic information into a digital distribution format and their customized presentation requires close collaboration between two sorts of specialists: those with hydrographic background and those with IT engineering background. In the settings of HSSC working groups this synergy is formed by governmental employees with hydrographic background and technical experts representing the industry.

Unlike in the past century, the application of hydrographic knowledge is no longer limited to the support of navigation safety. Many Hydrographic Offices (HOs) are transiting into the role of providers of maritime data for applications beyond ship´s navigation, i.e. marine spatial planning and sea bound exploration. The required technical infrastructure (MSDI) accelerates the need for integrating hydrographic information into modern IT environments including GIS applications. This development is essential for many HOs – not least to increase national visibility and claim the required resources in a difficult economic environment. In this context it is worth noting that almost all HOs have difficulties justifying the nomination of staff and active participation in the standardisation process in terms of cost for travelling and hosting. The best justification however, lies with a proven request for IHO standards by the industry servicing shipping, offshore activities, environment protection and by academia facilitating development in these fields.

Any contemporary standardisation activity of the IHO must therefore target the following:

- Monitor the mainstream of geoinformation technology.
- Adapt this technology to the hydrographic domain.
- Attract participation of HOs and industry experts likewise through the development of modern concepts to enhance the national recognition of hydrography and enable profitable business cases.

Review of the structure of HSSC working groups

An efficient overarching structure of the various working groups of HSSC is fundamental to meet these targets. A suitable structure should facilitate focusing the limited resources on the projects of the highest relevance in accordance with the above considerations. It should ideally reflect the competences of the attendees nominated by the HOs, the trends of the industry, the time pressure associated with all developments in the digital age and the interaction between different themes and different domains close to hydrography.

The analysis of the current structure and its efficiency in terms of participation, as presented in HSSC5-04.2A, identified three issues of concern:

- The overall limited participation of Member States (MS): the highest participation of MS does not exceed one third of the current IHO membership (29 MS represented in the CSPCWG) and eight MS contribute for more than half of the total IHO membership (98 participants out of 188).
- The absence or quasi absence of industry participation in three WG involved in the development or maintenance of product standards: CSPCWG, TWLWG and SCWG.
- Additionally, the development of S-100 and S-100 based product specifications broadens the range of expertise required and makes it more difficult to ensure the cohesion and the attractiveness of the WG.

This situation illustrates evidently that:

- The IHO devotes the largest portion of its limited resources to a declining product – the paper chart.
- Active participation is not attractive enough for industry and academia.

The revision of the structure should address those two basic deficiencies.

Perception of the proposed new structure

The discussion within the Correspondence Group on HSSC working groups restructuring (CGHR) established by HSSC-5 can be summarised as follows:

There is wide consensus about a structure of working groups which oversees time-limited sub-working groups or project teams for life cycle maintenance of existing standards and standardised products and the development of new standards and standardised products. This is essential to note for the following reasons:

- It reflects current practice of some of the working groups (e.g. the development of the portrayal part of S-101)
- It attracts industry participation for the defined runtime of a project of special interest to them.
- It facilitates justifying the participation of experts from HOs, industry and academia which are not nominal members of the particular working group.

There is wide consensus to establish the following working groups in accordance with the draft TORs being considered by the CGHR:

- S-100 Working Group
- ENC Standards Maintenance Working Group
- Tides, Water Level and Currents Working Group

and to keep

- MSDIWG
- DQWG
- DPSWG
- HDWG

untouched under the existing TOR for the time being.

There are strong reservations against the merger of CSPCWG and SNPWG into NCIWG.

The establishment of NCIWG aims at reconsidering the organization of IHO chart specifications in relation to digital and paper products in the context of the transition from S-57 based ENC to S-100 based ENC and other products. With the generalization of the use of ECDIS, the development of e-navigation, and the generalization of GIS-based chart production systems, the time has come to consider shifting the underlying framework of chart specifications from paper to digital products. It seems appropriate to reconsider also the separation between nautical charts and nautical publications and to promote an integrated approach for the provision of chart and other geo-referenced nautical information, especially in the context of e-navigation implementation.

The reservations can be summarized as follow:

- The topics of CSPCWG and SNPWG are thematically too distant from each other and therefore there is no synergy.
- CSPCWG with its huge participation is safeguarding S-4 - the core standard of IHO. Any rearrangement would jeopardize this most important work.
- It is not clear what kind of projects the NCIWG will oversee and how its activities will be conducted in practice.
- Since the focus of the future NCIWG does not seem clear it would be difficult to justify participation to the decision-makers.

These reservations warrant the following comments:

- The charting scope under NCIWG will not simply be the continuation of CSPCWG major work under a new label. A complete revision cycle of the most essential Part B of S-4 (2005) will be completed in 2014. Even though there might be some smaller adaptations necessary in the years to come – the mission to modernise paper chart standards for their remaining life time is accomplished. It would no longer be worth devoting most of the IHO resources to this task.
- One reason for the numerically high participation at CSPCWG is the fact that the scope of this working group addresses the prevailing expertise of cartographers. But this situation is about to change: over a twenty-year transition almost all HOs have now acquired impressive staff expertise in geomatics and digital cartography. The next wave of retirement will result in a proportional shift from staff who has got traditional expertise in paper-based charting towards staff with digital background. The simple consequence is that individuals with different expertise will represent HOs at NCIWG.

How it will work

But what will be the scope of NCIWG and how should this group effectively work?

The objectives proposed in the draft TOR of the future NCIWG cover an open range of possible standardisation fields. This is deliberate in order to offer high flexibility for the future challenges of marine geoinformation systems. However, focusing on future development is not exclusive of the maintenance of the current standards. The balance between these two major streams will be managed through the NCIWG work plan which is seen as the main instrument to control the scope and progress of NCIWG activities.

In this arrangement, NCIWG will operate as a steering group, discussing needs for standardisation, initiating projects, establishing and supervising sub-working groups and project teams. The modus operandi for its meetings should be similar to the current working regime of TSMAD: plenary session the first day, followed by a combination of parallel and sequential meetings of NCIWG sub-working groups and/or project teams, and concluded by a final plenary session to review the achieved results and agree on the way forward. The plenary sessions would involve primarily the leaders of the project teams and sub-working groups. The experts could limit their participation to the relevant session of their project team or sub-working group. With attractive projects and focused meetings, it should not be too difficult to convince the Member States and other stakeholders to send the appropriate experts to the relevant sessions, even if that means sending more than one representative to the sequence of meetings.

In summary, the analysis of the available resources, the experience gained with the successful working regime of TSMAD and the expected tasks related to the design of integrated digital products and services advocate for a merger of CSPCWG and SNPWG under TOR which cover a range of standardisation activities congruent with the requirements and expectations of the users. HSSC will keep full surveillance and control by designating projects via the work plan. The new working group will reflect the future of navigation information in an integrated approach and will bring together those who are still used to be separated today. The implementation will require imagination and efforts but there is no better way to respond to the challenge of our generation of hydrographers.

