7TH MEETING OF THE HYDROGRAPHIC SERVICES AND STANDARDS COMMITTEE
(HSSC-7)
Busan, Republic of Korea, 10-13 November 2015

FINAL MINUTES

Notes: 1) *The numbering of sections is the same as in the agenda, although the order of taking the items was not exactly followed.*
2) *The actions are listed in Annex C only. When reading the text in the main part of the report, click on the hyperlink to view the associated action if any. Then, when in Annex C, press* <mark>ALT+ left arrow</mark> *on your keyboard to get back to the original section in the main part of the report.*
3) *All documents referred to in these report are available and "hyperlinked" to the HSSC page of the IHO website (www.iho.int > Committees & WGs > HSSC > HSSC-7).*

Annexes: A   *New and revised Terms of Reference (NCWG, TWCWG, H2S Project Team, UKMC Project Team)*
B   *Report of the IHO Stakeholders' Open Session*
C   *List of Actions arising from HSSC-7*

The seventh meeting of the Hydrographic Services and Standards Committee (HSSC) took place in Busan, Republic of Korea, hosted by the Korea Hydrographic and Oceanographic Agency (KHOA), from 10 to 13 November 2015. Mr Hyun Jung, Director of the Nautical Chart Division, welcomed the delegates on behalf of Mr Jae-hyung Ryoo, Director General of KHOA, who could not be present due to unforeseen circumstances.

1. OPENING AND ADMINISTRATIVE ARRANGEMENTS

Docs: HSSC7-01A   *List of Documents (IHB)*
HSSC7-01B   *List of Participants (IHB)*
HSSC7-01C   *HSSC – List of Contacts (IHB)*
HSSC7-01D   *TORs for HSSC and related Working Groups[1] (IHB)*

The Chair, Dr Mathias Jonas (Germany), opened the meeting and welcomed the participants to the meeting. He noted that there were almost 60 delegates from Member States, RENCs, stakeholder organizations and academia, and pointed out that this high level of participation demonstrated the interest of a very large community in the activities of the HSSC.

The Chair welcomed the participation of a representative from Belgium for the first time and reported on the apologies received from the Vice-Chair, the Russian Federation and the Democratic Republic of the Congo which were acknowledged.

He reminded the attendance that several changes to the HSSC's working group structure had been implemented since 2014 and invited the members to provide their comments on the efficiency of the new arrangements in case there was a need for adjustments or for creating new project teams. He finally reminded the participants that 2015 marked the 10th anniversary of the initiation of the IHO S-100 concept development, an important milestone in view of the upcoming deployment of S-100 based-products.

---

[1] As at 10 November 2015. See Annex A for revised version of TORs for NCWG and TWCWG.

The Chair referred to the list of documents and reminded the presenters that they should assume that all the participants had read the documents submitted in advance. The Secretary (IHB) highlighted the importance of maintaining the list of contacts current in order to facilitate inter-sessional correspondences.

Outcome:
- The Committee noted the administrative arrangements and the related documents.

→**Action HSSC7/01**

2. APPROVAL OF AGENDA AND TIMETABLE

*Doc: HSSC7-02A **Rev3***   *Agenda and Timetable* *(IHB)*

As agreed at the previous HSSC meeting, the Chair confirmed that a half-day IHO Stakeholders' Open Session was included in the agenda and planned on 12 November, with a focus on new survey techniques, crowd-sourced bathymetry and on issues related to the development and implementation of the S-100 framework.

With regards to the agenda of the HSSC meeting proper, it was agreed that it would be more appropriate to address Doc. HSSC7-05.1C - *Requirements relating to sector lights for Electronic Navigational Chart (ENC) Product Specifications* under the ENC Standards Maintenance agenda item. The assignment of the information papers under the relevant agenda items was approved. The Chair indicated that all the inputs related to the International Maritime Organization (IMO) would be collated under agenda item 7.2.

Outcome:
- The Committee approved the agenda.

3. MATTERS ARISING FROM DRAFT REPORT OF 6th HSSC MEETING

Docs: HSSC7-03A   Final minutes of HSSC6 (IHB)
HSSC7-03B   Status of Actions List from HSSC6 (IHB)
HSSC7-03C   Consideration of the need to establish a Hydrographic Surveys Working Group (IHB) - Presentation

3.A   Minutes of the 6th HSSC Meeting

The Chair noted that the minutes of HSSC-6 had been agreed as reported in IHO Circular Letter (CL) No 07/2015 and were included in the list of documents for ease of reference only.

3.B   List of Actions from the 6th HSSC Meeting and Status

The Secretary (IHB) reported that all of the actions but one had been either completed or would be addressed under the relevant agenda items.

Outcome:
 - The Committee noted the report and agreed that all pending actions would be reviewed under the appropriate agenda items.

3.C   Consideration of the need to establish a Hydrographic Surveys Working Group (IHB)

Following Action HSSC6/11 related to the establishment of a Hydrographic Survey Working Group, the Secretary (IHB) reported on the responses to the consultation of IHO Member States through IHO CL 25/2015 and on the feedback from industry obtained during Shallow Survey 2015 in September 2015.

The Committee was invited to consider the outcome of the review by the HSSC Chair Group of the options presented by the IHB in Doc. HSSC7-03C and agreed that "do nothing" was not an option. Germany supported the establishment of a project team under the DQWG. UK and the DQWG Chair, as well as Finland, did not favour the proposal to expand the scope of the DQWG. Singapore, supported by Australia, Brazil, Canada, Ecuador and USA, favoured the establishment of a working group that Brazil volunteered to lead. India suggested establishing an informal working group to elaborate the way forward.

A drafting group (Australia, Brazil, Canada, Finland, India, Singapore, UK, USA and IHB) was established and reported back to the meeting with the draft Terms of Reference (TOR) of a new project team that would be tasked, for one year, to clarify the scope and the deliverables expected from a new hydrographic survey working group if and when established. The Committee approved the draft TOR (see Annex A, H2S Project Team), requesting the project team to present its recommendations at HSSC-8.

> **Outcome**:
> - The Committee noted the report and established a Project Team on Hydrographic Surveys Scoping under the terms of reference in Annex A which will scope out the requirements and report back to the HSSC-8 meeting.
>
> →**Actions: HSSC7/02, HSSC7/03**

4.   HSSC ADMINISTRATION

4.1   Implementation of Programme Performance Indicators

Doc: HSSC7-04.1A   Programme Performance Indicators for HSSC (IHB) - Presentation

The IHB provided some background information on the collation of relevant data for Performance Indicators (PIs) and on the implementation of the additional reporting procedure established by the 5th Extraordinary International Hydrographic Conference (EIHC-5).

The IHB noted that the next Conference/Assembly in 2017 would include a review of the IHO Strategic Plan in which the relevance of current PIs would be assessed.   The next Conference/Assembly would be also invited to adopt the IHO Work Programme for the following 3-year (or 5-year) cycle which would include the IHO Programme 2, the draft of which being submitted by the HSSC. The IHB drew the attention of the Committee on the timelines for the preparation of the documents related to the next Conference/Assembly in order for the Committee to consider the appropriate phasing with HSSC-8.

The HSSC Chair noted that the performance indicators did not reflect the significant progress in developing S-100 based product specifications.

The NIPWG Chair questioned the relevance of the six-monthly reporting regime noting the limited feedback from the Member States. The IHB noted that the proposed budget for 2016 took into account the difficulties identified in the reports and that its approval should be facilitated by the previous circulation of the reports.

Although USA expressed concern about the extra cost associated with an additional meeting of the Chair Group in 2016, the Committee agreed to delegate to the Chair Group the development of the Committee's contribution to the preparation of the next Conference/Assembly.

> **Outcome**:
> **-** The Committee noted the report and agreed on the arrangements for the preparation of the next IHC/Assembly.
>
> → **Actions HSSC7/04, HSSC7/05**

5.	REPORTS BY HSSC WORKING GROUPS

5.1	S-100 (S-100WG)

Docs: HSSC7-05.1A   *Report and Recommendations of S-100WG* (S-100WG Chair) - *Presentation*

HSSC7-05.1B   *Report on S-100 Registry Management and Way Forward* (S-100WG Chair/UK/IHB) - *Presentation*

HSSC7-05.1D   *Development of an S-100-Based Product Specification for Under Keel Clearance Management Information* (AU) - *Presentation*

HSSC7-05.1E   *Comment on the report of the S-100 WG* (IHB)

HSSC7-05.1F INF4   *Development of an S-100 Product Specification for Undersea Feature Names and Registering SCUFN terms in the IHO GI Registry* (Doc. SCUFN28-06B)

HSSC7-05.1G INF8   *Extending S-100 to Non-navigational Marine Applications* (CA)

The S-100WG Chair reported on the S-100WG activities and achievements since the last meeting, noting the publication of the Ed. 2.0.0 of S-100 - *IHO Universal Hydrographic Data Model* and the plan to prepare Ed. 3.0.0 in the 2016-17 timeframe. The Committee acknowledged the support that the working group had received and welcomed the progress in implementing the test strategy. The Committee endorsed the revised Edition 1.1 of the S-100 Master Plan, further upgrades of the S-100 Registry and urged the IHO Member States to strengthen their support to the S-100WG and the associated project teams in order to meet the milestones of the work plan.

Having considered the priorities and the available resources, the Committee agreed on the changes to the work items proposed by the S-100WG Chair. The establishment of a project management website called "Basecamp" to coordinate more efficiently the development of S-100 based product specifications between the S-100WG and other IHO working groups and project teams was duly noted.

Considering the resources available, the S-100WG Chair stressed the importance that the working group remained focused on the development of an S-100 interoperability specification for use in navigation systems (ECDIS), including the consideration of issues related to the S-100 portrayal component.

The lack of resources was identified as the cause for postponing the preparation of changes to the S-100 GI Registry and S-99 - *Operational Procedures for the Organization and Management of the S-100 Geospatial Information Registry*.