Annex D - Proposed assignment of IHO Publications under the responsibility of HSSC bodies

Number	Name	Proposed bodies
S-4	Regulations for International (INT) Charts and Chart Specifications of the IHO	CSPCWG (step 1) NIPWG (step 2)
INT 1	Symbols, Abbreviations and Terms used on Charts	CSPCWG (step 1) NIPWG (step 2)
INT 2	Borders, Graduations, Grids and Linear Scales	CSPCWG (step 1) NIPWG (step 2)
INT 3	Use of Symbols and Abbreviations	CSPCWG (step 1) NIPWG (step 2)
S-11 Part A	Guidance for the Preparation and Maintenance of INT Chart schemes	CSPCWG (step 1) NIPWG (step 2)
S-12	Standardization of List of Lights and Fog Signals	NIPWG
S-44	IHO Standards for Hydrographic Surveys	HSSC (Project Team if and when required)
S-49	Standardization of Mariners' Routeing Guides	NIPWG
S-52	Specifications for Chart Content and Display Aspects of ECDIS	ENCWG
S-52 Annex A	IHO ECDIS Presentation Library	ENCWG
S-52 Appendix 1	Guidance on Updating the ENC	ENCWG
S-57	IHO Transfer Standard for Digital Hydrographic Data	ENCWG
S-57 Appendix B.1	ENC Product Specification	ENCWG
S-57 Appendix B.1 Annex A	Use of the Object Catalogue for ENC	ENCWG
S-58	Recommended ENC Validation Checks	ENCWG
S-60	Users Handbook on Datum Transformations involving WGS 84	HSSC (Project Team if and when required)
S-61	Product Specifications for Raster Navigational Charts (RNC)	ENCWG
S-62	List of Data Producer Codes	ENCWG
S-63	IHO Data Protection Scheme	DPSWG
S-64	Test Data Sets for ECDIS	ENCWG
S-65	ENC Production Guidance	ENCWG
S-66	Facts about Electronic Charting and Carriage Requirements	HSSC (Project Team being established)

Number	Name	Proposed bodies
S-99	Operational Procedures for the Organization and Management of the IHO Geospatial Information Registry	S-100WG
S-100	IHO Universal Hydrographic Data Model	S-100WG
S-101	ENC Product Specification	S-100WG NIPWG (Project Team if and when required)
S-102	Bathymetric Surface	S-100WG (Project Team if and when required)
S-103	Sub-surface Navigation	S-100WG NIPWG (Project Team if and when required)
S-111	Surface currents	S-100WG TWCWG (Project Team if and when required)
S-121	Maritime limits and boundaries	S-100WG NIPWG (Project Team if and when required)
S-122	Marine Protected Areas;	S-100WG NIPWG (Project Team if and when required)
S-123	Radio Services	S-100WG NIPWG (Project Team if and when required)
S-124	Navigational warnings	S-100WG WWNWS-SC (Project Team if and when required)
S-125	Navigational services	S-100WG NIPWG (Project Team if and when required)
S-126	Physical Environment	S-100WG NIPWG (Project Team if and when required)
S-127	Traffic Management	S-100WG NIPWG (Project Team if and when required)
S-1xx	Marine Services	S-100WG NIPWG (Project Team if and when required)

Number	Name	Proposed bodies
S-1xx	Digital Mariner Routeing Guide	S-100WG NIPWG (Project Team if and when required)
S-1xx	Harbour Infrastructure	S-100WG NIPWG (Project Team if and when required)
S-1xx	(Social/Political)	S-100WG NIPWG (Project Team if and when required)
C-17	Spatial Data Infrastructures: "The Marine Dimension" - Guidance For Hydrographic Offices	MSDIWG
C-51	A Manual on Technical Aspects of The United Nations Convention on the Law of The Sea - 1982	ABLOS

Annex E - Responses to IHO CL 39/2014: Contribution of Member States to HSSC activities in the new structure

Organ	Number of MS interested in				MS interested	Number of MS currently participating	
	Active participation	Chair or Vice-Chair	Secretary	Project Teams		Survey Respondents	Total
HSSC	20	3	NA	8	AU, BE, BR, CA, DK, FI, FR, DE, GR, IN, JP, KR, NL, NO, SG, ZA, ES, SE, UK, US	19	34
MSDIWG	13	2	0	6	AU[a], BR, CA, DK, FI, FR, DE, JP, NL, NO, ES, UK, US	12	25
DQWG	10	2	0	5	AU, CA, FI, FR, JP, KR, NL, SE, UK, US	13	18
DPSWG	4	2	0	2	FR, JP, NO, UK	6	6
S-100WG	15	1	0	7	BE, BR, CA, DK, FI, FR, IN, JP, KR, NL, NO, ZA, SE, UK, US	15[1]	17[1]
NIPWG	17	2	0	9	BR, CA, DK, FI, FR, DE, GR, IN, JP, KR, NL, NO, ZA, ES, SE, UK, US	18[2]	31[2]
ENCWG	15	2	0	9	AU, BR, CA, DK, FI, FR, DE, IN, JP, KR, NL, NO, ZA, UK, US	15[1]	17[1]
TWCWG	15	3	0	6	AU, BR, CA, FI, FR, DE, IN, JP, KR, NL, NO, ZA, ES, UK, US	14[3]	25[3]
HDWG	6	1	0	2	AU, FR, ES, US, JP, KR	5	8
	IHO Representative	**IHO Observer**					
ABLOS	5	3			BR, FR, IN, JP, KR, NL, UK, US	6	7
	Registry Manager	**Register Manager**	**Domain Control Body**				
S-100 GI Management	1	0	7		AU, CA, FR, JP, KR, NL, UK, US	1	1

[a] Participation by correspondence.
[1] Based on the combined membership of DIPWG and TSMAD.
[2] Based on the combined membership of CSPCWG and SNPWG.
[3] Based on the combined membership of SCWG and TWLWG.

Annex F - Responses to IHO CL 39/2014: Comments from Member States on the work plans

Australia

NICWG Work Plan:

Tasks A to E. These tasks are not future focussed, yet have shaped the current highest priority activities within the listed work items. Unfortunately, the resulting priorities within the Work Plan do not appear to align with the intent of CL39-2014.

- Those related to manuscript publications need to have a business case developed to ascertain the ongoing need for the work item as the user-driven need for further standardisation is unclear.
- Work items are required which will take paper charts into an age when they are a backup to ENC and are derived from ENC databases. Example 1; what minor changes to cartographic practices would streamline derivation of paper charts from ENC? Example 2; noting that by 2027-2032* there will likely be few mariners truly familiar with paper charts, and that symbology between paper charts and ENC differs greatly in a number of key areas, tasks should be included to maximise commonality of symbology by revisions to symbology in either or both mediums.

* Note: The average seagoing career for a deck officer is 9-14 years. The last deck officers for whom paper charts have been their first choice will therefore retire from seagoing service in 2027-2032 and be replaced by those unfamiliar with paper charts. While this may seem some time away, given the rate at which full new editions of paper charts are published, the first AU charts with an expected life beyond these dates will be published as soon as 2018 – the time to address a coordinated approach to the future paper chart has already arrived. (AU average time between full new editions of paper charts is 9 years: 450 paper charts in series, approximately 50 new editions published annually).

Tasks G and H. The Maritime Services Portfolio "hydrographic services" needs to be considered in the context of a number of other proposed MSP, as the specific intent of several MSP overlap and are unclear. The IMO proposed timeline for resolution is 2018.

HDWG Work Plan:

This overall work plan should be migrated to become the outcome of a register, on the basis of one defined term has one meaning, not remain development of a stand-alone publication developed through HDWG members 'negotiating' between different working groups.

Task A.3. This has particularly been the case with Task A.3, which may not be successfully resolved while HDWG remains "in the middle" of two opposing views, one looking forward, the other focussed on past practice in relation to a single chart format.

Croatia

Croatia welcomes a pretty comprehensive and ambitious work program.

Japan

The formats of work plans are not consistent. That is, some work plans such as S-100 WG have objectives but other work plans such as HDWG do not. To avoid duplication with TOR and ROP we would suggest deleting objectives and tasks or more clearing differences with TOR and ROP in the format of work plans.

Sweden

Our opinion is that S-100WG should be concentrated on the maintenance of the S-100 and S-99 standards and as much "domain independent" as possible. The ENC WG should cover ENC standards

both existing S-57 and upcoming S-101. Consequently the work items of S-100 WG D.2, D.2bis, D.3 and D.4 would belong to ENCWG.