Fruitful discussions took place on the relationship with the IMO in terms of timelines for the acceptance of new S-100 based standards and it was finally agreed to re-consider these issues under the IMO agenda item (7.2).

With regards to the management of the S-100 Registry, the IHB confirmed that this priority had been clearly identified in the preparation of the IHO Budget for 2016, and that the approval of IHO Member States for allocating a position through a permanent IHB staff member was requested in the IHO CL 74/2015. Meanwhile, it was expected that a new interface should be available in 2016 and that Miss Su Marks (UKHO) would continue her role as interim Registry Manager. The Committee noted the concerns about the appropriate harmonization of different domains of the Feature Concept Dictionaries and invited submissions to the next meeting of the S-100WG.

Australia informed the meeting that under keel clearance (UKC) systems were increasingly being used around the world in ports and by vessels themselves when sailing in waterways. Australia recommended that a UKC Project Team be established under the S-100WG to coordinate the development of a draft product specification for the display of UKC management information. Following interesting debates on the very nature of UKC information (product vs service), and on the relationship with many "external" parameters (ship dynamic characteristics, sea state, etc.), a drafting group (Australia, Canada, Singapore, USA, Transas, and IHB) was established. The drafting group reported back to the meeting with the draft TORs of a new project team and the associated work plan. The Committee endorsed the proposal (see Annex A, UKCM Project Team).

The IHB informed the Committee on a proposal made at the 28th meeting of the IHO-IOC GEBCO Sub-committee on undersea feature names (SCUFN) to consider the development of a product specification for undersea features and the harmonization of definitions. Canada accepted to take the lead on this action which would be reported at the 29th meeting of SCUFN, then to HSSC.

The Committee noted that Doc HSSC7-05.1G INF8 - *Extending S-100 to Non-navigational Marine Applications* should be submitted to the S-100 WG.

Outcome:
- The Committee noted the report of the S-100WG and acknowledged the significant support provided by Canada, Republic of Korea (ROK), USA, and by industry (Caris, Esri, Jeppesen).

- The Committee endorsed the revised draft edition 1.1 of the S-100 Master Plan, noting that the chapter on "Impact on / interaction with stakeholders" would need to be further developed at a later stage.

- The Committee endorsed the continuation of the activities of the working group, according to the work plan finalized under agenda item 10 and urged the working group to make its best effort to meet the associated milestones, subject to the IHO Member States strengthening their support to the working group.

→ **Action HSSC7/06**

- The Committee noted the report on the Registry and commended the efforts of UK and USA for managing the current S-100 GI Registry and ROK for updating the Registry infrastructure and noted the concerns related to the harmonization of different domains of the Feature Concept Dictionaries.

- The Committee welcomed the proposal to recruit a permanent Registry manager as part of the proposed IHO Budget for 2016.

→ **Actions HSSC7/07, HSSC/08**

- The Committee noted the report on Under Keel Clearance Management (UKCM) and established a Project Team reporting to the S-100WG under the TORs in Annex A.

→ **Actions HSSC7/09, HSSC7/10**

- The Committee noted Doc. HSSC7-05.1F INF4 and referred Doc. HSSC7-05.1G INF8 to the S-100WG.

5.2 Data Protection Scheme (DPSWG)

Doc: *HSSC7-05.2A* *Report and Recommendations of DPSWG* (UK) - *Presentation*

The DPSWG Chair presented the report and recommendations of the working group. He reported that S-63 Edition 1.2.0, which was now a normative standard supporting the latest edition of IEC61174, had been published. This edition included a new annex defining the ECDIS update status report.

The DPSWG Chair reported also that the extension of S-63 to non navigational products and to S-100-based products would be considered when developing Edition 2.0.0 of S-63. The Committee noted that there was no intention to embed S-63 in S-100. S-63 would remain a separate standard and its relation with S-100 would be similar to the relation between S-99 and S-100.

After consulting the RENCs and taking their suggestions into account, it was agreed that there was no major drawback from now on, to letting the remaining users continue using S-63 Ed. 1.0 until their legacy systems were removed or replaced.

Outcome:
- The Committee noted the report of the DPSWG and endorsed the continuation of its activities according to the work plan finalized under agenda item10.

→ **Action HSSC7/25**

- The Committee agreed to discontinue the monitoring of the transition from S-63 Ed. 1.0 to Ed. 1.1 and that no further action was required.

5.3 ENC Standards Maintenance (ENCWG)

Doc: *HSSC7-05.3A* *Report and Recommendations of ENCWG* (ENCWG Chair) - *Presentation*
HSSC7-05.1C *Requirements relating to sector lights for Electronic Navigational Chart (ENC) Product Specifications* (NO/NCA) - *Presentation*

The ENCWG Chair presented the report and recommendations of the working group. He reported that new editions of S-52 and S-64 had been published in October 2014 to give OEMs a period of time to implement the new Presentation Library prior to the publication of Ed. 4 of IEC 61174. As a result of their implementation, a number of issues that require corrections or clarifications, had been identified and would be considered by the ENCWG. A number of clarifications to the S-52 Presentation Library and S-64 had been presented to the last joint TSMAD/DIPWG meeting in February 2015 and would lead to minor adjustments of the ECDIS Presentation Library as required. These "clarifications" would be identified as Edition 4.0(.x) - October 2014.

The ENCWG Chair reported that a new draft edition of S-58 had been compiled and circulated within the working group for comment. It was anticipated that a final draft would be discussed and approved at the next ENCWG meeting in March 2016. The formal approval process of the new edition by the IHO Member States, through the HSSC, would then be carried out by correspondence.

The Committee noted the feedback from industry on the implementation of the revised set of ECDIS standards and agreed to consider postponing the withdrawal of the previous editions, currently planned to occur on 31 August 2016 in accordance with the timeline reported to the IMO. CIRM indicated its intention to consult its members before proposing a new timeline for the implementation of the revised standards. In addition, it was agreed that the revision of the timeline needed a co-ordinated approach in liaison with CIRM and IEC before any information is provided to the IMO at NCSR-3.

The presentation made by the Norwegian Coastal Administration on the portrayal of the length of sector lights highlighted inconsistencies in the publications describing how sector light were documented in the relevant IHO, IMO and IALA publications and proposed that these issues should be addressed in the IHO S-101 ENC Product Specification and IALA S-201 Aid to Navigation Information Product Specification. This presentation raised a couple of issues beyond the very question of sector lights, such as the inter-relation between product specifications developed by IALA and the IHO.

Outcome:
- The Committee noted the report of the ENCWG and endorsed the continuation of its activities according to the work plan finalized under agenda item10.

→ **Action HSSC7/11**

- The Committee agreed to process the endorsement of S-58 Ed. 5.1 by correspondence.

→**Actions HSSC7/12, HSSC7/13**

- The Committee noted the feedback from the industry on the implementation of the new editions of S-52 and its Presentation Library, and agreed to review the timeline reported to IMO.

→ **Action HSSC7/14**

- The Committee noted the report on the portrayal of sector lights and agreed on the principle that portrayal of sector lights on paper charts and ENCs should be harmonized. The Committee reflected in the work plan of the S-100WG the need to clarify the relations between IALA and IHO product specifications.

→ **Action HSSC7/15**

5.4   Revision of S-66

Doc: HSSC7-05.4A   Report of HSSC Project Team on S-66 (Project Team Leader) - Presentation

The report was presented by IC-ENC on behalf of the Chair of the S-66 Project Team. IC-ENC reported on the lack of resources that prevented the Project Team from completing Stage 1 of the revision of the Publication S-66 within the relevant timeframe.

The IHB (as Project Team Member) confirmed that the new MSC.1/Circ.1503 - *ECDIS - Guidance for good practice* – which replaced five IMO circulars, had been considered in the revision of S-66 and indicated that, in his opinion, there was not that much remaining work to carry out. The Committee instructed the ENCWG to oversee the Project Team.

Outcome:
- The Committee noted the presentation of the S-66 Project Team and instructed the ENCWG to implement the timeline of the revised work plan.

- The Committee agreed to process the endorsement of S-66 Ed. 2.0 by correspondence.

→**Actions HSSC7/16, HSSC7/17**

5.5   Nautical Information Provision (NIPWG)

Docs: HSSC7-05.5A   Report and Recommendations of NIPWG (NIPWG Chair) - Presentation
*   HSSC7-05.5B   Proposal for the creation of a Project Team on the Portrayal of Marine Protected Areas (NIPWG Chair)*
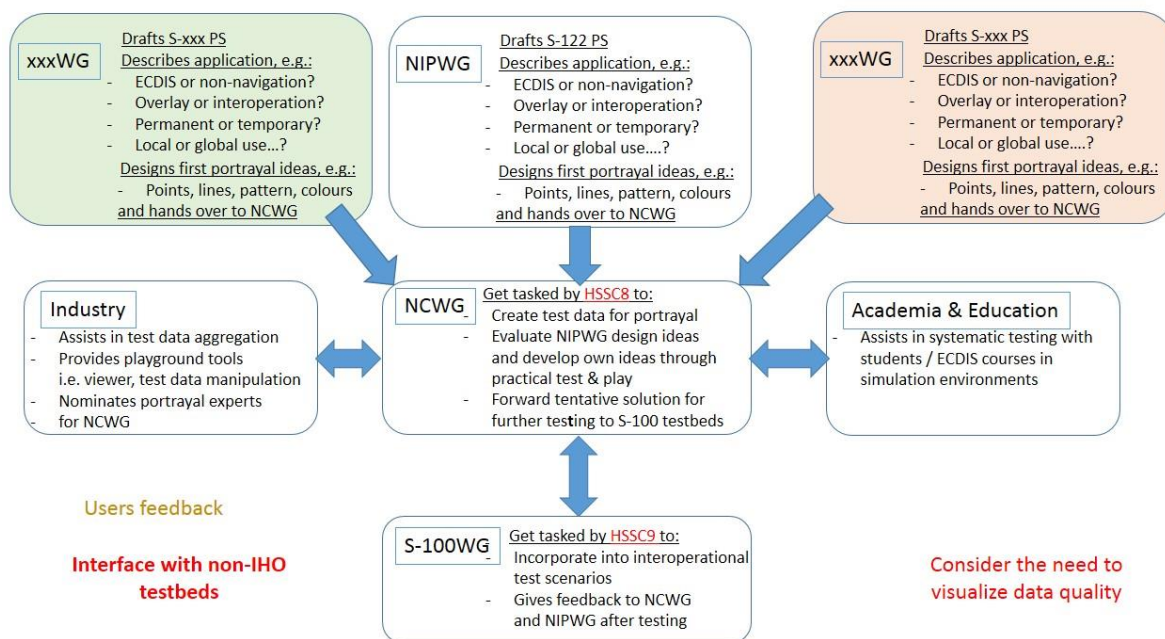
The NIPWG Chair presented the report and recommendations of the working group, acknowledging the support from the Member States and from industry.