United Kingdom

Tasks F.1, G.2 and G.3 in the NICWG work plan are a considerable undertaking that will necessitate the formation of project teams. These teams will need additional resource and thus negate any resource saving from the formation of NICWG.

UK is content with all other work plans.

Annex G - Responses to IHO CL 39/2014: Other comments from Member States

Australia
Overall, the intent is agreed, however there are some concerns over the proposed manner of implementation.

Terms of reference – all WG
Objectives:
In all cases the "Objectives" within the terms of reference are of a highly generic nature sufficient to define a broad area of interest for the WG, but insufficient to give guidance on priorities. It may be appropriate to break "Objectives" into those that are enduring (largely as written already), and those to be achieved by the next five year period or by, for example, the next conference.
While some existing WG have appropriately assigned priorities, others are, in AU opinion, consequently not even recognising the existence of certain "bigger picture" tasks, let alone prioritising them to meet near term future requirements. By offering both enduring and more specific objectives, HSSC would be providing more specific direction and accepting that some lesser tasks may not be undertaken within a specified timeframe. This would also align well with performance measures, by placing the measures against those tasks truly considered to be on the critical path to a certain desired outcome. At present, the task lists for each proposed WG appear to have been drafted to capture existing tasks, irrespective of the intention to refocus the combined work of the various WG.

Procedures:
In all cases the "Procedures" part of the terms of reference for each working group mixes a loose "what is to be done" (sub-paragraph 'a') with "how business is to be conducted" (sub-paragraph 'b' onward). In all cases, this first sub-paragraph within "Procedures" should be separated to become "Role".

Terms of Reference - TWLCWG:
ToR 4.a) (v). Suggest amend to read:
study principles and contribute to development of improved methods for conveying tidal, water level and current information to mariners and other users;

Other comments

CL39-2014, under the section "Review of structure of HSSC working groups", several paragraphs commencing with:

> *"There are strong reservations against the merger of CSPCWG and SNPWG into NCIWG."*

While the aims in the paragraph following this are agreed, and the four dot points summarise the concerns well, it is felt that the subsequent comments contained in CL39-2014 do not adequately address the reservations.

Comments from the current Chair of CSPCWG are:

> *There is a preconception in the discussions to date that the CSPCWG is a "paper chart focused" WG. This preconception is incorrect, although I can understand how this may have occurred given the fact that most of the members of the WG have come from a paper chart compilation background; and the main Standard for which the CSPCWG is responsible (S-4) is historically formatted in accordance with the traditional requirements for paper charts. However, the focus of the WG is to address issues of nautical cartography for all nautical charts, no matter what form the chart may take. This fact is stated in numerous places within S-4, meaning that all nautical charting products must be considered when discussing and deciding issues related to the nautical cartography requirements for charts.*

I have stated above that most members of the WG have come from a paper chart background, however this is gradually changing, as the more experienced nautical cartographers in HO's are increasingly indoctrinated in ENC (as is the case for the current CSPCWG Chair, who has as strong a background in ENC as in paper charts).

One of the things the HSSC needs to be aware of is that the CSPCWG is the only WG at which nautical cartography is discussed. I have always described this to the uninitiated as discussing the "what" and "why" in terms of emerging requirements in navigation and chart content. WG's such as TSMAD only discuss the "how" in terms of encoding information required for charts based on CSPCWG decisions in accordance with a single Standard (i.e. the TSMAD relies on the CSPCWG to decide whether, and if so to what extent, an emerging requirement for navigation is justified.. The requirements to make decisions related to nautical charting by nautical cartographers is not reduced because the international focus is shifting from manuscript based products to digital products. Decisions related to chart content (the "what") and requirements (the "why") are no less important a requirement in terms of the ENC as they are for the paper chart.

The skill sets of the members of the two existing WG's (CSPCWG and SNPWG) are, as far as I can tell, very different. The focus of CSPCWG is purely nautical cartography – a very specialized skill set. A merger of the CSPCWG and SNPWG will only serve to dilute this skill set. As we have seen with the joint meetings of TSMAD and DIPWG, when any discussion is taking place, it tends to involve only half the attendees, depending on the subject being discussed. I cannot see this being any different with the proposed NICWG, even if there are dedicated project groups.

Comments from AU:
With the one exception of a work item to address the Maritime Service Portfolio "hydrographic services", the list of work items within the CL39-2014 does not achieve a shift in emphasis to a future focus, but relies instead on a gradual shift in skills and experience of members in that WG (as mentioned by Chair HSSC in the CL, and Chair CSPCWG above). The merger with SNPWG has no positive effect on this gradual shift, but simply introduces a broader area of responsibilities across two quite separate and differing skill sets. Unfortunately, the assumption that nations will be able to provide more than one representative (discussed below) to a newly merged NCIWG has the potential to actually undermine that gradual shift by potentially forcing Member States to choose between sending a publications or charting focussed representative.

It is considered that, to achieve the necessary shift in focus, the proposed Work Plan and Work items must be reconsidered, rather than simply being largely a collection of existing items spread across the two current WG. It is further considered that, if a reduction in the number of WG is a key objective, then the lower priority activities of one or more WG simply be closed down in total. However, as Member States are free to contribute and withdraw support to individual WG as they see fit, the ongoing existence of SNPWG as a separate entity does not automatically infer an additional resource demand upon Member States.

CL39-2014, under the section "How it will work", third paragraph:

"In this arrangement, NICWG will operate as a steering group, discussing the needs for standardisation, initiating projects, establishing and supervising sub-working groups and project teams."

Note: This is also referred to elsewhere as "NICWG".

AU has significant concerns regarding this delegation of the responsibility for steering the other technical working groups. Ultimately, the appropriate steering group is HSSC. The mechanics of how this will work is secondary to that basic allocation of roles.

It is doubtful that NCIWG will have the ability to bring together the resources to form project teams unless those resources are already members of NCIWG. In all other cases it will be necessary for the NCIWG Chair to approach those who control those additional resources which may be placed at the disposal of a project group / sub-working group. As these additional resources (people plus travel funding plus time) are controlled by the individual national Hydrographers or heads of delegations at HSSC, it is HSSC that should be calling for and establishing multi-disciplinary project teams.

"With attractive projects and focussed meetings, it should not be too difficult to convince Member States and other stakeholders to send the appropriate experts to the relevant sessions, even if that means sending more than one representative to the sequence of meetings."

AU considers this to be a risky assumption in the context of establishing project teams. For example, AU travel commitments to support IHO activities all require approval at significantly higher levels within the Australian Defence Organisation than the national Hydrographer, with in-principle budgetary requests being submitted up to 15 months before the required travel date, and with emergent travel requirements outside the initially agreed list particularly difficult to accommodate. Justification for sending more than one staff member to the same meeting, or collocated and concurrent meetings, is even more difficult. This may or may not be similar to fiscal constraints for other Member States, but informal discussion suggests that at least a few others face similar challenges. The ease or difficulty of other Member States to send multiple representatives to common meetings should be ascertained to test the validity of this key assumption.

Croatia

Before the global economic crisis Croatia very actively participated in the work of the IHO for years. Through participation with its representatives in a number of working groups and commissions, and hosting some important meetings of working groups and commissions, Croatia additionally engaged its staff and substantial financial resources. Furthermore, Croatia actively participated by correspondence in the proposals, in the addressing of particular issues within the domain of the IHO, or in the implementation of adopted work programmes of the IHO.

In recent years, with the growing crisis, there has been a substantial reduction of expenditure on activities related to travelling abroad, whose amount constitutes a significant item in the CHI budget.

Since no major improvement of the financial situation is to be expected in the near future, recognizing that active participation in WGs and project teams according to new HSSC structure requires the presence of potential CHI experts at the meetings worldwide, we are not in a position, for the time being, to participate actively in the work of any WG or project team.