The NIPWG Chair reported that as a result of an extensive modelling work for product specifications, the NIPWG was now in a position to start listing its feature concepts in the Registry. He reported also on some harmonisation issues which needed to be resolved with the S-101 Data Classification and Encoding Guide.

As reported to HSSC-6, the NIPWG Chair noted again that the replacement of printed paper publications with future NPUB products would require developing a strategy and considering the impact on IMO performance standards and IEC related standards, in relation with carriage requirements.

The HSSC Chair agreed that NIPWG was dependent on other HSSC working groups such as the NCWG, the DQWG and the S100WG for addressing portrayal issues. However, noting the current limited expertise in the IHO concerning the portrayal of features in an S-100 based environment, these groups were invited to make the best possible use of existing test bed opportunities/projects. This would also value the various test data sets already produced by NIPWG along with the product specifications, such as S-122 for Marine Protected Areas. CIRM confirmed the support of industry to provide samples and test datasets for cartographers to look at, to provide equipment for data visualization, but also stressed the fact that it would be inappropriate for industry to develop the portrayal standards.

Based on several suggestions and discussions, a process for addressing portrayal issues was outlined as depicted in the figure below:

The HSSC Chair invited NIPWG and NCWG to consider the proposed diagram / capability and report back to the next meeting, agreeing with CIRM's comment that the diagram should provide guidance, but not impose limitations on the portrayal development.

In addition, the NIPWG Chair confirmed the need for developing unique identifiers for navigational use and the close relationship established with IALA on this matter. A new proposal for unique identifiers, currently under development by IALA, would be considered by the relevant HSSC working groups when available.

USA, noting that the NIPWG work had increased substantially, suggested that the group should be taking better advantage of the project team structure to get a better cross section of expertise and speed up the development of S-1xx product specifications.

> **Outcome:**
> - The Committee noted the NIPWG report and endorsed the continuation of its activities according to the work plan finalized under agenda item10.
>
> - The Committee considered establishing a project team to complete the S-122 portrayal and, noting the current limited IHO expertise on portrayal, tasked the NCWG and NIPWG to investigate further portrayal issues.
>
> →**Actions HSSC7/18, HSSC7/19, HSSC7/20**
>
> - The Committee allocated the identifier S-128 to the proposed new product specification for catalogues of nautical products.

5.6   Nautical Cartography (NCWG)

Docs: HSSC7-05.6A Rev2   *Report and Recommendations of NCWG (NCWG Chair) -
                                               Presentation*
             HSSC7-05.6B   *WENDWG Interim Report on AIO (IHB)*
             HSSC7-05.6C   *AIO and P/T updates in ENC (SE) - Presentation*
             HSSC7-5.6D Rev 1   *Revisions to S-4 for Edition 4.6.0 (NCWG Chair)*
             HSSC7-5.6E   *S-11 Part A NSEHWG/WENDWG/NCWG Draft Document and
                                               Comments from Chile (NCWG Chair)*
             HSSC7-05.6F   *The Future of S-4 as the IHO Chart Specification (NCWG Chair)*
             HSSC7-05.6G   *Comments on the report of the NCWG (IHB)*

The NCWG Chair presented the report and recommendations of the working group.

The Committee endorsed the proposed changes to Edition 4.5.0 of S-4 - *Regulations for International (INT) Charts and Chart Specifications of the IHO* - and tasked the NCWG to finalize the draft new Edition 4.6.0 and forward it to the IHB which would then circulate it to IHO Member States for their consideration and approval.

Dealing with the transition from CSPCWG to NCWG, the NCWG Chair highlighted some concerns on the full applicability to S-4 of the IHO Resolution 2/2007 as amended. It was finally agreed that this issue would be considered when the HSSC Chair Group would prepare its inputs to the next IHC/Assembly.

The NCWG Chair also reported that this group had a large number of participants, and that cross domain support to the NCWG was ensured with the S-100WG, ENCWG, NIPWG and HDWG, mainly through the NCWG Chair himself.

The IHB proposed that the HSSC should instruct the NCWG to limit its future work on S-4 to clarifications, when required by chart producers or mariners, and to postpone further revisions until the proposed scoping study of the future of S-4 is concluded. The NCWG Chair indicated that most of the work carried out by this group was driven by IHO Member States' requests and that there was probably a misconception by HSSC that S-4 was for paper charts only: he reminded the Committee that S-4 was an important reference for ENC production as well. It was finally agreed to allocate a high priority to the work item on the future of the paper chart.

Considering the comments received from IHO Member States and Chile in particular on the development of guidance for ENC schemes, the Committee instructed the NCWG to develop a separate section on ENC schemes in the draft revision of S-11 Part A - *Guidance for the Preparation and Maintenance of International Chart Schemes*.

With regards to the Admiralty Information Overlay (AIO) service, the NCWG Chair reported on the actions taken by the group, within S-4 and in liaison with the S-101 Project Team, to address the technical aspects of consistency between nautical products and Temporary and Preliminary (T&P) updates in ENCs.

Australia, Germany, Singapore and USA considered that AIO issues should be considered on a bilateral basis under the IRCC umbrella while Sweden supported by Norway indicated the need to address it at the IHO level. The Committee agreed that the remaining policy issues reported by Sweden and the WENDWG Chair should be referred to the IRCC through the WENDWG.

A consolidated version of the new NCWG TORs was prepared during the meeting, taking into account the proposal attached to the NCWG report to HSSC and the amendments suggested by the IHB in its comment paper, and endorsed by the Committee.

Outcome:
- The Committee noted the NCWG report and agreed the revised TORs in Annex A.

- The Committee invited the NCWG to address as a high priority the work item on the future of the paper chart and endorsed the work plan finalized under agenda item10. The Committee welcomed the continuation of the liaison already established with the new working group on marine cartography of the International Cartographic Association.

→ **Action HSSC7/21**

- The Committee noted the views expressed by several IHO Member States regarding the Admiralty Information Overlay (AIO) service and referred them to the IRCC through the WENDWG for further consideration.

- The Committee considered the other documents submitted under this agenda item and decided:
      - to separate the guidance on INT schemes and ENC schemes in S-11 Part A
      - to endorse the proposed changes to S-4 Ed. 4.5.0
      - to task the S-101 Project Team to consider improved functionalities for T&Ps updates in ENCs.

→ **Actions HSSC7/22, HSSC7/23, HSSC7/24**

5.7   Data Quality (DQWG)

Doc: HSSC7-05.7A   Report and Recommendations of DQWG (DQWG Chair) - Presentation

The DQWG Chair presented the report and recommendations of the working group.

He reported that the working group had mainly concentrated on the data quality topics relating to S-101, especially issues relating to the quality of bathymetric data. He noted that workshops and contacts for educating the mariner on data quality issues had proven to be challenging. Other quality items that would have to be considered by the group included satellite derived and crowd sourced bathymetry quality issues.

The DQWG would continue to work closely with the other working groups on quality issues and it was anticipated that generic guidelines for data quality, to be used when developing product

specifications, would be soon available. As an example, the DQWG Chair presented the draft data quality UML model and welcomed comments from the other groups.

Following an analysis of CATZOC, the DQWG Chair also introduced in his presentation a new hierarchy for the quality of bathymetric data. When consolidated and documented, the hierarchy quality tree would be circulated for the consideration of HSSC, likely after the DQWG-11 meeting in May 2016. This delay was caused by the low level of resources allocated to DQWG activitiesas highlighted in the report.

Outcome:
- The Committee noted the report of the DQWG and endorsed the continuation of its activities according to the work plan finalized under agenda item10.

→ **Action HSSC7/25**

- The Committee noted the presentation of the draft data quality UML model and urged the DQWG to complete this work item in liaison with the relevant working groups (S-100WG, NCWG, NIPWG, and CSBWG).

5.8   Tides, Water Level and Currents (TWCWG)

Docs: HSSC7-05.8A Report and Recommendations of TWLWG (TWCWG Chair) - Presentation
HSSC7-05.8B Report and Recommendations of SCWG (CA) - Presentation
HSSC7-05.8C Comment on the Report of TWLWG (IHB)

France, on behalf of the TWLWG Chair, reported on the activities of the group. A set of S-100 based attributes had been developed for digital tide tables and good progress has been made with the preparation of a draft product specification for tidal information. A request was made for the allocation of a new S-1xx number for tidal height.

Canada, on behalf of the SCWG Chair, reported that good progress had been made as well with the S-111 product specification. Test-bed software developed by KHOA had been developed and was demonstrated at the last meeting. SPAWAR (USA) had conducted work on surface current rendering and visualization. Work had been carried out on the revision of the metadata and harmonization with ISO and S-100 standards and an S-111 compatible data set was to be produced for further testing and evaluation.

The amendments to the IHO Resolution 3/1919 (Datums and Bench Marks) were discussed and the suggestions made by the IHB were endorsed.

The TORs of the TWCWG were revised to reflect the completion of the restructuring of the former HSSC working groups, TWLWG and SCWG.

Outcome:
- The Committee noted the reports of the TWLWG and the SCWG and agreed the revised TORs of the TWCWG in Annex A.

- The Committee allocated the identifier "S-104" to the product specification for *Tidal Information for Surface Navigation*.

- The Committee endorsed the TWCWG work plan finalized under agenda item10.

→ **Action HSSC7/26**

- The Committee endorsed the draft revised Resolution 3/1919, subject to reflecting the IHB comments in the text to be submitted to the IHO Member States.

5.9   Hydrographic Dictionary (HDWG)

Doc: HSSC7-05.9A Rev1   *Report and Recommendations of HDWG (HDWG Chair) - Presentation*
         HSSC7-05.9B INF6   *Comments on the Report of HDWG (AU)*

On behalf of the HDWG Chair, the IHB introduced the report, noting that the presentation took also into account the comment paper submitted by Australia.

Although little progress had been made in moving forward with all of the working group's work items, achievements included the update of the Spanish version of S-32, thanks to the work achieved by a project officer seconded at the IHB by Peru. A Word version was now up to date with all the previous revisions and new definitions. This version retained the original reference numbers which would be reformatted to match both the English and Spanish Word files so the number identifier could be used to create a digital cross-reference between the different language versions.

The Committee requested the Hydrographic Dictionary Working Group to investigate options and associated resource requirements and timeline to produce and maintain a reference edition of S-32 - *Hydrographic Dictionary*. The S-100WG was tasked to specify its requirements regarding definitions included in the S-100 Registry.

Outcome:
- The Committee noted the report of the HDWG and the comments submitted by Australia and agreed the way forward as reflected in the work plan finalized under agenda item10.

- The Committee tasked the S-100WG to specify its requirements related to definitions.

→ **Action HSSC7/28**

---

6.   INTER-ORGANIZATIONAL BODIES

6.1   Advisory Board on the Law of the Sea (ABLOS)

Doc: HSSC7-06.1A Rev 1   *Status Report on ABLOS activities (ABLOS Chair) - Presentation*
         HSSC7-06.1B INF2   *IHO S-121 Maritime Limits and Boundaries (CA/AU) - Presentation*
         HSSC7-06.1C INF9   *Supporting the ISO 19152 Land Domain Administrative Model in a Marine Environment (CA)*

The Chair of ABLOS presented the report and recommendations of the Board. He informed the Committee that a number of revisions had been identified during the final review of Edition 5.0.0 of C-51 - *Manual on Technical Aspects of the UN Convention on the Law of the Sea*. This work was being progressed by an editorial board with an estimated completion date in 2016. It was expected that the draft Ed. 6.0.0 would be submitted to HSSC-8.

ABLOS was also developing a capacity building course. One capacity building seminar had been conducted in Suriname and one was planned in Cape Town, South Africa.

India noted that C-51 was an important reference document and proposed that its scope should be expanded to possibly include the best practices learned from judgments on maritime boundaries.

Canada reported that Australia and Canada had worked together in producing the draft S-121 product specification for *Maritime Limits and Boundaries*, providing a possible official digital exchange format, recognized by the United Nations, and supporting MSDI requirements.

The Committee invited Canada to submit a paper for the creation of an S-121 project team to the next S-100WG meeting and invited the members to consider the possibility of providing some support to this task. Sweden indicated its intention to participate noting the need to ensure consistency with similar activities already undertaken within the European Union through the INSPIRE Directive for administrative areas.

Outcome:

- The Committee noted the report of ABLOS and endorsed the continuation of its activities according to the work plan finalized under agenda item10.

- The Committee noted the comments of India that the wealth of judgments related to maritime boundaries should be considered for enhancing the contents of C-51.

→ **Action HSSC7/29**

- The Committee noted the documents submitted by Australia and Canada and agreed on appropriate actions related to the development and implementation of S-121 product specification for *Maritime Limits and Boundaries*.

→ **Actions HSSC7/30, HSSC7/31**

---

7. DECISIONS OF OTHER BODIES AFFECTING HSSC

7.1 IRCC (incl. MSDIWG)

Docs: HSSC7-07.1A   *IRCC activities affecting HSSC (including MSDI) (IRCC Chair) - Presentation*
          HSSC7-07.1B INF1   *S-124 Progress Report: Development of an S-100 Product Specification for Navigational Warnings (FR) - Presentation*

The IRCC Chair reported on the main outcomes of the last IRCC meeting, highlighting in particular the establishment of the new Crowd Sourced Bathymetry Working Group (CSBWG) and the recommendations made by the Marine Spatial Data Infrastructure Working Group (MSDIWG), the activities of which fall now under the IRCC.

The concerns raised by the MSDIWG regarding interoperability between S-100-based products and other developments in progress in the framework of regional geospatial infrastructure (S-102 vs elevation data model in INSPIRE for instance) were addressed and the representatives of the IHO Member States were invited to monitor these questions carefully, within the relevant working groups and project teams, and were urged to promote the use of the S-100 framework as appropriate.

Following this discussion, it was agreed that the IHB would upgrade the list of S-1xx product specifications which is available on the IHO website with inclusion of use-cases and business cases, level of maturity of the specifications, working group in charge of the development/custodian, etc.).

France reported on the activities of the S-124 Correspondence Group (CG) on Navigational Warnings, noting that since the last HSSC meeting both e-navigation and the modernization of GMDSS had been taken into account to ensure that the product specification was in line with IMO expectations. The current method of processing NAVTEX had also been taken into account. The CG had also considered Navigational Warnings models developed for the ACSEAS project and a joint KRISO-Jeppesen model. The first draft harmonized model was completed during NIPWG-1 in July 2015.

Australia and UK views that the scope of S-124 should not include the promulgation of T&Ps were duly noted.

Outcome:
- The Committee noted the report and the requests of the IRCC including the concerns expressed by the MSDIWG about interoperability issues with spatial data infrastructure standardization (INSPIRE European Directive for instance) and agreed on appropriate actions, notably as regards to S-65 and S-102.

→ **Actions HSSC7/32, HSSC7/33, HSSC7/34**

- The Committee noted the report of the S-124 Correspondence Group on Navigational Warnings and recalled that its scope is limited to the delivery of navigational warnings, noting that temporary and preliminary notices for ENCs are taken into account in the S-101 development and more generally studied by NIPWG within Maritime Service Portfolios (MSP) specifications.

7.2   IMO

Doc: HSSC7-07.2A   Report on IMO activities affecting HSSC (including e-navigation) (IHB) - Presentation

The IHB presented a report on IMO subjects relevant to HSSC (e-navigation, ECDIS matters, maritime cybersecurity, Polar Code) providing a comprehensive list of the recently-approved IMO Circulars and reference documents.

The Committee noted that an unambiguous requirement to update ECDIS software to the latest version of the relevant standards would require amending SOLAS Chapter V and that it was up to IMO Member States to make appropriate proposals for moving forward on this matter.

Noting a significant increase of the number of ships' reports on ENC/ECDIS Data Presentation and Performance Check, UK indicated that it was likely that the checks were being used by vetting inspectors although the IHO website made it clear that these check datasets should not be used for this purpose. Noting that the current ENC/ECDIS Data Presentation and Performance Check would no longer be applicable with the revised set of ECDIS standards, and noting the IEC view that a test on "expected results" was required, the Committee tasked the ENCWG to consider further the issue.

The Committee agreed on the way forward with regards to its contribution to the development of e-navigation.

Outcome:
- The Committee noted the report and agreed on reflecting the relevant issues (harmonized display of navigation information, e-navigation, ECDIS performance tests, maritime cybersecurity, Polar Code and unique identifiers) in the work plans of the relevant HSSC WGs.

- The Committee agreed that the IHO should take the initiative for developing further the maritime service portfolios (MSP) related to hydrographic services.

→ **Actions HSSC7/35, HSSC7/36, HSSC7/37**
→ **Actions HSSC7/38, HSSC7/39, HSSC7/40**
→ **Action HSSC7/41**

7.3   IEC

Doc: HSSC7-07.3A   IEC activities affecting HSSC (IEC) - Presentation

Mr Hannu Peiponen, newly elected Chair of the IEC TC80, gave a comprehensive presentation of the different IEC activities affecting HSSC.

He reminded the Committee that, in 2013, the TC80 had agreed to address the adoption of S-100 by the IMO as the baseline standard for e-navigation. This task was now in progress and could possibly lead to an application by IEC TC80 to become a domain owner within the S-100 framework and to the subsequent registration and maintenance of IEC TC80 items in the S-100 GI Registry. This objective would require closer cooperation between the IEC and the IHO in the future.

The IEC TC80 Chair expressed his satisfaction for the synchronized publication of both IHO and IEC standards (S-52, S-64, IEC 61174) which happened as agreed at HSSC-6. As a result, a coherent set of new editions of the key ECDIS-related standards addressing known "ECDIS anomalies" was now available.

Outcome:
- On behalf of the Committee, the HSSC Chair congratulated Mr Hannu Peiponen, on his recent election as Chair of the IEC TC 80.

- The Committee noted the IEC report and acknowledged the efficient coordination between IHO and IEC to produce a coherent set of new editions of the key ECDIS related standard to address anomalies in the operation of some ECDIS.

- The Committee welcomed the continuing cooperation between IHO and IEC in the development of e-navigation through the IHO S-100WG and the new IEC WG17 on the Common Maritime Data Structure (CMDS).

7.4   Inland ENC Harmonization Group (IEHG)

Doc: HSSC7-07.4A   Status Report on Inland ENC Development and Standardization (IEHG)

Outcome:
- The Committee noted the IEHG report and confirmed that the concerns of the IEHG are addressed by the procedures in place to develop and maintain the IHO S-100 registers. These procedures ensure appropriate alignment of the features required by IHO S-101 and IEHG S-401 (Inland ENC).

7.5   CIRM

Doc: HSSC7-07.5A   CIRM activities affecting HSSC (CIRM) - Presentation

Mr Richard Doherty, Chief Technical Officer/Deputy Secretary-General of the CIRM, gave a very educative presentation on the situation, from a user's point of view, on several topics related to ECDIS standards.