Nevertheless, it should be emphasized that we will continue giving particular attention to observing the implementation of work programmes of the IHO, HSSC and all working groups and project teams, making every effort to contribute by correspondence as corresponding members.

Furthermore, it is a well-known fact that such a global financial situation is also reflected upon some very proactive and contributing IHO member states, which until the crisis provided a significant contribution to the achievement of IHO strategic goals. We therefore suggest to take into account that fact at the IHO level, and to initiate a discussion on possible options of the financial support for such activities of proactive IHO members, for example as a separate item in the IHO Capacity Building Fund, through redistribution of membership dues or otherwise. In that case it would be necessary, as a matter of course, to determine the conditions and criteria for allocation of these funds.

Finland

The benefits of the establishment of the huge NICWG are not clear. This is in our understanding by nature a Steering Group. This needs more project management and administrative skilled members than experts on subject issues, as currently in existing WGs.

The concept of project Teams is not clear, and thus not able to confirm our participation. We have found more feasible to get resources and funding for permanent WGs than more temporary or ad-hoc Project Teams.

It is important that this re-organisation process does not delay the time schedule for transition to S-100/S-101 world. The existing HSSC WGs should be advised to prepare their work and future meetings for 2015.
IRCC6 has proposed that MSDIWG should be moved under IRCC. If supported, this should be included in the HSSC re-organisation plans.
The comments, concerns and proposals raised by the CGHR Correspondence Group have not been duly addressed in these proposals.

France
Resulting from the merger of the CSPCWG and SNPWG, the NICWG will handle a range of topics for which each member will probably be specialized in a limited number of tasks of the work plan. Consequently, particular care should be taken when preparing the meeting agendas so that these experts may focus their participation on the days when their subject matters is considered.

Japan
General Comments
There are so many WGs at present and it is a burden for the Member States, particularly States with small organization to participate in all the related meetings. Therefore, we support the restructuring proposal in the document to reduce WGs as much as possible and thereby incentive to more efficient and active discussions. Even though merged WGs will cover more broad areas and might increase burden to manage agenda, it will be manageable by streamlining operations of meetings or establishing subgroups if necessary.

Regarding Annex B Draft TOR and ROP
(1), Objectives
Objectives of TOR and ROP in each WG should include policy, reference, outreach planning, development and implementation of programme for capacity building in cooperation with CBSC.

(2), Composition and Chairmanship
If participation of Expert Contributors (EC) from private sectors are required in NICWG and ENCWG, more detailed descriptions are needed such as merits, demerits, rights and obligations of their participation. Their participation procedures are also needed.

(3) Procedures
(a) subparagraph a)
Subparagraph a) is “Tasks”, not “Procedures”. Therefore, we would suggest deleting this part in order to avoid duplication of work plans that “Tasks” are in.

(b) subparagraph c)
Firstly, there is no clear explanation why decision by voting are made even though “decision should generally be made by consensus” as defined in the first sentence. Therefore, we would suggest modifying the second sentence as “If consensus cannot be reached and votes are required ～”. Secondly, subparagraph c) of Procedures is not described how decisions are made by voting. If decision are made by a simple majority of Member States, it should be so described.

Netherlands
NLHO supports the rationale behind the future-oriented restructure as described by chairman HSSC, although there may still be issues to overcome on the specifics of the merger of these working groups.

NL has indicated possible participation in WG, more or less mirroring the contribution in the present structure.

Spain

IHM (Spain) does not consider the merging of CSPCWG and SNPWG convenient, due to the high volume of workload that these two working groups bear, and the different types of subjects they deal with. Perhaps when the transition to S-l0X standards, and the development of e-navigation be at a more advanced stage, a progressive merging of these two groups could take place, but at the time being grouping two so different work-intensive groups in one, would not be very effective. As an example, still two representatives from each MS would be needed in many cases for the consolidated group, and this is not feasible for all the MS.

Sweden

It is still hard to get a grip on how the new NICWG will function in its role as an umbrella of project teams (is it a sub-committee?). We are definitively positive and see NICWG as a potential for improvement of the overall structure and division of work within HSSC. The most important reason and rationale is that there will be a number of IHO specifications within the nautical-navigational domain and they will need coordination and harmonization. This is more important, we think, than the changing role for paper charts.

There is a need to develop and inform on the time-line and procedures for implementation of the new HSSC structure

We understand that there is a possible change around the corner to move MSDIWG to IRCC. If that will be the case HSSC has to consider that technical aspects of SDI and the use of geodata services, including requirements from other domains, may need to be taken care within the "services and standards" committee. The NICWG will not be the proper place for this as it is responsible for the nautical domains.

United Kingdom

UK fully supports the formation of the S-100 and ENCWG groups and will continue to commit time and resource to them as we did for the groups they replace.

UK do not consider that the formation of NICWG will deliver any benefit at this time, nor will it make any manpower saving. The principle of moving towards a nautical information group rather than product focused groups is sound, but probably not for a few years yet.

UK therefore support the need to consider a move towards NICWG, but believe that it cannot replace CSPCWG and SNPWG at this time. The continued maintenance of Chart and Publication standards requires the continuation of separate WGs.

In the event that MS approve the formation of NICWG, UK would wish to participate.

UK considers that under the new structure, DQWG should really be considered as a project below NICWG.

Annex H - Draft Terms of Reference and Rules of Procedure

S-100 Working Group (S-100WG)

Reference: [x]th HSSC Meeting [location, date]

1. Objective

a) To maintain, develop and extend

(i) S-100 - Universal Hydrographic Data Model;

(ii) S-99 - Operational Procedures for the Organization and Management of the S-100 Geospatial Information Registry;

b) To supervise the management and development of the S-100 Geospatial Information Registry;

c) To advise and support the development and maintenance of S-100-based product specifications in liaison with the relevant IHO bodies and non-IHO entities;

d) To monitor the development of other relevant 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. Composition and Chairmanship

a) The WG shall comprise representatives of IHO Member States (MS), Expert Contributors (EC), observers from accredited NGIO, and a representative of the IHB ("IHB" to be replaced by "IHO Secretariat" when the IHO Secretariat is established). A membership list shall be maintained and posted on the IHO website.

b) EC membership is open to entities and organizations that can provide a relevant and constructive contribution to the work of the WG.

c) The Chair and Vice-Chair shall be a representative of a MS. 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 into force) and shall be determined by vote of the MS present and voting.

d) If a secretary is required it should normally be drawn from a member of the WG.

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) ECs shall seek approval of membership from the Chair.

g) EC membership may be withdrawn in the event that a majority of the MS represented in the WG agrees that an EC's continued participation is irrelevant or unconstructive to the work of the WG.

h) All members shall inform the Chair in advance of their intention to attend meetings of the WG.

i) In the event that a large number of EC members seek to attend a meeting, the Chair may restrict attendance by inviting ECs to act through one or more collective representatives.

4. Procedures

a) The WG should:

(i) maintain S-100 as directed in Part 12 (S-100 Maintenance Procedures) and in accordance with IHO Resolution 2/2007 as amended;

(ii) maintain S-99 in accordance with IHO Resolution 2/2007 as amended;

(iii) draft new editions of S-99 and S-100 as instructed by HSSC;

(iv) keep under review relevant international standards and specifications and advise HSSC accordingly; and

(v) consider new topics as instructed by HSSC and advise HSSC accordingly.

b) The WG should work by correspondence, teleconferences, group meetings, workshops or symposia. The WG should meet about 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) 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 at meetings shall be on the basis of one vote per MS represented at the meeting. Votes by correspondence shall be on the basis of one vote per MS represented in the WG.

d) The date and venue of group meetings shall normally be announced by the Chair at least six months in advance.

e) The draft record of meetings shall be distributed by the Chair (or 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 posted on the IHO website within three months after a meeting.

f) Sub-working groups and project teams may be created by the WG or proposed to HSSC to undertake detailed work on specific topics. The terms of reference and rules of procedure of the sub-working groups and project teams are determined or proposed by the WG as appropriate.

g) The WG should liaise with other IHO bodies, international organizations and industry to educate on and encourage the application of S-100 to the work of those entities.

h) The WG should prepare annually a report on its activities and a rolling two-year work plan, including expected time frame.