It was generally agreed that, despite the publication of the new IMO MSC.1/Circ.1503 on ECDIS, Flag States and ship owners remain unaware of the existence of new (IHO) standards that might lead to ECDIS software upgrades. CIRM was of the view that a change to SOLAS is needed to ensure that ECDIS would remain aligned to the latest (IHO) standards. The current regulations for updates were perceived as unclear and ambiguous.

CIRM noted that there were no official guidelines available for regulating the shipboard software maintenance process and they, (together with BIMCO), were working on a the development of a joint industry standard which would put the requirements on manufacturers, system integrators, service and data providers and ship owners to keep their systems updated. The aim was to gain Member State support and introduce these guidelines to IMO for approval and adoption.

The IHB proposed that the revision of the IHO check dataset should be coordinated with the introduction of ECDIS performance test procedures. Australia (AMSA) pleaded for developing simple tools that could be used by Port State Control (PSC) inspectors.

UK suggested that, at the next IMO meeting, the IHO should make a statement indicating its strong support to the CIRM activities.

Outcome:
- The Committee noted the CIRM presentation and welcomed the continuing cooperation between IHO and CIRM.

- The Committee expressed its support of CIRM activities related to the development of industry standards for software maintenance of shipborne equipment and invited CIRM to coordinate with the ENCWG for the revision of the IHO check datasets for ECDIS and the introduction of a possible ECDIS annual performance test.

→ **Action HSSC7/38, HSSC7/48**

7.6   IALA

Doc: HSSC7-07.6A   IALA activities affecting HSSC (UK) - Presentation

UK, representing the IHO in the IALA e-Nav committee, reported on the range of activities relating to the implementation of e-navigation including the IALA domain of the IHO GI Registry. IALA had developed a guideline that would set out the process for preparing S-100-based product specifications. He also noted that the S-100 data centric philosophy did not fit well with the data streaming and services concepts.

The S-100WG Chair responded positively and invited IALA to submit a paper on the required S-100 extensions to the next S-100WG meeting in Japan. She noted, however, that the S-100WG was in the process of reviewing its data service metadata and reported that S-112 - *Real time tidal data transfer* was already using data streaming and AIS data.

UK reported that one of the IALA working groups was aiming at maintaining a global repository of test bed results and developing an e-navigation roadmap for IALA

Outcome:
- The Committee noted the IALA report and welcomed the continuing cooperation between IHO and IALA.

- The Committee noted the intention of IALA to submit a proposal on developing a maritime resource name scheme under the S-100 framework.

→ **Action HSSC7/42**

- The Committee invited IALA to identify a representative in the S-100WG.

- The Committee recalled that any proposal for extension of the S-100 framework, notably in relation to data services, had to be submitted to the S-100WG.

7.7   ISO

Docs: HSSC7-07.7A   ISO activities affecting HSSC (IHB) - Presentation
*   HSSC7-07.7B INF7   Ensuring compatibility with ISO standards (CA)*

The IHB presented a brief report on ISO activities since the last HSSC meeting. He highlighted the IHO, OGC and TC211 collaborative efforts to produce a document entitled "*Guide to the Role of Standards in Geospatial Information Management*" for the UN-GGIM.

Canada raised concerns about the update cycle for ISO standards and the possible impact on S-100-based products.

> **Outcome**:
> - The Committee noted the report on ISO/TC211 activities affecting HSSC and tasked the IHO to address the concerns expressed by Canada about the management and the impact on S-100 of the changes to related ISO standards. However, the Committee supported the current case-by-case approach regarding the alignment of S-100 with the latest versions of the relevant ISO standards.
>
> → **Action HSSC7/43**

7.8   OGC activities affecting HSSC

Doc: HSSC7-07.8A OGC activities affecting HSSC (OGC) - Presentation

Mr Matthew Holland from Caris made a presentation on behalf of the OGC. Several initiatives were presented and discussed such as the participation of OGC representatives in MSDIWG meetings, the creation of the OGC Point Cloud Domain Working Group that might identify the need for standards of point clouds for hydrographic applications, and the OGC Sensor Web Standards.

The S-100WG Chair indicated her intention to attend the OGC Technical and Planning Committee Meeting to be held in March 2016 in Washington, DC.

Netherlands noted that there might an opportunity for the IHO to liaise with the OGC in June 2016 in Dublin, during the 32nd Conference of the NSHC.

> **Outcome**:
> - The Committee noted the presentation on OGC activities affecting HSSC and welcomed the preparation of an MoU between the IHO and the OGC.
>
> - The Committee tasked the S-100WG through the appropriate work items to address the harmonization of OGC and IHO standards within the S-100 framework, notably in relation to the Seabed Survey Data Model.
>
> - Netherlands, as Chair of the NSHC, noted that an OGC meeting will take in Dublin in parallel with the 32nd NSHC Conference in June 2016, and offered to investigate the establishment of a liaison between the two events.

7.9   IOGP

Doc: HSSC7-07.9A IOGP activities affecting HSSC (IOGP) - Presentation

Mr Matthew Holland from Caris informed the Committee on the on-line availability of the report related to the Common Operating Picture for oil spill response which included various sections on geospatial information and data modelling.

> **Outcome**:
> - The Committee noted the publication of the final report on "Recommended practice for Common Operating Picture architecture for oil spill response".

7.10   JCOMM

Docs: HSSC7-07.10A   *JCOMM activities affecting HSSC: Progress report on the Sea Ice Information Product Specification S-411 and its practical application (DE)*

   HSSC7-07.10B   *JCOMM activities affecting HSSC: S-412 Weather Overlay Feature Catalogue and Portrayal Development (US)*

   Presentation

The Committee welcomed the presentation made by USA, in particular the announcement that most operational ice charts would be available in S-411 format by December 2015. The first S-411 capable commercial ECDIS was also expected to enter into service in mid-2016 which was good news in the context of the IMO Polar Code.

With regards to weather overlays (S-412), thanks to the support provided by the Brazil's "Science Without Borders Programme", it was noted that work was in progress in USA for addressing quite difficult portrayal harmonisation issues (point, line and area features) due to the existing various standards and definitions developed by different communities (ISO, WMO, IHO).

> **Outcome**:
> - The Committee noted the presentation of the documents and welcomed the announcement that most operational ice charts will be available in S-411 format in December 2015 and that the first S-411 ready commercial ECDIS is expected in mid-2016.

7.11   RTCM

Doc: HSSC7-07.10A   *RTCM activities affecting HSSC (RTCM) - Presentation*

RTCM reported on various topics relevant to the IHO. It was noted that one of the RCTM working groups was preparing a possible S-100-based product specification for e-Loran and beacon corrections data.

The Committee noted also the activities of the RTCM Special Committee 122 on Data Exchange for Navigation-Related Internet Connected Applications. In response to a question from the Chair, RTCM indicated that the new edition of the RTCM ECS Standard was primarily directed at meeting US Coast Guard requirements applicable in US waters.

> **Outcome:**
> - The Committee noted the presentation on RTCM activities relevant to HSSC.

7.12   ICPC

Doc: HSSC7-07.12A   *Submarine Cables – The Case for an MoU between the IHO and ICPC (ICPC) - Presentation*

ICPC participated for the first time in an HSSC meeting. The representative of ICPC explained that very good contacts had been established in April 2015 at the ICPC Plenary Conference, thanks to the presentation on "*Marine Charting Processes with Particular Reference to Standards for Marking Submarine Cables*" given by the Head of the Hong-Kong Hydrographic Department on behalf of the IHO.

ICPC gave a very comprehensive presentation to the Committee on the issues related to submarine cables and the potential areas of common interest between ICPC and the IHO.

ICPC proposed that a joint working group be established to develop tangible and appropriate actions and outputs specifically to develop a set of standards and unified global approach across the IHO membership to the charting of submarine cables and promotion of submarine cable awareness.

The NCWG Chair commented that his group would be happy to reconsider, if needed, the paper (CSPCWG9-08.10A) submitted to the 9th meeting of the CSPCWG by the UKHO about submarine cables.

The Committee agreed that an S-100-based product specification could be considered. Prior to this development, it was agreed to move forward with the establishment of an MoU between ICPC and the IHO.

ICPC finally noted that within the context of crowd-sourced bathymetry large amounts of multibeam data in deep waters was collected during the course of submarine cable route survey operations that could possibly be made available for GEBCO purposes with the approval of the respective cable system owners.

Outcome:
- The Committee welcomed the participation of the representatives of the ICPC and noted the presentation on the issues associated with submarine cables.

- The Committee noted the areas of common interest between the IHO and the ICPC, and welcomed the possible contribution to the IHO/DCDB through the ICPC, in the context of the development of trusted crowd-sourced bathymetry.

- The Committee supported the proposal of the ICPC to develop an MoU between the IHO and the ICPC.

→ **Action HSSC7/44**

7.13   DGIWG – NATO GMWG

Docs: HSSC7-07.13A   DGIWG Activities affecting HSSC (UK) - Presentation
*   HSSC7-07.13B   NATO GMWG Activities affecting HSSC (UK) - Presentation*

UK presented the activities of the DGIWG and the NATO Geospatial Maritime Working Group (GMWG) related to the standardization of marine and maritime features.

An interesting table was displayed in the presentation, showing a summary of currently envisaged S-100 based Additional Military Layers product specifications, justifying that, where suitable, IHO specifications would be adopted or extended.

This principle led to the conclusion that the NATO GMWG would be considered as a stakeholder in the evolution of S-100.

The establishment of a domain for AML was fully supported by Australia and USA. Turkey suggested establishing a "NATO" domain to include more defence products and services than AMLs. The HSSC Chair noted that an "AML" domain could address non-NATO military requirements. France raised the question of the associated STANAG relating to the AMLs, with respect to the appropriate approval procedures.

Outcome:
- The Committee noted the reports on the activities of the DGIWG and NATO Geospatial Maritime Working Group (GMWG) relevant to HSSC and agreed on appropriate actions on the establishment

of an S-100 domain for Additional Military Layers (AMLs) and the need for compatibility between IHO and NATO procedures for approving related standards.

→ **Actions HSSC7/45, HSSC7/46**

8.	REVIEW OF NEW DEVELOPMENTS AND OTHER INFORMATION PAPERS

Docs: *HSSC7-08 INF3*   *Update of the DRTC (Digital Reference Tool for Cartographers) (KR) - Presentation*
                HSSC7-08 INF5   *Update on the S-11 Part B web catalogue and web services (INToGIS Project) (KR) - Presentation*

Outcome:
- The Committee noted the educational presentation of the information papers and applauded the significant contribution of KHOA to the development of IHO web services.

- The Committee noted that the DRTC is designed to integrate national implementation specifications as a supplement to the IHO charting specifications and thanked KHOA for offering this possibility to IHO Member States on a bilateral basis.

9.	LIAISON WITH EXTERNAL STAKEHOLDERS

Docs: *HSSC7-09A Rev1*   *Status of potential Stakeholders' events in 2016 (IHB) - Presentation*

The IHB introduced the report on relations with IHO Stakeholders and invited the Committee to consider any lessons learned from the Open Session (see Annex B) and discussed opportunities for future IHO Stakeholders' Forums.

Outcome:
- The Committee acknowledged the need expressed by industry of a coordinated approach to data quality assurance and tasked the DPSWG and the DQWG accordingly.

→ **Action HSSC7/25**

- The Committee noted the IHB report on Stakeholders' events and agreed on the interest of an IHO-Industry ECDIS Forum in the context of the implementation of the new set of ECDIS related standards, to be held in 2016.

→ **Actions HSSC7/47, HSSC7/48**

- The Committee acknowledged that the relations with stakeholders are a strategic issue to be considered by the HSSC Chair Group.

10.	REVIEW AND ENDORSEMENT OF HSSC WORK PLAN AND LIST OF ACTIONS

Docs: *HSSC7-10A*   *Status Report on IHO Publications on Standards, Specifications and Guidelines (IHB)*
            HSSC7-10B   *HSSC Work Plan 2016-17 (IHB)*

Outcome:
- The Committee invited further comments from the IHO Member States on the status report on IHO Publications on Standards, Specifications and Guidelines.

→ **Action HSSC7/49**

- The Committee adopted the HSSC work plan for 2016-2017, noted that there was no request for contracting support at this stage, and agreed that future requests, if any, will be referred to the Chair of the HSSC for decision in liaison with the IHB, within the limits of the proposed IHO budget for 2016.

11. ANY OTHER BUSINESS

The ENCWG Chair requested an update on the activities of the IHO-EU Network Working Group (IENWG) in relation with the EU Marine Equipment Directive. The IHB reported that in response to a request from an industry stakeholder, the IENWG had agreed to consider how the EU Directive could foster the requirement that software-based marine equipment such as ECDIS be updated to the latest version of the relevant standards. After reviewing the situation, the IENWG had invited HOs of IHO Member States of the European Economic Area to call the attention of their national Maritime Administration on whether the next revision of the directive should set out any conditions to ensure that (1) a software upgrade is applied when appropriate and (2) that such an upgrade does not compromise the Type Approval Certificate. The matter was thus referred to the relevant EU Expert Group. The IHB had been made aware of the CIRM view that a globally uniform requirement through the IMO would be more appropriate in order to ensure a level playing field.

Outcome:
- The Committee supported the request of the ENCWG to be kept abreast of the developments related to the revision and implementation of the EU Marine Equipment Directive which might affect ECDIS.
→ **Action HSSC7/50**

12. DATE & LOCATION OF THE NEXT MEETINGS

Canada confirmed its offer to host HSSC-9 in 2017 and Germany offered to host HSSC-10 in 2018.

Outcome:
- The Committee agreed on the following schedule:
  HSSC-8: 14-18 November 2016 - IHB, Monaco
  HSSC-9: Early November 2017 - Ottawa, Canada (dates to be decided)
  HSSC-10: November 2018 – Rostock, Germany.

13. CLOSURE OF THE MEETING

The HSSC Chair concluded that the meeting had been productive. He noted the significant outcomes and welcomed in particular the fact that S-100 was gaining momentum through its adoption by different communities. He urged IHO Member States to devote more resources to S-100 projects and mobilize the young generation. He expressed his sincere thanks to the chairs and the members of the subordinate bodies for their dedicated work and acknowledged the important contribution of the stakeholders.

Lastly, the Chair expressed, on behalf of all participants, his sincere gratitude to the staff of KHOA for the outstanding logistics and most professional support provided to the meeting. He wished a safe return to all participants.

-A-1-

NEW AND REVISED TERMS OF REFERENCE

I.   Nautical Cartography Working Group (NCWG) Terms of Reference

NAUTICAL CARTOGRAPHY WORKING GROUP (NCWG)
(Formerly the Chart Standardization and Paper Chart Working Group - CSPCWG)

Terms of Reference and Rules of Procedure

Ref: *1) 1st HSSC Meeting (Singapore, October 2009)*
        2) 4th HSSC Meeting (Taunton, United Kingdom, September 2012)
        3) 6th HSSC Meeting (Viña del Mar, Chile, November 2014) (name change only)
        4) 7th HSSC Meeting (Busan, Republic of Korea, November 2015)

1.   **Objectives**

   a)   To provide expert and authoritative advice and guidance to relevant IHO bodies and non-IHO entities on the concepts of nautical cartography, including

      (i)   Its application to nautical charts existing in any physical or digital form;

      (ii)   The development of specifications for symbolization of any data required to be displayed on nautical charts;

      (iii) The integration of the nautical chart and other cartographic products for e-Navigation. This includes resolving portrayal issues related to the simultaneous display of a nautical chart in combination with navigational information and non-navigational information within an integrated navigation system.

   b)   To provide expertise to the International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (IBSC) on the standards of competence for cartographers when deemed necessary.

   c)   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 Non-Governmental International Organizations (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)   The Chair will monitor membership to ensure that each Regional Hydrographic Commission is invited to be represented on the WG.
   c)   EC membership is open to entities and organizations that can provide a relevant and constructive contribution to the work of the WG.
   d)   The Chair and Vice-Chair shall each 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.

e) A Secretary should be appointed to ensure the smooth running of WG business; to administer consultation and collation of members' views; and may act as Editor of the WG's publications. The position is normally filled by a member of the WG.

f) 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. If the position of Chair or Vice-Chair becomes vacant during the period between two ordinary sessions of the Conference ("Conference" to be replaced by "Assembly" when the revised IHO Convention enters into force) an election should be conducted at the next meeting of the Working Group or by correspondence.

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

h) 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.

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

j) 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's main tasks are listed at 1. above and are amplified here:

(i) Keep under continuous review the IHO publication S-4 'Regulations of the IHO for International (INT) Charts and Chart Specifications of the IHO', in order to advise the HSSC on their updating, design and format and the portrayal of symbols. Note: S-4 is supplemented by:
INT 1 'Symbols, Abbreviations and Terms used on Charts'
INT 2 'Borders, Graduation, Grids and Linear Scales'
INT 3 'Use of Symbols and Abbreviations
These supplementary documents are maintained by individual MS, under the supervision of NCWG.

(ii) Advise the HSSC on suggestions put forward by MS to update S-4, in accordance with IHO Specification B-160, with the goal of achieving the maximum possible adherence by MS to the Regulations and Specifications.

(iii) Keep under continuous review S-11 Part A 'Guidance for the Preparation and Maintenance of International Chart Schemes' in order to advise the HSSC on its updating.

(iv) Advise the IHB ("IHB" to be replaced by "IHO Secretariat" when the IHO Secretariat is established) and Regional Hydrographic Commissions, as appropriate, on the work of International Charting Coordination Working Groups (ICCWG) or Regional Charting Groups (RCG) in order to promote the production of international (INT) charts.

(v)   Offer advice based on the WG experience to ICCWG/RCG and individual MS, on chart schemes and cartographic work, in order to strongly encourage adherence to IHO charting specifications.

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 will maintain close liaison with other HSSC WGs, particularly the ENCWG, NIPWG and S-100WG, and other groups developing and maintaining S-100 based products. The WG should liaise also with other IHO bodies, international organizations and industry, as appropriate and as instructed by HSSC.

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

II.   Tides, Water Level and Currents Working Group (TWCWG) Terms of Reference

TIDES, WATER LEVEL AND CURRENTS WORKING GROUP (TWCWG)

Terms of Reference and Rules of Procedure

Reference: 7th HSSC Meeting (Busan, Republic of Korea, November 2015)

1.   Objective
   a)   To provide technical advice and coordination on matters related to tides, water levels, currents, relevant physical oceanographic data and vertical datums, including water level and current 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 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)   monitor and develop the use of tidal, water level, current information and relevant physical oceanographic data including water level and current models;
       (ii)   advise on the use of vertical datums;
       (iii)   advise on tidal, water level and current observation, analysis, forecast and prediction;
       (iv)   advise on matters concerning exchange, distribution and use of tidal, water

level, current information and relevant physical oceanographic data and related information;

(v) study principles and contribute to the development of improved methods for conveying tidal, water level, current information and relevant physical oceanographic data 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.

III.   Hydrographic Surveys Scoping Project Team (H2S PT) Terms of Reference

HYDROGRAPHIC SURVEYS SCOPING PROJECT TEAM (H2S PT)

Terms of Reference and Rules of Procedure

Reference: 7th HSSC Meeting (Busan, Korea, 9-13 November 2015)

1.   Objectives

a) consider Doc. HSSC7-03C "Consideration of the need to establish a HSWG";
b) justify the need for "hydrographic survey" related to standardization activities;
c) define the scope (subject areas, technology, standards, data usage, training, etc.) and possible tasks that may be considered by the IHO, and consult the IHO Member States as appropriate;
d) propose recommendations on the way forward (what, who, when, how) at HSSC-8.

2.   Authority

The H2S PT is a subsidiary of the Hydrographic Services and Standards Committee (HSSC). Its work is subject to HSSC's approval.

3.   Composition and Chair

a) The PT shall comprise representatives of IHO Member States (MS), Expert Contributors (EC), observers from accredited Non-Governmental International Organizations (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 PT.
c) The Chair and Vice-Chair shall each 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 International Hydrographic Conference (IHC) (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) A Secretary should be appointed to ensure the smooth running of PT business; to administer consultation and collation of members' views; and may act as Editor of the PT's publications. The position is normally filled by a member of the PT.
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. If the position of Chair or Vice-Chair becomes vacant before the next ordinary IHC, inter-conference elections may be conducted at the next HSPT meeting/conference call or by correspondence between PT meeting/conference calls.
f) Any invitation of ECs shall be under approval of membership from the Chair.
g) EC membership may be withdrawn if a majority of the MS represented in the PT agrees that an EC's continued participation is irrelevant or unconstructive to the work of the PT.

h) All members shall inform the Chair in advance of their intention to attend meeting/conference calls of the PT.

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

4.   Procedures

a) The PT's main tasks are listed in Section (1) above.

b) The PT conducts its business by correspondence.

c) Decisions shall generally be made by consensus. If votes are required on issues or to endorse proposals presented to the PT, votes shall be taken by a simple majority of the MS present and voting. When dealing with inter-sessional matters by correspondence, a simple majority of responding MS shall be required. Each MS shall have one vote.

d) Correspondence shall be distributed by the Chair (or the secretary) within six weeks of the end of meeting/conference calls and participants' comments should be returned within three weeks of the date of dispatch. Final minutes of meeting/conference calls should be posted on the IHO website within three months after a meeting/conference call.

IV. Under Keel Clearance Management Information Project Team (UKCM PT) Terms of Reference

PROJECT TEAM TO DEVELOP AN S-100 PRODUCT SPECIFICATION FOR UNDER KEEL CLEARANCE MANAGEMENT (UKCM) INFORMATION (UKCM PT)

Terms of reference and rules of procedure

Reference: 7th HSSC Meeting (Busan, Republic of Korea, 9 to 13 November 2015)

1.   Objective

To develop an IHO S-100 based product specification for Under Keel Clearance Management (UKCM) information to enable the outputs of UKCM services to be displayed for users.

2.   Authority

This Project Team (UKCM PT) is a subsidiary of the S-100 Working Group (S-100 WG). Its work will be guided by the 2016-18 Work Plan established by the S-100 WG and subject to its approval.

3.   Composition and Chair

a) The Project Team (UKCM PT) shall comprise representatives of IHO Member States (MS), Expert Contributors (EC) and observers from accredited NGIOs. The IHO Secretariat may also be represented. A membership list shall be maintained and posted on the IHO website.
b) EC membership is open to entities and organizations that can provide relevant and constructive contribution to the work of the UKCM PT. ECs shall seek approval of their membership from the Chair of the UKCM PT.
c) EC membership may be withdrawn, in the event that a majority of UKCM PT members agree that an EC's continued participation is either irrelevant or not constructive to the work of the UKCM PT.
d) The Chair of the UKCM PT is designated by the parent body.
e) If a Secretary is required, he/she should normally be drawn from a member of the UKCM PT.

4.   Procedures

a) The UKCM PT should work primarily by written correspondence and teleconferences.
b) Decisions should be made by consensus. Dissenting opinions, if any, should be reflected in the UKCM PT report.
c) The UKCM PT should liaise with other IHO bodies, international organizations, end users and industry to ensure the relevance and currency of its work.
d) The UKCM PT should report to the S-100WG in accordance with its Work Plan.

REPORT OF THE IHO STAKEHOLDERS' OPEN SESSION

Introduction

The IHO maintains close relations with all the stakeholders having an interest in IHO activities. Continuing the series of IHO-led stakeholders' events held over the years, an IHO Stakeholders' Open Session took place on the afternoon of Thursday 12 November 2015. The programme of the session was based on presentations proposed by IHO stakeholders in response to a call for abstracts.

The session was chaired by Dr Mathias Jonas, Chair of the HSSC. The presentations addressed two themes:
- development in survey technologies and methods;
- S-100 development and related issues.

Each presentation was followed by a short discussion. No specific action arose from the presentations.

Development in survey technologies and methods

Two presentations were included under this theme:
- Maximizing the value of autonomous surveys by Matthew Holland, Caris;
- Status of crowd-sourced bathymetry development by Gilles Bessero, IHB.

S-100 development and related issues

Five presentations were included under this theme:
- The benefits of a hands-on approach to S-100, by Matthew Holland, Caris;
- The challenges of evolving from S-57 to S-101 Production Systems by Rafael Ponce, Esri;
- Experiences with the integration of high density bathymetry in PPUs/ECS by Emma Fowler, SevenCs;
- Data quality assurance in light of S-100 and e-navigation by Michael Bergmann, Jeppesen / CIRM / RTCA;
- IALA S-200 domain and e-navigation activities by Edward Hosken, IALA.

LIST OF ACTIONS ARISING FROM HSSC-7

AGENDA ITEM	SUBJECT	ACTION No.	ACTIONS (in bold, action by)	TARGET DATE/EVENT	STATUS (at 13 Nov. 2015)
1.	**Opening and Administrative Arrangements**				
1	Contact List	HSSC7/01	**IHO Member States** to provide the IHB with their updates to the HSSC List of Contacts.	**Permanent**	
3.	**Matters arising from Minutes of 6th HSSC Meeting**				
3	Hydrographic Surveys Scoping	HSSC7/02	**IHB** to issue a CL inviting IHO MS and Expert Contributors to participate in the work of the HSSC Hydrographic Surveys Scoping Project Team (H2S PT) created at HSSC-7.	**End of November 2015**	
3	Hydrographic Surveys Scoping	HSSC7/03	**HSSC Project Team on Hydrographic Surveys Scoping** to elaborate the scope of possible activities on hydrographic standards and publications and propose a way forward taking into consideration Doc. HSSC7-03C and proposal made by OGC to participate in the OGC Point Cloud Domain Working Group.	**HSSC-8**	

AGENDA ITEM	SUBJECT	ACTION No.	ACTIONS (in bold, action by)	TARGET DATE/EVENT	STATUS (at 13 Nov. 2015)
4.	**HSSC Administration**				
4.1	**Implementation of Programme Performance Indicators**				
4.1	HSSC Programme Performance Indicators (PIs)	HSSC7/04	Inputs to the current HSSC WPI for the 2014 period to be provided by **HSSC WG Chairs** (Performance Indicators No 2 and 3) and **WEND WG Chair** (Performance Indicator No 5) by 31 January 2016.	**31 Jan. 2016**	
4.1	IHO Strategic Plan - IHO 3-year Programme of Work	HSSC7/05	**Chairs of HSSC WGs** to collect the views of their members on the IHO Strategic Plan and the IHO 3-year Programme of Work	**By end of April 2016**	
			HSSC Chair Group to prepare inputs for the revision of the IHO Strategic Plan and the IHO 3-year Programme of Work	**June 2016**	
			HSSC Chair Group to prepare inputs for the revision of the IHO Strategic Plan and the IHO 3-year Programme of Work.	**HSSC-8**	
5.	**Reports by HSSC Working Groups**				
5.1	**S-100 (S-100WG)**				
5.1	IMO Performance Standards	HSSC7/06	**S-100WG** to investigate and identify any amendments to existing IMO Performance Standards that may be required to use S-100 based products including S-101 ENCs.	**HSSC-8**	

AGENDA ITEM	SUBJECT	ACTION No.	ACTIONS (in bold, action by)	TARGET DATE/EVENT	STATUS (at 13 Nov. 2015)
5.1, 5.5	S-100 Domains	HSSC7/07	**NIPWG** to submit to the **S-100WG** a proposal relating to harmonization requirements within the different domains of the Feature Concept Dictionaries.	**February 2016**	
5.1	Registry Manager	HSSC7/08	**HSSC Members** to ensure that their country support the IHO budget for 2016 proposing to staff the S-100 Registry Manager position through a permanent IHB staff member (IHO CL 74/2015 refers).	**30 November 2015**	
5.1	Under Keel Clearance Management Information	HSSC7/09	**S-100WG** to set up a project team for developing a product specification for under keel clearance management information	**HSSC-8**	
5.1	Under Keel Clearance Management Information	HSSC7/10	**IHB** to issue a CL inviting IHO MS and Expert Contributors to participate in the Under Keel Clearance Management Information Project Team (UKCM PT) created at HSSC-7, and provide support to the S-100WG accordingly.	**End of November 2015**	
5.3	**ENC Standards Maintenance (ENCWG)**				
5.3	Working Groups' Officers	HSSC7/11	**ENCWG** to announce the potential vacancy for Vice-Chair in its call for the ENCWG-1 meeting.	**Dec. 2015**	

AGENDA ITEM	SUBJECT	ACTION No.	ACTIONS (in bold, action by)	TARGET DATE/EVENT	STATUS (at 13 Nov. 2015)
5.3	S-58	HSSC7/12	**ENCWG** to submit for endorsement by HSSC draft Ed. 5.1.0 of S-58 and a proposal for the date of entry-into-force taking into account feedbacks received from industry, RENCs and ENC Producers.	**End of March 2016**	
5.3	S-58	HSSC7/13	Subject to HSSC endorsement, **IHB** to issue a CL to IHO Member States seeking their approval of the new Edition of S-58 and of its date of entry-into-force.	**HSSC-8**	
5.3	S-52, S-64	HSSC7/14	**ENCWG** to co-ordinate with CIRM and IEC a well-founded proposal revising the timeline for the withdrawal of Ed. 6.0 of S-52, Ed. 3.4 of the Presentation Library and Ed. 2.0.0 of S-64.	**End of February 2016** (for information at NCSR-3)	
5.1, 5.3	Portrayal of Lengths of Sector Lights	HSSC7/15	**S-101 Project Team** to consider the proposal submitted by the Norwegian Coastal Administration on the portrayal of lengths of sector lights (Doc. HSSC7-05.1C).	**HSSC-8**	
5.4	**Revision of S-66**				
5.3, 5.4	S-66	HSSC7/16	**S-66 Project Team** to submit a draft revision of S-66 (Stage 1) to the ENCWG, followed by submission for endorsement by HSSC in April by correspondence.	**March 2016 (ENCWG-1)** **April 2016**	

AGENDA ITEM	SUBJECT	ACTION No.	ACTIONS (in bold, action by)	TARGET DATE/EVENT	STATUS (at 13 Nov. 2015)
5.4	S-66	HSSC7/17	Subject to HSSC endorsement, **IHB** to issue a CL to IHO Member States seeking their approval of the new Edition of S-66.	**May 2016**	
5.5	**Nautical Information Provision (NIPWG)**				
5.5, 5.6	S-1xx Portrayal Issues	HSSC7/18	**NCWG** to compile portrayal requirements relating to product specifications in general as part of its programme of work.	**NCWG-2**	
5.5	S-1xx Portrayal Issues	HSSC7/19	**NIPWG** to experiment a workflow with stakeholders (industry, academia, …) and other HSSC WGs (S-100WG, DQWG, …) for S-122 portrayal issues.	**HSSC-8**	
5.5	S-122 test beds	HSSC7/20	For S-122, and assuming that sufficient information is available, **NIPWG,** in liaison with NCWG and S-100WG, to make use of test beds opportunities (e-navigation projects as appropriate).	**HSSC-8**	
5.6	**Nautical Cartography (NCWG)**				
5.6	Working Groups' Officers	HSSC7/21	**NCWG** to announce the potential vacancy for Vice-Chair in its call for the NCWG-2 meeting.	**Jan. 2016**	
5.6	S-11 Part A	HSSC7/22	**NCWG** to re-consider S-11 Part A for addressing ENC scheming issues in a separate section and submit a new draft to HSSC.	**NCWG-2** **HSSC-8**	
5.6	S-4	HSSC7/23	**IHB** to issue a CL to IHO Member States seeking their approval of S-4 Ed. 4.6.0.	**(End of Nov. 2015)**	

AGENDA ITEM	SUBJECT	ACTION No.	ACTIONS (in bold, action by)	TARGET DATE/EVENT	STATUS (at 13 Nov. 2015)
5.1, 5.6	AIO	HSSC7/24	**S-101 PT** to address the need for improved functionality regarding T&P updates in future ENC/ECDIS.	**HSSC-8**	
5.7	**Data Quality (DQWG)**				
5.2, 5.7	Data Supply Chain Certification	HSSC7/25	**DQWG** and **DPSWG** to develop their views on Data Supply Chain Certification (Jeppesen's presentation at HSSC-7 refers) at their next meetings.	**May 2016**	
5.8	**Tides, Water Level and Currents (TWCWG)**				
5.8	Implementation of transition arrangements	HSSC7/26 (former HSSC6/07)	**TWCWG** to consider the need for creating an S-111 Project Team (in liaison with **S-100WG**).	**TWCWG-1**	
5.8	Resolution 3/1919	HSSC7/27	**IHB,** in liaison with **TWCWG Chair,** to issue a CL to IHO Member States seeking their approval of the revised draft Resolution 3/1919, taking into account IHB comments (Doc. HSSC7-05.8C refers).	**December 2015**	
5.9	**Hydrographic Dictionary (HDWG)**				
5.1, 5.9	Future of S-32	HSSC7/28	**S-100WG** to provide the HDWG with its generic technical specifications / requirements in terms of definitions, register(s) and procedures.	**May 2016**	
6.	**Inter-Organizational Bodies**				
6.1	**Advisory Board on the Law of the Sea (ABLOS)**				
6.1	C-51	HSSC7/29	**IN** to submit a proposal to ABLOS on the need to expand the scope of C-51 in relation with judgments.	**ABLOS-23**	

AGENDA ITEM	SUBJECT	ACTION No.	ACTIONS (in bold, action by)	TARGET DATE/EVENT	STATUS (at 13 Nov. 2015)
6.1	S-121 – Maritime Limits and Boundaries	HSSC7/30	Considering that the IHO S-121 Product Specification will not be approved before end of Dec. 2017, **IHB** to inform DOALOS (**in liaison with ABLOS Chair**) of the expected date of approval of S-121.	**End of Nov. 2015**	
6.1	S-121 – Maritime Limits and Boundaries	HSSC7/31	**IHB** to issue a CL inviting IHO Member States to support the development of S-121 product specification within a project team under the S-100WG.	**End of Nov. 2015**	
7.	**Decisions of other bodies affecting HSSC**				
7.1	**IRCC (incl. MSDIWG)**				
5.3, 7.1	S-65	HSSC7/32	**ENCWG** to review S-65 for alignment with the WEND Principles and Guidelines as amended.	**HSSC-8**	
5.1, 7.1	S-102	HSSC7/33	**Chair of S-102 PT** to consider the issues of interoperability with SDI standards (such as INSPIRE elevation data specification, etc.).	**HSSC-8**	
7.1	Repository of S-100-based product specifications	HSSC7/34	**IHB** to maintain the list of S-xxx product specification and make it available on the IHO webpage including use-cases and business-cases, as appropriate.	**Permanent**	

AGENDA ITEM	SUBJECT	ACTION No.	ACTIONS (in bold, action by)	TARGET DATE/EVENT	STATUS (at 13 Nov. 2015)
7.2　　IMO					
5.5, 7.2	Harmonized display of navigation information	HSSC7/35	**NIPWG** to coordinate the contribution of the IHO to the development of guidelines for the harmonized display of navigation information and to the preparation of the output related to the development and implementation of maritime service portfolios (MSPs), notably in liaison with the WWNWS-SC.	**HSSC-8**	
5.1, 5.5, 7.2	Harmonized display of navigation information	HSSC7/36	**S-100WG** to prepare, in liaison with **NIPWG**, the **IHB** and the **HSSC Chair**, a submission on the contribution of the S-100 framework to the harmonized display of navigation information and the impact on existing performance standards for consideration by NCSR 2 (deadline: 25 Dec 2015).	**18 Dec. 2015**	
5.1, 5.3, 7.2	E-navigation implementation	HSSC7/37	**ENCWG and S-100WG** to monitor any possible impact of the work on the agreed e-navigation outputs on ECDIS related standards and S-100 related standards respectively.	**HSSC-8**	

AGENDA ITEM	SUBJECT	ACTION No.	ACTIONS (in bold, action by)	TARGET DATE/EVENT	STATUS (at 13 Nov. 2015)
5.3, 7.2, 7.5	ECDIS Performance Tests	HSSC7/38	**ENCWG** to consider the impact of the implementation of the new editions of S-52, S-52 Presentation Library and S-64 on the ECDIS ship check dataset and associated instructions taking into consideration the new ECDIS Chart 1.	**ENCWG-1**	
5.2, 7.2	Maritime cybersecurity	HSSC7/39	**DPSWG** to monitor the development of the industry guidance on maritime cybersecurity and to advice on possible future actions.	**HSSC-8**	
5.5, 5.6, 7.2	Polar Code	HSSC7/40	**NIPWG and NCWG** to consider improvements to current IHO specifications or other actions which could facilitate the implementation of the provisions of the Polar Code related to charting issues (Part I-B, Additional Guidance to Chapter 9 (Safety of Navigation) refers).	**HSSC-8**	
5.1, 5.5, 7.2	Unique Identifiers	HSSC7/41	**NIPWG and S-100WG** to consider referring the issue of Unique Identifiers to the IMO-IHO Harmonization Group on Data Modelling and report to HSSC-8 (see Action HSSC7/42).	**HSSC-8**	
7.6 IALA					

AGENDA ITEM	SUBJECT	ACTION No.	ACTIONS (in bold, action by)	TARGET DATE/EVENT	STATUS (at 13 Nov. 2015)
5.1, 7.6	Unique Identifiers	HSSC7/42	**IALA** to submit its requirements on Maritime Resource Name scheme to the S-100WG (see Action HSSC7/41).	**Prior to S-100WG-1**	
7.7 ISO					
7.7		HSSC7/43	**IHB** to raise, in the liaison report to the 41st meeting of ISO TC211, the issue of stability of standards and the impact on derived standards of the ISO updating process (Doc. HSSC7-07.7B INF7 refers).	**December 2015**	
7.12 ICPC					
7.12	ICPC	HSSC7/44	**IHB** to staff the draft MoU proposed by the ICPC in liaison with relevant HSSC WGs.		
7.13 DGIWG – NATO GMWG					
5.1, 7.13	AMLs	HSSC7/45	**S-100 Registry Manager** to process the request for the establishment of a domain for Additional Military Layers (AML) in accordance with S-99.	**S-100WG-1**	
7.13	AMLs	HSSC7/46	**UK** to ensure that the approval process of NATO STANAGs related to AMLs is compatible with the IHO process for standards approval.	**HSSC-8**	

AGENDA ITEM	SUBJECT	ACTION No.	ACTIONS (in bold, action by)	TARGET DATE/EVENT	STATUS (at 13 Nov. 2015)
9.	**Liaison with External Stakeholders**				
9	Outreach	HSSC7/47	**IHO Member States** to consider representing IHO interests in the stakeholders' meetings organized by Digital Ship and inform the IHB of their intentions.	**December 2015**	
7.5, 9	Outreach	HSSC7/48	**IHB** to liaise with the CIRM Secretariat for the possible organization of an ECDIS Forum at the CIRM Annual Meeting, 2016.	**December 2015**	
10.	**Review and Endorsement of HSSC Work Plan and List of Actions**				
10	Status of IHO Publications	HSSC7/49	**IHO Member States** to provide their additional requirements, if any, and contributions for translation in French and/or Spanish of IHO Publications (Doc. HSSC7-10A refers).	**Permanent**	
11.	**Any Other Business**				
5.3, 7.1, 11	EU Marine Equipment Directive	HSSC7/50	**IHB** to ensure that the ENCWG is kept informed on the outcome of the IENWG work item related to the revision of the EU Marine Equipment Directive.	**ENCWG-1**	