Nautical Information Provision Working Group (NIPWG)

Reference: [x]th HSSC Meeting [location, date]

1. Objective

a) To develop and maintain guidance, resolutions and specifications in order to provide shipboard users the necessary and up-to-date information in a timely manner to allow for the planning of a safe route for the intended voyage and the safeguarding of the ship's navigation throughout the voyage;

b) To support the development and maintenance of related specifications in liaison with the relevant IHO bodies and non-IHO entities;

c) To monitor the evolution of the requirements and regulations of marine navigation.

d) To develop and maintain the relevant IHO publications for which the WG is responsible.

2. Authority

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

3. Composition and Chairmanship

a) The WG shall comprise representatives of IHO Member States (MS), Expert Contributors (EC), observers from accredited NGIO, and a representative of the IHB ("IHB" to be replaced by "IHO Secretariat" when the IHO Secretariat is established). A membership list shall be maintained and posted on the IHO website.

b) EC membership is open to entities and organizations that can provide a relevant and constructive contribution to the work of the WG.

c) The Chair and Vice-Chair shall be a representative of a MS. 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 into force) and shall be determined by vote of the MS present and voting.

d) If a secretary is required it should normally be drawn from a member of the WG.

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) ECs shall seek approval of membership from the Chair.

g) EC membership may be withdrawn in the event that a majority of the MS represented in the WG agrees that an EC's continued participation is irrelevant or unconstructive to the work of the WG.

h) All members shall inform the Chair in advance of their intention to attend meetings of the WG.

i) In the event that a large number of EC members seek to attend a meeting, the Chair may restrict attendance by inviting ECs to act through one or more collective representatives.

4. Procedures

a) The WG should:

(i) keep under review the relevant IHO publications and resolutions in order to advise HSSC on their updating;

(ii) draft or revise guidance documents, resolutions and specifications as appropriate and as instructed by HSSC;

(iii) [advise the IHB ("IHB" to be replaced by "IHO Secretariat" when the IHO Secretariat is established) and the Regional Hydrographic Commissions, as appropriate, on the work of the International Charting Coordination Working Groups (ICCWG) or the Regional Charting Groups (RCG) in order to promote the coordinated production of nautical charts and publications;[the role of the WG is purely consultative;]

(iv) offer advice based on the WG experience on issues relevant to ICCWG/RCG and individual Member States, on chart schemes and on cartographic work, in order to strongly encourage adherence to IHO charting specifications;[the role of the WG is purely consultative;]]

Note: clauses (iii) and (iv) are not applicable while the CSPCWG is maintained.

(v) keep under review relevant requirements and regulations of marine navigation and advise HSSC accordingly;

(vi) monitor the operational performance of IHO specifications, the progress in relevant technologies and navigational equipment , and the feedback from users; and

(vii) consider new relevant topics as instructed by HSSC and advise HSSC accordingly.

b) The WG should work by correspondence, teleconferences, group meetings, workshops or symposia. The WG should meet about 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) 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 at meetings shall be on the basis of one vote per MS represented at the meeting. Votes by correspondence shall be on the basis of one vote per MS represented in the WG.

d) The date and venue of group meetings shall normally be announced by the Chair at least six months in advance.

e) The draft record of meetings shall be distributed by the Chair (or 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 posted on the IHO website within three months after a meeting.

f) Sub-working groups and project teams may be created by the WG or proposed to HSSC to undertake detailed work on specific topics. The terms of reference and rules of procedure of the sub-working groups and project teams are determined or proposed by the WG as appropriate.

g) The WG should liaise with other IHO bodies, international organizations and industry to ensure the relevance of its work.

h) The WG should prepare annually a report on its activities and a rolling two-year work plan, including expected time frame.

ENC Standards Maintenance Working Group (ENCWG)

Reference: [x]th HSSC Meeting [location, date]

1. Objective

To maintain IHO standards which apply to ENC production and display:

(i) S-52 - Specifications for Chart Content and Display Aspects of ECDIS (including its components);

(ii) S-57 - IHO Transfer Standard for Digital Hydrographic Data (including is components);

(iii) S-58 - Recommended ENC Validation Checks;

(iv) S-62 - List of Data Producer Codes

(v) S-64 - IHO Test Data Sets for ECDIS.

(vi) S-65 - ENCs: Production, Maintenance and Distribution Guidance

2. Authority

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

3. Composition and Chairmanship

a) The WG shall comprise representatives of IHO Member States (MS), Expert Contributors (EC), observers from accredited NGIO, and a representative of the IHB ("IHB" to be replaced by "IHO Secretariat" when the IHO Secretariat is established). A membership list shall be maintained and posted on the IHO website.

b) EC membership is open to entities and organizations that can provide a relevant and constructive contribution to the work of the WG.

c) The Chair and Vice-Chair shall be a representative of a MS. 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 into force) and shall be determined by vote of the MS present and voting.

d) If a secretary is required it should normally be drawn from a member of the WG.

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) ECs shall seek approval of membership from the Chair.

g) EC membership may be withdrawn in the event that a majority of the MS represented in the WG agrees that an EC's continued participation is irrelevant or unconstructive to the work of the WG.

h) All members shall inform the Chair in advance of their intention to attend meetings of the WG.

i) In the event that a large number of EC members seek to attend a meeting, the Chair may restrict attendance by inviting ECs to act through one or more collective representatives.

4. Procedures

a) The WG should:

(i) maintain S-57 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 S-52 and its accompanying Presentation Library by preparing and promulgating maintenance documents or new editions when required. In the case of issues which may be related to the portrayal of objects according to S-52, the procedure described in Annex 2 must be adhered to;

(iii) maintain S-58, S-62, S-64 and S-65 to ensure consistency with the evolution of S-52 and S-57;

(iv) coordinate technical exchange with type-approval authorities, ECDIS manufacturers and ECDIS user community and offer guidance and advice as appropriate; and

(v) keep under review the relevant IHO publications and resolutions in order to advise HSSC on their updating.

b) The WG should work by correspondence, teleconferences, group meetings, workshops or symposia. The WG should meet about 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) 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 at meetings shall be on the basis of one vote per MS represented at the meeting. Votes by correspondence shall be on the basis of one vote per MS represented in the WG.

d) The date and venue of group meetings shall normally be announced by the Chair at least six months in advance.

e) The draft record of meetings shall be distributed by the Chair (or 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 posted on the IHO website within three months after a meeting.

f) Sub-working groups and project teams may be created by the WG or proposed to HSSC to undertake detailed work on specific topics. The terms of reference and rules of procedure of the sub-working groups and project teams are determined or proposed by the WG as appropriate.

g) The WG should liaise with other IHO bodies, international organizations and industry to ensure the relevance of its work and timely notice of changes to the standards.

h) The WG should prepare annually a report on its activities and a rolling two-year work plan, including expected time frame.

Annex 1: Procedure for addressing S-57 data related issues

(to be derived from Annex 1 to TSMAD TOR)

Annex 2: Procedure for addressing S-52 portrayal issues
(to be derived from Annex 1 to DIPWG TOR)

Tides, Water Level and Currents Working Group (TWCWG)

Reference: [x]th HSSC Meeting [location, date]

1. Objective

a) To provide technical advice and coordination on matters related to tides, water levels, currents and vertical datum, including integrated water level/current data models.

b) To support the development and maintenance of related specifications in liaison with the relevant IHO bodies and non-IHO entities;

c) 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.

3. Composition and Chairmanship

a) The WG shall comprise representatives of IHO Member States (MS), Expert Contributors (EC), observers from accredited NGIO, and a representative of the IHB ("IHB" to be replaced by "IHO Secretariat" when the IHO Secretariat is established). A membership list shall be maintained and posted on the IHO website.

b) EC membership is open to entities and organizations that can provide a relevant and constructive contribution to the work of the WG.

c) The Chair and Vice-Chair shall be a representative of a MS. 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 into force) and shall be determined by vote of the MS present and voting.

d) If a secretary is required it should normally be drawn from a member of the WG.

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) ECs shall seek approval of membership from the Chair.

g) EC membership may be withdrawn in the event that a majority of the MS represented in the WG agrees that an EC's continued participation is irrelevant or unconstructive to the work of the WG.

h) All members shall inform the Chair in advance of their intention to attend meetings of the WG.

i) In the event that a large number of EC members seek to attend a meeting, the Chair may restrict attendance by inviting ECs to act through one or more collective representatives.

4. Procedures

a) The WG should:

(i) monitor and develop the use of tidal, water level and current information including integrated water level/current data models;

(ii) advise on the use of vertical datums;

(iii) advise on tidal, water level and current observation, analysis and prediction;

(iv) advise on matters concerning exchange, distribution and use of tidal, water level and current related data/information;

(v) study principles and contribute to the development of improved[2] methods for conveying tidal, water level and current information to mariners and other users;

(vi) keep under review the relevant IHO publications and resolutions in order to advise HSSC on their updating;

(vii) draft or revise guidance document(s), resolutions and specifications as appropriate and as instructed by HSSC; and

(viii) consider new related topics as instructed by HSSC and advise HSSC accordingly.

b) The WG should work by correspondence, teleconferences, group meetings, workshops or symposia. The WG should meet about 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) 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 at meetings shall be on the basis of one vote per MS represented at the meeting. Votes by correspondence shall be on the basis of one vote per MS represented in the WG.

d) The date and venue of group meetings shall normally be announced by the Chair at least six months in advance.

e) The draft record of meetings shall be distributed by the Chair (or 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 posted on the IHO website within three months after a meeting.

f) Sub-working groups and project teams may be created by the WG or proposed to HSSC to undertake detailed work on specific topics. The terms of reference and rules of procedure of the sub-working groups and project teams are determined or proposed by the WG as appropriate.

g) The WG should liaise with other IHO bodies, international organizations and industry to ensure the relevance of its work.

h) The WG should prepare annually a report on its activities and a rolling two-year work plan, including expected time frame.

[2] Amendment proposed by Australia (see Annex G).

Generic terms of reference and rules of procedure for HSSC Project Teams

Reference: [x]th [WG name/HSSC] Meeting [location, date]

1. Objective

To [develop / revise / extend / …] … (*name of standards, publication, or product specification*).

2. Authority

This Project Team is a subsidiary of the … (*name of WG or Committee*)**.** Its work is guided by the work plan established by … (*acronym of the WG or Committee*) and subject to its approval.

3. Composition and Chairmanship

a) The Project Team shall comprise representatives of IHO Member States (MS), Expert Contributors (EC) and observers from accredited NGIO. The IHB may be represented ("IHB" to be replaced by "IHO Secretariat" when the IHO Secretariat is established). A membership list shall be maintained and posted on the IHO website.

b) EC membership is open to entities and organizations that can provide a relevant and constructive contribution to the work of the Project Team.

c) The Chair is designated by the parent body.

d) If a secretary is required it should normally be drawn from a member of the Project Team.

e) ECs shall seek approval of membership from the Chair.

f) EC membership may be withdrawn in the event that a majority of the members in the Project Team agrees that an EC's continued participation is irrelevant or unconstructive to the work of the Project Team.

4. Procedures

a) The Project Team should work primarily by correspondence and teleconferences, although face to face meetings at the project start, and at other significant milestones, may be convenient when held in conjunction with another convenient IHO forum.

b) Decisions should be made by consensus. Dissenting opinions if any should be reflected in the Project Team report.

c) The Project Team should liaise with other IHO bodies, international organizations and industry to ensure the relevance of its work.

d) The Project Team should report in accordance with its work plan.

Annex I - Draft Work Plans 2015-2016

Notes:
1. *The IHO Task numbers refer to the draft work programme for 2015 circulated to the Chairs and Vice-Chairs of IHO bodies.*
2. *See paragraph 41 of the report for the schedule of meetings beyond 31 December 2014.*

S-100WG WORK PLAN 2015-16

Objective

e) To maintain, develop and extend

(iii) S-100 - Universal Hydrographic Data Model;

(iv) S-99 - Operational Procedures for the Organization and Management of the S-100 Geospatial Information Registry;

f) To supervise the management and development of the S-100 Geospatial Information Registry;

g) To advise and support the development and maintenance of S-100-based product specifications in liaison with the relevant IHO bodies and non-IHO entities;

h) To monitor the development of other related international standards.

Tasks

A	Maintain and extend S-100 “IHO Universal Hydrographic Data Model” (IHO Task 2.2.2.2)
B	Maintain and extend S-99 “Operational Procedures for the Organization and Management of the S-100 Geospatial Information Registry” (IHO Task 2.2.2.9)
C	Maintain and extend the S-100 GI Registry (IHO Task 2.2.4)
D	[Supervise/Advise] and support the development and maintenance of S-100-based product specifications
E	Monitor the development of other related international standards
F	Provide outreach and technical assistance regarding the implementation of S-100 (IHO Task 2.2.5)
G	Maintain the S-100 section of the IHO website (IHO Task 2.2.2)
H	Conduct the 2015 and 2016 meetings of the S-100WG and its sub-group(s) and project team(s) (IHO Task 2.2.1)

Work item	Title	Priority H-high M-medium L-low	Next milestone	Start Date	End Date	Status P-planned O-ongoing C-completed S-Superseded	Contact Person(s)	Related Pubs / Standard	Remarks
A.1	Develop S-100 Edition 2.0.0	M		2010	2015	O	Barrie Greenslade (UKHO)		
A.2	Investigate a suitable grid referencing system for S-100	L		2010		P	Tony Pharaoh (IHB)		
D.1	Review the S-100 Master Plan annually	H	HSSC-7 & 8	2013	Permanent	O	Barrie Greenslade (UKHO)	S-100	Include monitoring the need to revise existing S-100-based PS (e.g. S-102) and or to develop new S-100-based PS.
D.2	Review the S-101 Value Added Roadmap annually	H	HSSC-7 & 8	2013	Permanent	O	Julia Powell (NOAA)	S-101	
D.2bis	Develop a template Product Specification for Marine Information Overlays (MIO)	M	HSSC-7	2010	2015	O	Barrie Greenslade (UKHO)		
D.3	Develop 1st draft of S-101 ENC product specification	H		2006	2015	O	Julia Powell (NOAA)		S-100 WG to consider whether a S-101 Project Team should be established
D.4	Monitor the implementation of the 1st draft of S-101 ENC product specification	H		2015		P			
E.1	Monitor the development of other related international standards	M				P			
F.1	Liaise with IHO subsidiary bodies and subordinate organs, e.g. WWNWS-SC, NIPWG, ENCWG, etc.								Establish joint project teams as required

Work item	Title	Priority H-high M-medium L-low	Next milestone	Start Date	End Date	Status P-planned O-ongoing C-completed S-Superseded	Contact Person(s)	Related Pubs / Standard	Remarks
F.2	Liaise with non-IHO constituents, e.g. IALA E-nav Committee, IEHC, JCOMM Expert Teams, DGIWG, ISO, marine navigation and GIS industry, etc.	H		2004	Permanent	O	Barrie Greenslade (UKHO)		
G.1	Maintain the S-100 section of the IHO website	H		2003	Permanent	O	Jeff Wooton (AHS)		

Meetings (Task H)

Date	Location	Activity
31 Mar-4 Apr 2014	Sydney, Australia	TSMAD-28 / DIPWG 6
2015 (TBD)	TBD	S-100WG-1
2016 (TBD)	TBD	S-100WG-2

Chair: TBD Email:
Vice Chair: TBD Email:
Secretary: TBD Email:

NIPWG WORK PLAN 2015-16

Objective

e) To develop and maintain guidance and specifications for the provision to shipboard users of the necessary and up-to-date information in a timely manner to plan a safe route for the intended voyage and safeguard the ship's navigation throughout the voyage;

f) To support the development and maintenance of related specifications in liaison with the relevant IHO bodies and non-IHO entities;

g) To monitor the evolution of the requirements and regulations of marine navigation.

h) To develop and maintain the IHO publications for which it is responsible.

Tasks[3]

~~A~~	~~Maintain Publication S-4 "Chart Specifications of the IHO & Regulations of the IHO for INT Charts" (IHO Task 2.3.2.1)~~
~~B~~	~~Maintain S-4 supplementary publications INT 1, 2 & 3 (IHO Tasks 2.3.2.2, 2.3.2.3, 2.3.2.4)~~
~~C~~	~~Maintain Publication S-11 Part A "Guidance for the Preparation and Maintenance of INT Chart schemes" (IHO Task 2.3.2.5)~~
D	Maintain Publication S-12 "Standardization of List of Lights and Fog Signals" (IHO Task 2.6.3.2)
E	Maintain Publication S-49 "Recommendations concerning Mariners' Routeing Guides" (IHO Task 2.3.2.7)
F	Establish and monitor, in liaison with the S-100WG, the project teams required to specify and develop nautical information layers for use in ECDIS (IHO Task 2.6.2)
G	Develop high level specifications for a combined Marine Service Portfolio (MSP) covering the provision of hydrographic services to mariners in accordance with the IMO e-navigation strategy implementation plan
H	Develop a test and implementation plan for the development of the MSP "hydrographic services"
I	Maintain IHO Resolutions in M-3 relating to ~~Nautical Charts and~~ Nautical Publications as required (IHO Task 2.6.3.1)
J	Liaise with other HSSC WGs and other IHO and international bodies
K	Conduct the 2015 and 2016 meetings of the NIPWG and its sub-group(s) and project team(s) (IHO Tasks 2.3.1 and 2.6.1)

[3] The underlined and strikethrough texts reflect the proposed interim continuation of the CSPCWG during step 1.

Work item[4]	Title	Priority H-high M-medium L-low	Next Milestone	Start Date	End Date	Status P-Planned O-Ongoing C-Completed S-superseded	Contact Person(s)	Related Pubs / Standard	Remarks
~~A.1~~	~~Monitor and assess proposals for amending S-4~~	~~H~~			~~Permanent~~	~~O~~			
~~A.2~~	~~Investigate enhancing the appearance of traditional chart symbols for use in multi-layered integrated systems~~	~~M~~		~~2009~~	~~-~~	~~P~~	~~Colby Harmon~~	~~S-4 S-52~~	
~~B.1~~	~~Plan and monitor the next editions of official INT 1s~~	~~M~~		~~2013~~	~~2015?~~	~~O~~	~~DE: S Spohn FR: S Guillou ES: A Guitart~~	~~INT 1~~	~~English version 2011 (Ed 7) French version 2012 (Ed 5) Spanish version 2011 (Ed 4) Consider the articulation with a repertory of ENC symbols~~
~~B.2~~	~~Symbols for vacant entries in INT 1~~	~~L~~		~~2014~~		~~P~~	~~Sec NICWG~~	~~INT 1, S-4 part B~~	~~Consider subsuming into B.3~~
~~B.3~~	~~Monitor the reorganization of INT 1 to exclude composite symbols~~	~~L~~	~~Next round of NEs of INT1? Discuss at CSPCWG10 (11.2)~~	~~2013~~	~~2015?~~	~~O~~	~~INT1 sub-WG~~	~~INT1~~	~~CSPCWG9 Action 31~~
~~C.1~~	~~Monitor and assess proposals for amending S-11~~	~~H~~			~~Permanent~~	~~O~~			
~~C.2~~	~~Provide advice to ICCWGs, RHCs and Member States as required~~	~~H~~			~~Permanent~~	~~O~~			

[4] The underlined and strikethrough texts reflect the proposed interim continuation of the CSPCWG during step 1.

Work item[4]	Title	Priority H-high M-medium L-low	Next Milestone	Start Date	End Date	Status P-Planned O-Ongoing C-Completed S-superseded	Contact Person(s)	Related Pubs / Standard	Remarks
D.1	Monitor and assess proposals for amending S-12	M			Permanent				In close liaison with IALA; see J.4
F.1	Assess the progress and perspectives of developing specifications for NP data layers in ECDIS and propose the way forward for consideration by HSSC	H							To be considered in the context of the IMO e-navigation strategy implementation plan (subject to the outcome of NCSR 1). NIPWG to consider establishing one or more project team(s) in liaison with S-100WG as required (see J.2), in particular to continue the development of Product Specifications currently assigned to the SNPWG.
G.1	Monitor the requirements for and provision of nautical chart data and nautical information in e-navigation test-beds	M							
G.2	Initiate consideration of the architecture of the MSP "hydrographic services"	M		2013		P	Chair NIPWG		To be considered in the context of the IMO e-navigation strategy implementation plan (subject to the outcome of NCSR 1) .
G.3	Contribute to ~~C~~considering the future of paper charts in the perspective of the establishment of MSPs	M		2014					

Work item[4]	Title	Priority H-high M-medium L-low	Next Milestone	Start Date	End Date	Status P-Planned O-Ongoing C-Completed S-superseded	Contact Person(s)	Related Pubs / Standard	Remarks
I.1	Maintain and extend resolutions in M-3 relating to ~~Nautical Charts and~~ Nautical Publications	M		2012	Permanent	O	Chair/Sec NIPWG	M-3	
J.0	Liaise with the CSPCWG				Permanent until step2	O	Chair/Sec NIPWG		Establish joint project teams as required
J.1	Liaise with the ENCWG	H			Permanent	O	Chair/Sec NIPWG		
J.2	Liaise with the S-100WG	H			Permanent	O	Chair/Sec NIPWG		Establish joint project teams as required
J.3	Liaise with other HSSC WG	H		2004	Permanent	O	Chair/Sec NIPWG		Including DPSWG, DQWG, TWCWG, etc.
J.4	Liaise with IALA e-Nav Committee	H		2013	Permanent	O	Chair/Sec NIPWG		As advised by HSSC4 (in liaison with S-100WG).

Meetings (Task K)

Date	Location	Activity
7-11 Apr 2014	Rostock, Germany	SNPWG 17
1-4 Dec 2014	Cadiz, Spain	SNPWG 18
2015 (TBD)	TBD	NIPWG-1
2016 (TBD)	TBD	NIPWG-2

Chair: TBD Email:
Vice Chair: TBD Email:
Secretary: TBD Email:

ENCWG WORK PLAN 2015-16

Objective

To maintain IHO standards which apply to ENC production and display:

(vii) S-52 - Specifications for Chart Content and Display Aspects of ECDIS (including its components);

(viii) S-57 - IHO Transfer Standard for Digital Hydrographic Data (including is components);

(ix) S-58 - Recommended ENC Validation Checks;

(x) S-64 - IHO Test Data Sets for ECDIS.

(xi) S-65 - ENCs: Production, Maintenance and Distribution Guidance

Tasks

A	Maintain S-52 “Specifications for Chart Content and Display Aspects of ECDIS” and its associated “Presentation Library” (IHO Task 2.3.2)
B	Maintain S-57 “IHO Transfer Standard for Digital Hydrographic Data” (IHO Task 2.2.2)
C	Maintain S-58 “Recommended ENC validation checks” (IHO Task 2.2.2)
D	Maintain S-61 “Product Specification for Raster Navigational Charts” (IHO Task 2.2.2)
E	Maintain S-64 “IHO Test Data Sets for ECDIS” (IHO Task 2.2.2)
F	Maintain S-65 “ENC Production, Maintenance and Distribution Guidance” (IHO Task 2.2.2)
G	Assess the impact of other IHO standards on S-52 display specifications
H	Liaise with the NIPWG (IHO Task 2.3.2)
I	Maintain the ENC production and portrayal sections of the IHO website (IHO Task 2.2.2 & 2.3.2)
J	Conduct the 2015 and 2016 meetings of ENCWG] and its sub-group(s) and project team(s) (IHO Task 2.2.1)

Work item	Title	Priority H-high M-medium L-low	Next milestone	Start Date	End Date	Status P-planned O-ongoing C-completed S-Superseded	Contact Person(s)	Related Pubs / Standard	Remarks
A.1	Resolve any problems or errors identified in the current editions of S-52 and its Presentation Library	H		2009	Permanent	O	Colby Harmon Tom Mellor	S-52	
B.1	Resolve any problems or errors identified in the current edition of S-57	H		2011		O			
C.1	Monitor the implementation of the new edition of S-58	H							
C.2	Resolve any problems or errors identified in the current edition of S-58	H		2003	Permanent	O	Richard Fowle (UKHO)		
E.1	Resolve any problems or errors identified in the current edition of S-64	H							
F.1	Monitor and assess proposals for amending S-65	H			Permanent				
H.1	Liaise with the NIPWG	H							
I.1	Maintain the ENC production and portrayal sections of the IHO website	H		2003	Permanent	O	Jeff Wooton Barrie Greenslade Colby Harmon ADCS		Include posting EBs and PBs

Meetings (Task J)

Date	**Location**	**Activity**
31 Mar-4 Apr 2014	Sydney, Australia	TSMAD-28 & DIPWG-6
2015 (TBD)	TBD	ENCWG-1
2016 (TBD)	TBD	ENCWG-2

Chair: TBD Email:
Vice Chair: TBD Email:
Secretary: TBD Email:

TWCWG WORK PLAN 2015-16

Objective

d) To provide technical advice and coordination on matters related to tides, water levels, currents and vertical datum.

e) To support the development and maintenance of related specifications in liaison with the relevant IHO bodies and non-IHO entities;

f) To develop and maintain the IHO publications for which it is responsible.

Tasks

A	Maintain the list of standard tidal constituents (IHO Task 2.7.2.3)
B	Develop and maintain a standard for digital tide tables (IHO Task 2.7.3)
C	Prepare and maintain an inventory of tide gauges used by Member States and publish it on the IHO/TWLWG web site (IHO Task 2.7.2.4)
D	Compare the tidal predictions generated as a result of analysis of a common data set using different analysis software
E	Review feedback of on-line real time water level observation document
F	Develop and maintain a standard for the transmission of real-time tidal data (IHO Task 2.7.4)
G	Develop and maintain a product specification for the transmission of real-time surface current data (S-111 - IHO Task 2.13.3)
H	Develop and maintain a product specification for dynamic application of navigationally significant surface currents in ECDIS (IHO Task 2.13.4)
I	Develop and maintain a product specification for dynamic application of tides in ECDIS (IHO Task 2.7.5)
J	Liaise with industry experts on the development of product specifications for tides and currents (IHO Tasks 2.7.2 and 2.13.2)
K	Liaise with S-100WG on tidal and current matters relevant to ECDIS and GIS applications (IHO Tasks 2.7.4, 2.7.5, 2.13.3 and 2.13.4)
L	Maintain IHO Resolutions in M-3 relating to tides, water levels and currents as required (IHO Tasks 2.7.2.1 and 2.13.2.1)
M	Develop and maintain material for course on tides and tidal streams
N	Conduct the 2015 and 2016 meetings of TWCWG and its sub-group(s) and project team(s) (IHO Tasks 2.7.1 and 2.13.1)

Work item	Title	Priority H-high M-medium L-low	Next milestone	Start Date	End Date	Status P-planned O-ongoing C-completed S-Superseded	Contact Person(s)	Related Pubs / Standard	Remarks
A.1	Maintain the list of standard tidal constituents	M		-	Permanent	O	Chris Jones*		
A.2	Compare the tidal predictions generated as a result of analysis of a common data set using different analysis software.	H				O	Stephen Gill* All		Select Common data set Analyze using different software Predict common set of tides Compare results
C.1	Maintain an inventory of tide gauges used by Member States and publish it on the IHO/TWCWG web site.	H		-	Permanent	O	David Wyatt* All		Initial inventory from TWCWG members available on IHO web site.
F.1	Develop and maintain a standard for the transmission of real-time tidal data	H				O	Chris Jones* All		Liaise with S-100WG (see K.1)
G.1	Develop and maintain a product specification for the transmission of real-time surface current data (S-111)	H							Liaise with S-100WG (see K.1)
H.1	Develop and maintain a product specification for dynamic application of navigationally significant surface currents in ECDIS	H							Liaise with S-100WG (see K.1)

Work item	Title	Priority H-high M-medium L-low	Next milestone	Start Date	End Date	Status P-planned O-ongoing C-completed S-Superseded	Contact Person(s)	Related Pubs / Standard	Remarks
I.1	Develop and maintain a product specification for dynamic application of tides in ECDIS	H	Prepare draft Product Specifications (S-1**) for tidal data in S-100. Prepare draft portrayal model for tidal data in S-100.			O	Zarina Jayaswal* Glen Rowe Bill Mitchell Kwang-nam Han Stephen Gill* Bill Mitchell Zarina Jayaswal		Liaise with S-100WG (see K.1)
J.1	Liaise with industry experts on the development of product specifications for tides and currents	H				O	All		
K.1	Liaise with S-100WG on tidal and current matters relevant to ECDIS applications	H				O	Gwenaële Jan Kurt Hess		Establish joint project teams as required.
M.1	Develop and maintain material for course on tides and tidal streams	H	Adapt currently available course material to create a course suitable for delivery in support of CBSC requests.	2013	2015	O	Stephen Gill* Bill Mitchell Ruth Farre		

Meetings (Task N)

Date	Location	Activity
25-28 Mar 2014	Wollongong, Australia	TWLWG-6
3-5 Jun 2014	Quebec City, Canada	SCWG-2
2015 (TBD)	TBD	TWCWG-1
2016 (TBD)	TBD	TWCWG-2

Chair: TBD Email:
Vice Chair: TBD Email:
Secretary: TBD Email:

[Project Team] WORK PLAN 2015-16

Objective

a) To …

b) To …

Tasks

A	
B	
C	
D	

Work item	**Title**	**Priority** H-high M-medium L-low	**Next milestone**	**Start Date**	**End Date**	**Status** P-planned O-ongoing C-completed S-Superseded	**Contact Person(s)**	**Related Pubs / Standard**	**Remarks**

Meetings (Task ??)

Date	**Location**	**Activity**

Chair: TBD Email:
Vice Chair: TBD Email:
Secretary: TBD Email: