

9th IHO-CSPCWG Meeting

9th CSPCWG MEETING Seoul, Republic of Korea, 13-16 November 2012

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REPORT: (Note: The paragraph numbering is the same as in the agenda, although the order of taking the items was not exactly followed).

1. Welcome, Introductions and Administrative Arrangements

*Docs: CSPCWG9-01A rev 2 List of documents
CSPCWG9-01B rev 1 List of meeting participants and WG members*

Mr Kim Suk Hyun, Director-general of the Korean Hydrographic and Oceanographic Administration (KHOA), extended a warm welcome to the CSPCWG and wished us a successful meeting.

The participants introduced themselves, some of whom were attending their first WG meeting. A list of meeting participants is at ANNEX C.

Apologies had been received from the hydrographic office representatives of Chile, Colombia, Greece, Iran, Italy, Latvia, Netherlands, New Zealand, South Africa and Ukraine, and also from Craig Greene of ESRI.

P Jones (UK and Chairman) reminded the group of the changes to Directors at the IHB and advised that the new Director with responsible oversight for HSSC WGs (including CSPCWG) is Gilles Bessero.

The Chairman outlined his plans for the meeting and thanked KHOA for hosting CSPCWG9. He also thanked members for attending, acknowledging the cost and therefore the need to make good use of the opportunities to make progress. He mentioned that there have been several changes to individual national representatives during the year and advised WG members to update their personal email lists accordingly, from the membership list on the IHO website, which is updated whenever changes occur.

He advised that he would seek consensus from discussions, with one vote per MS should a vote be required. He stated that the record of the meeting would focus on main points, proposals and actions; full detailed minutes would not be taken.

2. Approval of Agenda

Docs: CSPCWG9-02A rev 5 Agenda

The WG approved the agenda. The Chairman reserved the right to postpone discussion on some lower priority items if necessary to ensure more important items were sufficiently discussed and would take some papers with common subjects

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together. He explained that the agenda order did not reflect any priority. He also advised that the record of last year's meeting had been subjected to comment at the time it was produced and could therefore be taken as read. The meeting accepted this.

3. Status of Actions from CSPCWG8

Docs: CSPCWG9-03A rev 1 Status of actions from CSPCWG8

Very good progress had been made with the 37 actions from CSPCWG8 (November 2011), as detailed by the paper. A Heath-Coleman (Secretary) added the following:

CSPCWG8 Action 2-4 These three actions will be replaced by equivalent actions for WG9.

CSPCWG8 Action 5. Although completed, this action had failed in its intended outcome. The way ahead had been allocated discussion at new agenda item 4.5.2.

CSPCWG8 Actions 11, 13, 20, 23, 29, 35: These actions are now with the INT1 producers. This is noted in the INT1 subWG report at agenda item 11.1.

CSPCWG8 Action 14: Although the immediate action had been completed, the subject has not yet been closed; see further discussion at agenda item 8.1.

CSPCWG8 Action 15: Although the immediate action had been completed, the subject has not yet been closed; see further discussion at agenda item 8.22.

CSPCWG8 Action 16: This has been included in the revision of B-300.

CSPCWG8 Action 17: This is now the subject of a draft CL with IHB, pending issue to Member States.

CSPCWG8 Action 18: This was discussed at DQWG6; see paper 04.4A for further details.

CSPCWG8 Action 26: O Parvillers (FR) indicated there would be no further action.

CSPCWG8 Action 30: This action was now the subject of CSPCWG9-INF4.

CSPCWG8 Action 31: The US individual responsible (C Harmon) had circulated sections A-E of US Chart 1 through the Secretary. See further discussion at agenda item 11.2.1.

CSPCWG8 Action 33: Not reported.

CSPCWG8 Action 34: This action had been taken forward through WG letters 07 & 12/2012 and would now be progressed via further discussion at agenda item 8.6.

CSPCWG8 Action 36 & 37: Although the immediate action had been completed, the subjects have not yet been closed; see further discussion at agenda item 8.1.

All other actions had been completed. None of the existing actions were carried forward.

New (CSPCWG9) actions arising:

ACTION 1: Secretary to produce draft report of CSPCWG9 by end of December 2012, for participants to approve.

ACTION 2: All WG members to make early bids for travel budget to CSPCWG10 (New Zealand); advise Chairman if any difficulties.

ACTION 3: All WG members to note agenda items for CSPCWG10 throughout the year (and forward to Secretary as they arise).

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4. Relationship with HSSC and subordinate groups

4.1. Notes from HSSC4 (Chairman)

Docs: CSPCWG9-04.1A CSPCWG report to HSSC4
CSPCWG9-04.1B Report from HSSC4 - Notes by CSPCWG Chairman

The Chairman provided additional comments on the CSPCWG report to HSSC4:

- He stated that there is still very good representation of the IHO in this WG, including this year the addition of Turkey.
- He stated that S-4 remains outside the requirements of Resolution 2/2007 until completion of the current revision, now expected during 2013.
- He thanked Jeff Wootton (AU) for his input in maintaining links between CSPCWG and other technical WGs, ensuring sound communications.
- He commented on the various requests for advice received by Chairman and Secretary, most recently providing INT numbers for the new Arctic (Region N) international charting co-ordinator (NO). He invited all members to be free to contact him for advice and to log items of wider interest for future meetings with the Secretary (even producing EN papers well in advance, if possible) (Action 3 refers).

He briefed the meeting on relevant details from HSSC4 (CSPCWG9-04.1B refers). Mathias Jonas (DE) has taken over the chairmanship from Vaughan Nail (UK).

M Huet (IHB) stated that IHB would be studying the list of stakeholder comments from HSSC4 (Annex G to the draft HSSC4 report), with a view to taking some initiatives which would be the subject of a CL in due course. He also advised that the next HSSC meeting would be in China, November 2012.

4.2. DIPWG (Vice Chairman)

Docs: CSPCWG9-04.2A Report to CSPCWG9 on DIPWG activities

J Wootton (AU and Vice-Chairman) briefed the meeting on the activities of the DIPWG, in accordance with the submitted report. The main concern at present is the progress in developing a portrayal model for S-100, which is delaying the development of S-101, etc.

On the work in developing a single standard symbols set in ECDIS, he reported that the preference at the moment was that the symbols for aids to navigation should reflect the intended purpose of the aid, rather than its 'real-world' colour. The meeting expressed concern about this view, which assumes that HOs will be able to definitely identify the intended purpose of, for example, a non-IALA mark.

ACTION 4: J Wootton to ask DIPWG to take into consideration the portrayal of non-IALA buoys, and to widen discussion of 'real-world' items versus 'intended purpose' to include CSPCWG and possibly others.

4.3. TSMADWG (Vice Chairman)

Docs: CSPCWG9-04.3A Report to CSPCWG9 on TSMADWG activities

J Wootton briefed the meeting on the activities of the TSMADWG, in accordance with the submitted report. IALA have decided to use S-100 as the base model for their work – a good development. He is responsible for developing the S-101 Data Classification and Encoding Guide. He also advised that, subsequent to the report,

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an issue with the display of all-round lights in some ECDIS had been identified, which was perceived as a safety issue. An IHO CL and encoding bulletin had been issued.

In relation to paragraph 7 of the TSMADWG report, bullet 5/2, 'development of guidelines for ENC schemes', the Chairman advised that, while CSPCWG remain the lead WG for this matter, the North Sea ENC Harmonization Group (NSEHWG) had been asked to do some preparatory work on this and that the WENDWG had also asked to be involved. The INT charting groups of the RHCs also have an interest, in accordance with their TOR.

4.4. DQWG (Chairman)

Docs: CSPCWG9-04.4A Report to CSPCWG9 on DQWG activities

The Chairman explained that the main work of the DQWG is now focused on how to present data quality indicators for ECDIS in S-101, especially the need for a time indicator for survey quality. This is important and difficult, given that the DQWG user survey had demonstrated that the current CATZOC display is much less well understood than the traditional Source Diagram on paper charts.

The Chairman also commented that DQWG would welcome new delegates to help with this work. DQWG next meets in July 2013, in New Brunswick, Canada.

4.5. HDWG

4.5.1. Report from HDWG (Vice Chairman)

CSPCWG9-04.5A Report to CSPCWG9 on HDWG activities

J Wootton briefed the meeting on the activities of the HDWG. He noted that of the three active members, the Secretary had recently changed (now David Wyatt at IHB) and the Chairman is shortly retiring. Although HSSC4 had determined that there is a continuing need for this WG, there is a need for new active delegates including non-English first language members, if the work is not to stagnate.

S Choi (KR) commented that the word 'hydrographic' is not recognized by Microsoft applications.

ACTION 5: IHB to make representation to Microsoft to include the word 'hydrographic' in their on-line dictionaries

4.5.2. Definitions of height, elevation and altitude (Chairman)

Docs: CSPCWG9-04.5B Definitions of height, elevation & altitude

The Chairman had put a paper to HSSC4 (HSSC4-05.9B), on behalf of CSPCWG. Consequently, HSSC had tasked HDWG to review the revised definitions of elevation, height and altitude. Until this is achieved, the meeting decided that the revision of B-300 should use definitions based on the recommendations in HSSC4-05.9B, with a caveat that the HDWG is reconsidering these definitions in 2013.

J Wootton opined that in due course the IHO Registry may be where hydrographically relevant definitions are managed, and S-32 may be generated from the Registry, and as such the IHO control body for the Registry should draw from all WGs affected.

ACTION 6: Secretary to include definitions of height and elevation in accordance with HSSC4-05.9B in the revision of S-4 B-300 and explain in CL. (Also highlight in WG Letter covering report of this meeting).

5. Terms of Reference

Docs: CSPCWG9-05A CSPCWG TOR

The only change to the TOR identified was as instructed by HSSC4, concerning the

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special status of S-4.

ACTION 7: IHB to amend TOR paragraph 2 as instructed by HSSC (wording in paper CSPCWG9-05A Annex).

6. CSPCWG procedures

Docs: CSPCWG9-06A CSPCWG Procedures

Minor changes to the CSPCWG Procedures were agreed, as in the margin of CSPCWG9-06A, ie:

- Delete fax alternative
- Remove 'Technical' in front of 'Resolution'
- Add reference to CL20/12.

ACTION 8: Secretary to amend CSPCWG procedures as drafted in paper CSPCWG9-06A Annex.

7. CSPCWG work plan

7.1. Summary of progress (Sec)

Docs: CSPCWG9-07A Work Plan updated for HSSC4

The Secretary briefed the meeting on progress with items on the work plan (substantive discussion was deferred to Agenda Item 13). A considerable amount of progress had been achieved during the past 12 months, with a number of items completed and reported to HSSC4; these would now be removed from the work plan.

The Chairman thanked everyone for their effective contributions over the past year.

ACTION 9: Secretary to remove items reported as completed to HSSC4 from work plan.

8. Chart content:

8.1. Update on lights matters: Major, Dir., Group v Interrupted for VQ lights (UK, FR)

<i>Docs: CSPCWG9-08.1A</i>	<i>Definitions of 'major' lights; sector width of direction lights</i>
<i>CSPCWG9-08.1B</i>	<i>Group and Interrupted Q, VQ and UQ lights</i>
<i>CSPCWG9-08.1C</i>	<i>Lights classification</i>
<i>CSPCWG9-08.1D</i>	<i>Outstanding issues from CSPCWG Letter 08/2012</i>

The Secretary advised the meeting that the questions about major lights, direction lights and interrupted lights had been referred to IALA. IALA had undertaken to discuss these matters at their Aids to Navigation Management meeting, which is taking place at the same time as CSPCWG9. IALA have received copies of the CSPCWG papers; as they seemed reluctant so far to provide unequivocal statements, it would be sensible for CSPCWG to establish an IHO position on these issues.

Major lights: The paper CSPCWG9-08.1C was taken at the same time. The meeting agreed that the table used by France was not suitable for S-4 and, in fact, it would be better not to define a 'major light'. However, the last proposed definition in CSPCWG9-08.1A could usefully be applied as general guidance.

ACTION 10: Secretary to consider all references to 'major' lights in S-4 with a view to enhancing the guidance in line with the 2nd proposed 'definition' in CSPCWG9-08.1A.

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ACTION 11: INT1 subWG to remove references to 'major' and 'minor' lights from the term at P1; instead, just refer to 'position of light'.

Direction lights: It was agreed that there is no need to change existing guidance (unless IALA advises otherwise). However, a clarification was needed for the use of 'Dir' where sectors are so narrow that they cannot be shown.

ACTION 12: Secretary to draft clarification on application of 'Dir' to lights with sectors which are too narrow to chart.

Interrupted lights: It was agreed that options for expressing lights as 'interrupted' or 'group' should not exist for the same character. IALA Maritime Buoyage System cardinal lights (which may be Q or VQ) require the number in group to be stated, eg VQ(3). UQ lights are not used in the IALA system and the light flashes too fast to count the number in group. It was therefore decided that only group characters for Q and VQ should be allowed, while all groups of UQ lights should be expressed as interrupted (with the period if available), eg IUQ.10s. Some VQ lights are currently charted without specifying the number in group, which is presumably not known; these will need to be defined by the appropriate authority.

ACTION 13: Secretary to inform IALA of CSPCWG preference for usage of Q and VQ in groups and discontinuation of IQ and IVQ.

ACTION 14: IHB to consider how S-12 should be updated.

Outstanding issues from CSPCWG Letter 08/2012: the Secretary explained that three issues covered by WG letter 08/2012 required further discussion:

- The use of a 'generic' magenta light flare on multicoloured charts, for sectored lights where the sectors are not charted. The majority view remained that the generic flare, while not a perfect solution, is better than using three different coloured flares. It was agreed that the wording of B-470.4a.ii should be amended to 'should' instead of 'must'. This is not a clarification as the use of a generic flare has yet to be presented to Member States for approval.

ACTION 15: Secretary to draft a CL for Member States approval on the 'generic' magenta flare.

- It was agreed that on multicoloured charts, the coloured arc should be the main method of showing the sector colour. The wording at B-470.4a.v should be amended to 'Sector arcs should be shown by coloured arcs, which may be supplemented by fine black dashes:'

ACTION 16: Secretary to clarify the guidance on charting multicoloured lights in accordance with WG letter 08/2012 and the changes agreed.

- The draft new specification on 'highlighting' at Annex D to CSPCWG9-08.1D was approved in principle, to be circulated to the full WG for review before exposing to Member States. J Wootton suggested B-478.6 (after strip light) might be a better location in S-4.

ACTION 17: Secretary to circulate draft S-4 entry on 'highlighting' by WG Letter, for review, before preparing for MS.

8.2. Light vessels (UK)

Docs: CSPCWG9-08.2A Light vessels

The meeting agreed that there should be a separate symbol for depicting light vessels (or lightships), distinct from the 'LANBY' and minor light float symbols. The old distinction between 'manned light vessels' and 'unmanned major light floats' is no longer relevant;

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the visual appearance of the vessel, very different from a large buoy, is considered more significant. The symbol should be based on a slightly simplified version of the obsolescent P6 (3 masts with 'X' on centre mast, no 'shading' to stern and bow, flare from position circle). It was considered that most mariners would expect to find the symbol in section Q rather than P, so Q32 was suggested to be the place in INT1, with the sub-title changed to 'Light floats and Light vessels'.

It was not known whether any LANBYs still exist, so the Secretary was asked to seek clarification from IALA.

ACTION 18: Secretary to draft revision on light vessels to S-4 for WG review. New Work Plan item.

ACTION 19: INTsubWG to consider where and how to include a simplified version of the old light vessel symbol in INT1; also to review placement of other floating light structures.

ACTION 20: Secretary to ask IALA to advise whether 'LANBY's still exist.

8.3. Submerged posts and piles (US)

Docs: CSPCWG9-08.3A

This item was withdrawn.

8.4. Disused lighthouses (SE)

Docs: CSPCWG9-08.4A Disused lighthouses with minor structures

M Wallhagen (SE) briefed the meeting on small lighthouses that have had the lights removed but are still useful as day time navigation marks. While it might be misleading to chart the example shown in the paper as a tower with legend 'LtHo (disused)', if the height is given, eg '(3.5)', this would guide the mariner on what he could expect to see. However, where a tower symbol (E20) is clearly inappropriate, then a BnTr (Q110) or Beacon in general (Q80) symbol could be used.

ACTION 21: Secretary to clarify B-457.3 parenthesis to include examples 'BnTr' and 'Bn in general'.

8.5. Magenta v green 'no entry' symbols (UK)

Docs: CSPCWG9-08.5A 'No Entry' symbols

Two examples of magenta 'entry prohibited' symbols being used in conjunction with green ESSA symbols were projected. On one, the magenta appeared to clarify the depiction; on the other it was not so clear. J Wootton advised that this subject was also being considered for S-101 portrayal, where the idea was being explored of splitting 'navigational' restrictions (probably including entry and anchoring prohibitions) from 'regulatory' restrictions (such as fishing and diving prohibitions). Guidance in S-4 and S-101 should agree, so it would be best to take this issue forward through joint discussions.

ACTION 22: AU to continue discussion on dividing regulatory from navigational restrictions (for S-101), keeping Secretary informed.

ACTION 23: Secretary to draft proposals for S-4 based on resolution of discussions at Action 22.

8.6. Depth quality indicators (see WG Letters 7 and 12/12) (Chairman, FR)

*Docs: CSPCWG9-08.6A Depth quality indicators
CSPCWG9-08.6B Use of abbreviations PA, PD*

Discontinuity between surveys. There was consensus that this was aimed at solving a problem which does not really exist; all the existing techniques, used as appropriate to

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the different situations, were considered adequate. However, it was agreed that in cases where a clear break in contours and tints is necessary, the FR practice of providing a survey date on each side of the break is clearer than a 'discontinuity' legend in the gap.

ACTION 24: Secretary to draft proposals to improve guidance in S-4 on discontinuities between surveys.

ACTION 25: INT1 subWG to consider whether some explanation of the break could be added (possibly in I25).

Unreliable soundings. There was no consensus for any change to existing techniques of warning of poor survey quality, other than the already agreed improvement to the explanation of upright soundings in INT1. It was suggested that the CATZOC table could be added to INT1.

ACTION 26: INT1subWG to consider options to add the CATZOC explanatory table to INT1.

Safe clearance wrecks. New Zealand's suggested improvement to the K30 term in INT1 was accepted. It should also be applied to K3.

ACTION 27: INT1subWG to amend K3/30 in accordance with NZ wording.

Depth/position quality abbreviations. The meeting decided that the FR rules for differentiating PA and PD should not be included in S-4. All existing data quality abbreviations should be retained and the INT1subWG were invited to review the explanatory terms with a view to making them simpler for the chart user to understand.

ACTION 28: INT1subWG to review whether terms for data quality indicators can be clarified.

Reported symbol on small-scale charts. The meeting agreed that the danger circle without abbreviation to imply a reported depth, as originally used on the small-scale INT chart series, is potentially confusing and should be made obsolescent. Approximate contours (if appropriate) and the legend 'Rep' are clearer. The danger line should only be retained if the reported depth is 30m or less. See also discussion at 8.15.

ACTION 29: INT1subWG to make I4 obsolescent.

ACTION 30: Secretary to draft revised wording on 'Rep', to remove danger line for depths >30m.

Reorganization of INT1. The various options for some rearrangement of INT1, from minor changes to the addition of completely new sections, removal of duplication and composite symbols were briefly discussed. It was decided that it would be better to ask the INT1subWG to draw up a paper considering the main options, scope and consequences (without committing too much time or effort at this stage), before reporting back to the full WG. J Wootton offered to assist with this initial exploration.

ACTION 31: INT1subWG to consider options, consequences and scope of rearranging INT1. J Wootton (AU) to also contribute.

8.7. Hovercraft and WIG effect craft routes (KR)

Docs: CSPCWG9-08.7A Hovercraft and WIG effect craft routes

Namhoon Kim (KR) showed two short video clips of WIG effect craft in operation on a potential regular ferry route in Korean waters. The craft could carry 50 passengers and travel at 97 knots. The prototype had crashed, delaying the likely start of regular services. However, the meeting debated possible symbology. The WIG craft is not dissimilar to a seaplane, so unless the route is fixed, then the best option would be to use N13 (seaplane operating area) for the start and finish of the routes (this could be extended for the whole route in some circumstances). There would also be the possibility of developing the symbol by using the seaplane symbol combined with a ferry route M50 if it

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proves necessary to mark an actual route. It would be likely that explanatory notes would also be required. All this is currently speculative until it is confirmed the plans will go ahead.

ACTION 32: KR to advise WG on further developments with WIG services.

8.8. Radio-activated fog signals (US)

Docs: CSPCWG9-08.8A

R Heeley (US-NOAA) asked if any other nations were implementing radio-activation to fog signals. Most members reported that, in general, fog signals are being phased out. However, the meeting considered that, if the radio-activation of fog signals is a safety issue, then it should be referred to in some way on the chart. No action yet for CSPCWG, but all WG members are asked to find out whether radio-activated fog signals were in use in, or planned for, their own waters.

ACTION 33: All WG members to advise whether the use of radio-activated fog signals is likely to be implemented in their waters.

8.9. Toroidal buoys (UK)

Docs: CSPCWG9-08.9A Toroidal buoys

The meeting agreed that it is unnecessary to devise a new symbol for toroidal-shaped buoys. J Wootton reported that most inshore ODAS buoys in Australian waters are spherical, so it would be inappropriate to imply that they are usually toroidal, or change the example in INT1. The example pictured in the paper would be appropriately charted as a pillar buoy, although it is the superstructure, rather than the flotation device, which makes that so; it is not known whether all toroidal buoys would have a similar superstructure. Nevertheless, as pillar buoys do not have navigational significance, then the suggestion of adding 'and toroidal-shaped data collection buoys' in B-462.5 was accepted.

ACTION 34: Secretary to clarify B-462.5 to include 'toroidal-shaped' buoys. New Work Plan item.

8.10. Submarine cables (UK)

Docs: CSPCWG9-08.10A Submarine cables

The meeting accepted the argument that recommending flexibility in charting cables beyond 200m because of possible seabed activity is pointless. Nevertheless, it considered some flexibility should be retained, for example, to avoid stopping a cable just short of the edge of a chart. It was agreed that the end of B-620.3i should be amended to read '...submarine cables and pipelines to a depth of at least 200m.'

The meeting agreed that disused submarine cables should not usually be charted beyond 20m (to reduce chart clutter) and agreed the recommended addition to the end of B-443.7: 'eg: stopping them at 20m (which is the likely depth of water to which smaller vessels may be endangered by anchoring and fouling the cable).'

ACTION 35: Secretary to include two clarifications in S-4 re charting of submarine cables (NMs, disused).

8.11. Use of symbol K27 (swept wreck) (UK)

Docs: CSPCWG9-08.11A 'Swept depth' symbol

In addition to the information in the paper, M Hovi (FI) advised the meeting that Finnish practice in sweeping channels is to use multibeam surveys, complemented by a bar sweep in any areas of doubt. The meeting agreed with the recommendation that the existing symbol should remain as defined and not be extended to other usage. No new

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symbol is required and no actions are required by CSPCWG.

8.12. Underwater moorings (UK)

Docs: CSPCWG9-08.12A Underwater moorings

This paper had been provided for information only. No participants were able to explain the '(submerged)' buoy symbol in section 4.

8.13. References to ENC on paper charts (UK)

Docs: CSPCWG9-08.13A References to ENC on paper charts

Several participants stated that they had been considering this issue, and agreed that there may be a need to show limits of selected ENC on paper charts. For example, S Spohn (DE) referred to very large-scale berthing ENC, where there are no paper chart equivalents. Conversely, AU had included a cautionary area on ENC to refer to paper charts where no ENCs had been produced. However, it was agreed that in most circumstances, there should not be reference on paper charts to ENC or vice versa. No actions were proposed.

8.14. Maximum draught areas (IT)

Docs: CSPCWG9-08.14A Maximum draught areas

The meeting accepted the proposal for expanding the use of 'maximum authorized draught', but considered that it should not be added to the fairway specification; it would be more appropriate to provide a new specification (place to be determined) and new symbol (INT1 I26). For completeness, a specification and symbol for minimum depth should also be included.

ACTION 36: Secretary to draft new specification on maximum draught and minimum depth (and consider placement in S-4). New Work Plan item.

ACTION 37: INT1subWG to include symbols for maximum draught and minimum depth at I26/27.

8.15. Clarification about artificial or natural obstructions (IT)

Docs: CSPCWG9-08.15A Obstructions

The meeting agreed that, while most 'obstructions' are probably artificial, one of the meanings of the abbreviation '*Obstrn*' is for unidentified obstructions. The other use is for unspecified (on the chart) obstructions (an example given being fender tyres which have broken loose and been deposited on a harbour floor). It does not seem to matter to the mariner whether an unidentified obstruction is artificial or not, so there is no reason to change the term. There was some debate over whether the abbreviation '*Obstrn*' actually adds anything useful, but the consensus was that it should be retained; it at least clarifies for the mariner that an identifying legend such as '*Wk*' or '*Well*' has not been missed. Additionally, B-422.9 implies that an abbreviation must be added and it was decided no change to the specification is required.

There was consensus that danger circles should not be generally used for anomalous soundings; there would need to be clear reason to consider the anomalous sounding to be dangerous to some vessels capable of navigating in the vicinity. (This is related to the discussion about the use of I4 at 8.6).

8.16. Trawling prohibited (IT)

Docs: CSPCWG9-08.16A Trawling prohibited

The meeting decided that the proposed symbol is not intuitively different from the existing 'fishing prohibited' symbol (N21) and in most cases that symbol can be used. It was not

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felt necessary to try to devise symbols for all possible restrictions; the existing ones can be used, with legends or explanatory notes as appropriate if more specific details are required.

8.17. Symbol for footbridge (SE)

Docs: CSPCWG9-08.17A International symbol for footbridge

The meeting agreed that a single line bridge symbol would be useful, both to indicate a footbridge on a large-scale chart and also for bridges in general on smaller scale charts. The meeting preferred the DE symbol, which is more closely associated with the existing double line symbol.

ACTION 38: Secretary to draft new specification for 'footbridge' (and bridge on smaller scale charts). (Include as annex to meeting record letter). New Work Plan item.

ACTION 39: INT1subWG to include new footbridge symbol by splitting D20 (move vertical clearance to D22).

8.18. Spot heights and contours (FR)

Docs: CSPCWG9-08.18A Use of spot heights and contours

The meeting decided that the FR guidance for application of spot heights and contours was too prescriptive to be included in S-4. However, it was acknowledged that there is insufficient guidance at present. The Secretary proposed two new paragraphs, which were accepted by the meeting as suitable for including in the revision of B-300, subject to Member States approval:

Add to B-351:

In general, contours should be added to charts designed for coastal navigation and larger scales (see B-126), as far inland as tops of hills and mountains that are likely to be visible from a vessel well off-shore.

Add to B-352, new paragraph:

Selected spot heights marking the tops of significant hills, mountains or ranges should be shown on charts designed for landfall (see B-126) and larger scales. They may also be shown on smaller-scales, including 1:3.5M (see C-303.1).

ACTION 40: Secretary to draft clarifications on application of contours and spot heights in B-300. (Include as annex to meeting record letter).

8.19. Representation of depths (FR)

Docs: CSPCWG9-08.19A Representation of depths

The meeting agreed that it would be helpful to explain the 'rule' about sounding selection to avoid wrong interpolation of depth between soundings, although it was recognized that this is difficult to explain succinctly. J Wootton offered to supply some words from AU internal guidance and R Heeley also supplied a paragraph from US internal guidance.

ACTION 41: Secretary to draft clarification on sounding selection. (Include as annex to meeting record letter).

8.20. Representation of non-regulated fairway (FR)

Docs: CSPCWG9-08.20A Representation of fairway

The meeting agreed that the circumstances described in the FR paper should be in terms of data quality rather than 'non-regulated fairway'. It was considered unwise to introduce a black 'fairway' symbol in addition to the magenta symbol, as this could confuse the mariner. In general, the use of survey limits on the face of the chart should be

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discouraged; the Secretary pointed to B-415.2 where this is stated. The meeting agreed, however, that there may be exceptional circumstances where this might be required.

ACTION 42: Secretary to draft addition to B-415.2 (cross-referenced to B-434.5) for showing survey limits in exceptional circumstances.

8.21. Spoil Grounds (DE)

Docs: CSPCWG9-08.21A Depth information in spoil grounds

The meeting considered that the existing guidance on charting spoil grounds is adequate, but noted that the cartographer is at liberty to use approx contours anywhere if it useful to 'draw the navigator's attention to inadequacy in survey data' (B-411.2).

8.22. Maintained / Dredged Areas (AU/UK)

Docs: CSPCWG9-08.22A Maintained / Dredged Areas

This issue has proved to be a very complex subject. It became apparent that the root cause of confusion may lie in the term 'maintained depth' (apparently introduced when MP-004 - now S-4 - was originally drafted in the 1980s). Some HOs (eg UK) interpret this to mean that the depth is always maintained to at least that charted, while others (eg AU) interpret it to mean that the channel or area is maintained by a programme of dredging, but that the charted depth is not always available. This latter interpretation has resulted in the need to advise the mariner, eg by (T)NM, when the available depth in the channel or area is less than charted.

The Secretary informed the meeting that UKHO had opened discussions with four UK port surveyors, who were all adamant that the existing I21 symbol should be retained, supported by a note requesting mariners to contact the port authority for the latest information. The Secretary also suggested that perhaps the I23 symbol should be abandoned, as that seemed to be causing confusion. If I21 is used for maintained depth (that is always available as charted), and I21 supported by a note, as above, used if the port authority cannot guarantee that the charted depth is always available, then confusion should disappear. There was no dispute over the meaning and usefulness of I22 (although some small clarification to the term in INT1 may be required). The meeting concluded that there are still issues to be sorted out and requested UK and AU to continue correspondence, with a view to presenting a more complete and unified recommendation to the WG.

ACTION 43: Secretary and AU to continue consulting about charting of dredged areas to produce a detailed proposal for WG consideration.

9. S-4

9.1. Clarification on obsolete symbols (Sec)

Docs: CSPCWG9-09.1A Retention of obsolescent symbols in S-4

The meeting accepted the draft B-120.6 in the paper, with the addition of 'or updating' after 'deleting' in the last sentence. The meeting also agreed that only the latest version of S-4 should be available on the IHO website, but that anyone wishing to consult an earlier edition could do so on application to IHB, which holds a complete set of archived S-4 editions.

ACTION 44: Secretary to include clarification for removal of obsolescent symbols from S-4 in next edition of S-4.

9.2. Specification on text styles (AU)

Docs: CSPCWG9-09.2A Text styles

Although guidance on the use of upright and sloping text styles (in relation to names)

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does exist in B-562.1, it was agreed that a more generic specification could usefully be included in section B-100. It was also agreed that this guidance is for the compiler and it is not necessary to detail it in INT1.

ACTION 45: Secretary to include clarification for convention on upright and sloping text styles in next edition of S-4.

9.3. Recommendations for compilation practice (large scales first?) (Chairman)

*Docs: CSPCWG9-09.3A Recommendations for compilation practice
(large scales first?)*

The meeting agreed with the principle of updating largest scale charts first and decided it would be useful to state this explicitly in either S-4 or S-11.

ACTION 46: Secretary to consider appropriate placement and draft guidance about updating large scale charts first. New Work Plan item.

9.4. Strengthening requirement to construct charts on WGS84 (Chairman)

*Docs: CSPCWG9-09.4A Strengthening requirement to construct charts
on WGS84*

The meeting agreed that referring all charts to WGS84 is an ideal objective. As an evolutionary process, it is likely that, in time, paper charts will be derived from ENC or a WGS84-referenced database. The meeting agreed that it could be useful to express this concept in S-4, similar to that expressed for vertical datums at B-405.3, derived from IHO Resolution 3/1919 (as amended). However, this should first be agreed by HSSC.

ACTION 47: Chairman to review where and how the principle of referring all charts to WGS84 can be expressed in S-4 (ready for HSSC approval).

Some concern was expressed over whether 'WGS84' is the appropriate term. For navigation purposes, it has come to mean that a chart is referred to a datum which can be used directly by GNSS systems, but in literal terms it may be incorrect. While this may not matter for compilers and navigators (who are not geodesists) it is possible that a better and more accurate term could be used.

ACTION 48: IHB to consult on whether 'WGS84' is the best term to use for horizontal datum reference for all charts (paper and electronic).

9.5. Layout of S-4 (eg remove blank pages, index to Part C?) (Sec)

Docs: CSPCWG9-09.5A

J Wootton mentioned that the index had recently been removed from the Use of Object Catalogue for ENC Edition 3.0.0. Removing the index of S-4 Part C would therefore be not only internally consistent but also consistent with the latest IHO documents. Use of search engines is now considered more efficient than maintaining an index. The meeting agreed the index should be removed at the next opportunity. However, it was also suggested that there should be a clear 'end' to the document.

M Huet stated that the 'page left intentionally blank' had recently been considered for all IHO documents and the decision was to retain them, as they do no harm and are useful for anybody updating a printed copy by replacement sections. Ü Görür (TR) pointed out that many people still find printed copies of papers useful, including many CSPCWG members at this meeting! The meeting agreed that the pages should be retained until such time as HSSC declared that they should be deleted from all IHO documents.

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ACTION 49: Secretary to remove index to S-4 Part C at next NE (and include a clear 'end' to S-4 in its place).

9.6. Impact and value of B-600? (Chairman)

Docs: CSPCWG9-09.6A Impact and value of S-4 Part B-600, Chart Maintenance

The Chairman enquired whether the new section B-600 was proving useful and whether any need for revisions had been identified. M Hovi commented that FI are using it during a review of their NM processes.

ACTION 50: All WG members to advise Secretary whether, with experience, any improvements should be made to S-4 B-600.

9.7. Nautical chart copyright (DK)

Docs: CSPCWG9-09.7A Consideration of a legal case in Denmark

M Huet stated that the IHB Directors consider CSPCWG not to be the appropriate forum to discuss this issue. DK were invited to contact the IHB to take this forward, if required. No further record is appropriate as this is still subject to court proceedings.

9.8. Late comments on B-300 revision (Chairman)

The Chairman mentioned two questions raised by FR on the final draft of B-300:

- Underwater volcanic activity is mentioned in B-355. Should there be a cross-reference from an appropriate place in B-400 to B-355 or should there be a dedicated specification in B-400? The meeting agreed that there should be a specification in B-400.

ACTION 51: Secretary to draft a new specification for underwater volcanic action (and consider placement in S-4). New Work Plan item.

- Should the use of continuous lines for boundary features on land (eg cemeteries, wind farms, airports) be established as a convention in B-100? While recognising that not all land boundaries consist of actual walls or fences, this is usually the case, so the meeting decided that this should be provided as a convention.

ACTION 52: Secretary to include clarification on land boundary symbols in next edition of S-4.

Note: As Action 52 only applies to land boundary features, this convention seems better placed at B-360. Other late amendments to draft B-300 revision are noted at actions 6, 38 and 40.

10. Other CSPCWG publications

10.1. S-11 Part A

Docs: CSPCWG9-10.1A S-11 Part A

O Parvillers indicated that FR accepted the IHB comment on their suggestion about 'limiting the list of areas in which Member States are potential printers to INT regions'. No further action is necessary.

10.2. Discussion on INT charting (Chairman)

The Chairman provided the opportunity for a discussion about the on-going relevance of the INT chart concept, which was then widened to consider the future of the paper chart

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generally. In brief, the meeting supported the continuing principles of the INT chart concept and encourages all RHCs and their International Charting Coordination WGs to be active in this field.

It was opined that, while ENC's are particularly useful for navigation at larger scales, paper charts at smaller scales are still very useful for planning and overview. It was suggested that a paper could be drafted on this subject; D Prince (CA), J Wootton and M Wallhagen agreed to make an initial draft.

ACTION 53: AU/CA/SE to consult and prepare a paper on the future of the paper chart.

In course of the discussion about the future of paper charts, M Huet suggested that it is time to revisit the name of this WG. The main task of the WG is chart standardization or specification, the application to paper charts being a secondary task. Nevertheless, the inclusion of 'Paper Chart' within the title appeared to be causing a misconception about the business of the WG. J Wootton explained that TSMADWG and DIPWG are very dependent on the work of the CSPCWG and that S-4 remains the fundamental guide on chart specifications whatever format the chart is delivered in.

ACTION 54: Chairman/Secretary to revisit previous discussion about the naming of this working group and draft a new proposal.

After meeting note: this was originally discussed at CSPCWG3, resulting in Action 7: 'All WG members to consider possible new names for WG under [a proposed] new structure [of IHO technical WGs] and advise Secretary of preference by 31 January 2007'.

At CSPCWG4, from a selection of possible names, the participants voted unanimously for 'Chart Specifications WG'.

However, at CSPCWG5, the Chairman advised that he had decided not to press for the CSPCWG name to be changed (to Chart Specifications WG). He explained that now the roles were not changing (as part of the process of setting up HSSC, especially the relationship with DIPWG, formerly CSMWG) part of the reason for change had gone away. Further, that the WG, operating under its existing name, had garnered considerable credibility, which might be diminished by a name change. This was accepted by the participants.

10.3. S-49

No requirement had been received to review or update S-49. A copy of a draft MRG for part of the Arctic region, produced by CA, was circulated. This is planned to be the first of a series to cover the Arctic. It was commented that Arctic region MRGs would be unusual as there are currently no routing systems in the region (so perhaps the classification of these products is anomalous). As further work is done on these, it may be that some changes to S-49 will be suggested.

The Chairman noted that S-4 A-204.4 lists a group of numbers for 'Other polar and special charts'. No 'special charts' are known to have been allocated INT numbers, except for the Baltic MRG (INT1200), which should possibly have been allocated a number in that group. The Chairman advised that he had allocated a group of numbers for use for future INT charts in the Arctic region.

ACTION 55: Secretary to update table at A-204.2 for INT numbers allocated to Arctic region.

11. INT 1 / 2 / 3

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11.1. Report from Secretary of INT1 subWG (Sec)

Docs: CSPCWG9-11.1A INT1 subWG Report

The Secretary reported on the work of the INT1subWG, and mentioned the rapidly accumulating list of tasks (Annex C to CSPCWG9-11.1A and further items added during this meeting). The meeting agreed that the subWG should continue its work, including reviewing its own TOR and General principles. As a significant number of potential changes have already accumulated, a meeting may be required during 2013. WG members were invited to notify the Secretary of any errors or omissions noticed in INT1. The subWG was commended for its work.

11.2. ENC symbols: status reports on paper guides

11.2.1. P/ECDIS (US)

Docs: CSPCWG9-11.2.1A P/ECDIS U.S.Chart No.1

11.2.2. NP5012 (UK)

R Heeley briefed the meeting on progress with US Chart 1 (12th Edition), which is in landscape format and includes a column with S-52 symbols. It will replace the 11th Edition, which does not have S-52 symbols, and is expected to be published by the end of 2012. He invited WG members to view the draft at

http://www.nauticalcharts.noaa.gov/mcd/chart1/Chart1_10312012.pdf

and send any comments to Colby Harmon (colby.harmon@noaa.gov) as soon as possible. Comments received by the end of November 2012 may be included in Edition 12, but late comments would be noted for the next edition.

The Chairman explained that UK had chosen to produce a separate product (Admiralty Guide to ENC Symbols used in ECDIS - NP2012). It follows the same layout as INT1, but will remain as a separate product from NP5011 (UK's version of INT1). NP5012 has only just been published and UK is waiting for customer feedback before judging the success, or otherwise, of this decision.

11.3. Maritime limits – tint bands (AU)

Docs: CSPCWG9-11.3A Maritime limits – tint bands

J Wootton briefed the meeting on comments received from a source in AU that it is not intuitive that a tint band along a limit is inside the limit. The meeting studied INT1 and decided that if the mariner referred to INT1 section N, it is very clear that all the limits shown in that section are 'outer corners' of the area and the examples of tint bands at N1.1 and 1.2 are obviously within the area; no change required.

12. Lessons learned from Marine Incidents

12.1. Rocknes (NO)

I Tellefsen (NO) gave an illustrated talk on the 'Rocknes' accident. She noted that in the subsequent court case, NHS's ISO documentation and registration was useful; the maxim 'say what you do and do what you say'. The outcome of the case was assisted by a policy of 'telling only facts, speaking with one voice (amongst the various government organizations involved) and forming a group of experts to speak on the issues'.

12.2. Clipper Adventurer (CA)

D Prince gave a brief outline of the 'Clipper Adventurer' stranding. No further details

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recorded as the incident is still subject to court proceedings.

13. Review of Actions and Work Plan

13.1. Actions

A draft list of actions was briefly reviewed and approved, subject to more detailed analysis of the meeting record.

13.2. New items for Work Plan

Those items from the actions list considered to be new work items were highlighted for subsequent inclusion in the Work Plan.

13.3. Priorities

It was agreed that item A6 (revision of B-500) should be changed to medium priority and that D31 should be closed.

13.4. Timescales for tasks

The Chairman undertook to review all tasks, revise timescales as necessary and include a revised Work Plan in the record of the meeting. This is at Annex E.

ACTION 56: Secretary & Chairman to update Work Plan and include in record of meeting.

14. Any Other Business

14.1. Further update on outcomes from using ENC data from other nations to update charts – extension of area (SE)

M Wallhagen updated the meeting on the exchange of ENC data between the Nordic countries (DK, FI, IS, NO, SE), which may be used to update paper charts partly covering neighbouring countries waters. He commented that these countries are aiming at greater harmonization of generalization/selection techniques. DE and LV had expressed interest in extending the area at BSHC meeting.

14.2. Reports from WG members (including non-attendees)

No reports had been received.

14.3. Items to bring to attention of HSSC

The following items were identified as requiring HSSC consideration:

- Applicability of the term WGS84 – see Action 48
- ~~Utility of retaining blank pages in IHO publications~~ *(On reconsideration and based on record at Item 9.5, this seems too trivial to raise with HSSC).*
- Future strategy for charting (role of paper charts) – dependant on outcome of Action 53.
- Change to the name of the WG – dependant on outcome of Action 54.

ACTION 57: Chairman to bring these items to the attention of HSSC

14.4. Election of CSPCWG officers (M Huet)

Docs: CSPCWG9-14.4A Election of Officers

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CSPCWG9-14.4B rev1 Candidates

Peter Jones was re-elected as Chairman of CSPCWG by acclamation.

Jeff Wootton was re-elected as Vice-Chairman of CSPCWG by acclamation.

14.5. Technical seminar: chart scheming (if participants wish)

This item was not taken.

14.6. INF papers:

- 14.6.1. INF1: IEC 80/661/CD Maritime navigation and radiocommunication equipment and systems (draft – unnumbered pdf document: see pages 76-77 symbols for shipborne navigational systems: AIS) **(UK)**

This was for information only and not discussed.

14.6.2. INF2: Use of bathymetric surfaces **(UK)**

DK and SE reported some use of bathymetric surfaces; CA had been using them for some time.

14.6.3. INF3: Use of topography and other items of interest **(UK)**

It was recommended that this paper should be presented at the next meetings of TSMADWG and DIPWG.

ACTION 58: Secretary to advise Chairman/Secretary of TSMADWG and DIPWG that it would be useful to include INF3 at their next meeting.

14.6.4. INF4: CSPCWG INT1 Register (AU)

J Wootton explained that the paper (which had been produced by T Richardson, UK) went too far in its suggestion of producing a register of INT1 symbols, rather than references. This possibility had been previously rejected by CSPCWG as there is no defined international symbol set available. However, a register of INT1 references may be useful. He would raise this possibility with the registry manager and present a sample of how it might be organized at the next CSPCWG meeting.

ACTION 59: AU to produce a sample INT1 register for next meeting.

14.7. Other items briefly reported:

- The latest IALA-AISM 'Maritime Buoyage System (MBS) and other Aids to Navigation' booklet (following the 2010 review) had been reviewed by the Secretary at the request of IHB. The only change to the IALA MBS was the addition of the Emergency Wreck Marking Buoy which has already been included in S-4 and INT1. The booklet now also includes a brief section on 'Other marks' which are not actually part of MBS: leading lights, sector lights, lighthouses, beacons, major floating aids and auxiliary marks. This has no impact on S-4 or INT1.
- QR codes are now appearing on various HO products, including:
 - US charts, leading to real time tidal information. NOAA is engaged in a publicity campaign seeking user feedback.
 - NO charts leading to NMs

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- FR INT1, leading to the digital version
- DE are planning the use of QR codes on small craft charts, leading to updates.
- The Chairman noted that Malcolm Nelson (ZA) would be retiring in November 2012 and Maarten de Graaf (NL) would be retiring in May 2013. Both were founder members of CSPCWG and Maarten had also served on the predecessor group CSC. Unfortunately, neither had been able to attend this meeting in Korea, so the Chairman undertook to send a message of best wishes on their retirements, on behalf of CSPCWG.
- Namhoon Kim (KR) has emailed a copy of the CSPCWG9 group photograph to all participants.

15. Date, duration and venue of next meeting

The meeting participants agreed that another meeting is required, of similar duration; 3½ days (compared to previous 3 days) allows a more measured progress through the agenda and for adequate discussion time, which had been appreciated at this meeting.

The Chairman noted that as HSSC had now established its intention to meet in November, this very much restricted the opportunity for CSPCWG to meet in November. December is not usually a practical month in which to meet (eg holidays, increased travel costs), so he suggested moving to January. HSSC does not desire its WGs to meet within a period of 9 weeks prior to HSSC, which rules out September and October.

An invitation had been received from New Zealand to host CSPCWG10 in January 2014 and this was gladly accepted. The Chairman undertook to agree a date with NZ, preference being expressed for weeks commencing 13 or 20 January. M Huet mentioned that IHB are trying to establish a schedule of meeting two years ahead, so recommended that the date should be fixed as soon as possible.

S Spohn offered for DE to host CSPCWG11, date to be determined.

ACTION 60: Chairman to arrange date of next meeting with NZ.

After-meeting note: Date of CSPCWG10 confirmed as week commencing 20 January 2014, in Wellington, New Zealand.

The Chairman thanked everyone for their attendance and input and closed the meeting at 1130 on Friday 16 November.

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Annex A to CSPCWG9 Record

Agenda for 9th CSPCWG MEETING Seoul, Republic of Korea, 13-16 November 2012

1. **Welcome, Introductions and Administrative Arrangements**
Docs: CSPCWG9-01A rev 1 List of documents
CSPCWG9-01B rev 1 List of meeting participants and WG members
2. **Approval of Agenda**
Docs: CSPCWG9-02A rev 4 Agenda
3. **Status of Actions from CSPCWG8**
Docs: CSPCWG9-03A rev 1 Status of actions from CSPCWG8
4. **Relationship with HSSC and subordinate groups**
 - 4.1. **Notes from HSSC4 (Chairman)**
Docs: CSPCWG9-04.1A CSPCWG report to HSSC4
CSPCWG9-04.1B Report from HSSC4 - Notes by CSPCWG Chairman
 - 4.2. **DIPWG (Vice Chairman)**
Docs: CSPCWG9-04.2A Report to CSPCWG9 on DIPWG activities
 - 4.3. **TSMAD (Vice Chairman)**
Docs: CSPCWG9-04.3A Report to CSPCWG9 on TSMADWG activities
 - 4.4. **DQWG (Chairman)**
Docs: CSPCWG9-04.4A Report to CSPCWG9 on DQWG activities
 - 4.5. **HDWG**
 - 4.5.1. **Report from HDWG (Vice Chairman)**
 - 4.5.2. **Definitions of height, elevation and altitude (Chairman)**
CSPCWG9-04.5A Report to CSPCWG9 on HDWG activities
CSPCWG9-04.5B Definitions of height, elevation & altitude
5. **Terms of Reference**
Docs: CSPCWG9-05A CSPCWG TOR
6. **CSPCWG procedures**
Docs: CSPCWG9-06A CSPCWG Procedures
7. **CSPCWG work plan**
 - 7.1. **Summary of progress (Sec)**
Docs: CSPCWG9-07A Work Plan updated for HSSC4
8. **Chart content:**
 - 8.1. **Update on lights matters: Major, Dir., Group v Int for VQ lights (UK, FR)**
Docs: CSPCWG9-08.1A Definitions of 'major' lights; sector width of direction lights
CSPCWG9-08.1B Group and Interrupted Q, VQ and UQ lights
CSPCWG9-08.1C Lights classification
CSPCWG9-08.1D Outstanding issues from CSPCWG Letter 08/2012
 - 8.2. **Light vessels (UK)**
Docs: CSPCWG9-08.2A Light vessels
 - 8.3. **Submerged posts and piles (US)**
Docs: CSPCWG9-08.3A [no paper received]
 - 8.4. **Disused lighthouses (SE)**
Docs: CSPCWG9-08.4A Disused lighthouses with minor structures

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- 8.5. Magenta v green 'no entry' symbols **(UK)**
Docs: CSPCWG9-08.5A *'No Entry' symbols*
- 8.6. Depth quality indicators (see WG Ltrs 7 and 12/12) **(Chairman, FR)**
Docs: CSPCWG9-08.6A *Depth quality indicators*
CSPCWG9-08.6B *Use of abbreviations PA, PD*
- 8.7. Hovercraft and WIG effect craft routes **(KR)**
Docs: CSPCWG9-08.7A *Hovercraft and WIG effect craft routes*
- 8.8. Radio-activated fog signals **(US)**
Docs: CSPCWG9-08.8A *Radio-activated fog signals*
- 8.9. Toroidal buoys **(UK)**
Docs: CSPCWG9-08.9A *Toroidal buoys*
- 8.10. Submarine cables **(UK)**
Docs: CSPCWG9-08.10A *Submarine cables*
- 8.11. Use of symbol K27 (swept wreck) **(UK)**
Docs: CSPCWG9-08.11A *'Swept depth' symbol*
- 8.12. Underwater moorings **(UK)**
Docs: CSPCWG9-08.12A *Underwater moorings*
- 8.13. References to ENC on paper charts **(UK)**
Docs: CSPCWG9-08.13A *References to ENC on paper charts*
- 8.14. Maximum draught areas **(IT)**
Docs: CSPCWG9-08.14A *Maximum draught areas*
- 8.15. Clarification about artificial or natural obstructions **(IT)**
Docs: CSPCWG9-08.15A *Obstructions*
- 8.16. Trawling prohibited **(IT)**
Docs: CSPCWG9-08.16A *Trawling prohibited*
- 8.17. Symbol for footbridge **(SE)**
Docs: CSPCWG9-08.17A *International symbol for footbridge*
- 8.18. Spot heights and contours **(FR)**
Docs: CSPCWG9-08.18A *Use of spot heights and contours*
- 8.19. Representation of depths **(FR)**
Docs: CSPCWG9-08.19A *Representation of depths*
- 8.20. Representation of non-regulated fairway **(FR)**
Docs: CSPCWG9-08.20A *Representation of fairway*
- 8.21. Spoil Grounds **(DE)**
Docs: CSPCWG9-08.21A *Depth information in spoil grounds*
- 8.22. Maintained / Dredged Areas **(AU/UK)**
Docs: CSPCWG9-08.22A *Maintained / Dredged Areas*
- 9. S-4**
- 9.1. Clarification on obsolete symbols **(Sec)**
Docs: CSPCWG9-09.1A *Retention of obsolescent symbols in S-4*
- 9.2. Specification on text styles **(AU)**
Docs: CSPCWG9-09.2A *Text styles*
- 9.3. Recommendations for compilation practice (large scales first?)
(Chairman)
Docs: CSPCWG9-09.3A *Recommendations for compilation practice (large scales first?)*
- 9.4. Strengthening requirement to construct charts on WGS84 **(Chairman)**
Docs: CSPCWG9-09.4A *Strengthening requirement to construct charts on WGS84*
- 9.5. Layout of S-4 (eg remove blank pages, index to Part C?) **(Sec)**
Docs: CSPCWG9-09.5A *Layout of S-4*
- 9.6. Impact and value of B-600? **(Chairman)**
Docs: CSPCWG9-09.6A *Impact and value of S-4 Part B-600, Chart Maintenance*
- 9.7. Nautical chart copyright **(DK)**

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- Docs: CSPCWG9-09.7A Consideration of a legal case in Denmark*
9.8. Late comments on B-300 revision **(Chairman)**

10. Other CSPCWG publications

- 10.1. S-11 Part A
Docs: CSPCWG9-10.1A S-11 Part A
10.2. Discussion on INT charting **(Chairman)**
10.3. S-49

11. INT 1 / 2 / 3

- 11.1. Report from Secretary of INT1 subWG **(Sec)**
Docs: CSPCWG9-11.1A INT1 subWG Report
11.2. ENC symbols: status reports on paper guides
11.2.1. P/ECDIS **(US)**
Docs: CSPCWG9-11.2.1A P/ECDIS U.S. Chart No. 1
11.2.2. NP5012 **(UK)**
11.3. Maritime limits – tint bands
Docs: CSPCWG9-11.3A Maritime limits – tint bands

12. Lessons learned from Marine Incidents

- 12.1. Rocknes **(NO)**
12.2. Clipper Adventurer **(CA)**

13. Review of Actions and Work Plan

- 13.1. Actions
13.2. New items for Work Plan
13.3. Priorities
13.4. Timescales for tasks

14. Any Other Business

- 14.1. Further update on outcomes from using ENC data from other nations to update charts – extension of area **(SE)**
14.2. Reports from WG members (including non-attendees)
14.3. Items to bring to attention of HSSC
14.4. Election of CSPCWG officers **(M Huet)**
*Docs: CSPCWG9-14.4A Election of Officers
CSPCWG9-14.4B rev1 Candidates*
14.5. Technical seminar: chart scheming (if participants wish)
14.6. INF papers:
14.6.1. INF1: IEC 80/661/CD Maritime navigation and radiocommunication equipment and systems (draft – unnumbered pdf document: see pages 76-77 symbols for shipborne navigational systems: AIS) **(UK)**
14.6.2. INF2: Use of bathymetric surfaces **(UK)**
14.6.3. INF3: Use of topography and other items of interest **(UK)**
14.6.4. INF4: CSPCWG INT1 Register **(UK)**
14.7. Other items briefly reported

15. Date, duration and venue of next meeting

9th IHO-CSPCWG Meeting

Annex B to CSPCWG9 Record

9th CSPWG MEETING Seoul, Republic of Korea, 13-16 November, 2012

Documents list

CSPCWG9-01A rev 2	List of documents
CSPCWG9-01B rev 1	List of meeting participants and WG members
CSPCWG9-02A rev 5	Agenda
CSPCWG9-03A rev 1	Status of actions from CSPCWG8
CSPCWG9-04.1A	CSPCWG report to HSSC3
CSPCWG9-04.1B	Report from HSSC3 - Notes by CSPCWG Chairman
CSPCWG9-04.2A	Report to CSPCWG8 on DIPWG activities
CSPCWG9-04.3A	Report to CSPCWG8 on TSMADWG activities
CSPCWG9-04.4A	Report to CSPCWG9 on DQWG activities
CSPCWG9-04.5A	Report to CSPCWG8 on HDWG activities
CSPCWG9-04.5B	Definitions of height, elevation & altitude
CSPCWG9-05A	CSPCWG TOR
CSPCWG9-06A	CSPCWG Procedures
CSPCWG9-07A	Work Plan updated for HSSC4
CSPCWG9-08.1A	Definitions of 'major' lights; sector width of direction lights
CSPCWG9-08.1B	Group and Interrupted Q, VQ and UQ lights
CSPCWG9-08.1C	Lights classification
CSPCWG9-08.1D	Outstanding issues from CSPCWG Letter 08/2012
CSPCWG9-08.2A	Light vessels
CSPCWG9-08.3A	[not received]
CSPCWG9-08.4A	Disused lighthouses with minor structures
CSPCWG9-08.5A	'No Entry' symbols
CSPCWG9-08.6A	Depth Quality indicators
CSPCWG9-08.6B	Use of abbreviations PA, PD
CSPCWG9-08.7A	Hovercraft and WIG effect craft routes
CSPCWG9-08.8A	Radio-activated fog signals
CSPCWG9-08.9A	Toroidal buoys
CSPCWG9-08.10A	Submarine cables
CSPCWG9-08.11A	'Swept depth' symbol
CSPCWG9-08.12A	Underwater moorings
CSPCWG9-08.13A	References to ENC on paper charts
CSPCWG9-08.14A	Maximum draught areas
CSPCWG9-08.15A	Obstructions
CSPCWG9-08.16A	Trawling prohibited
CSPCWG9-08.17A	International symbol for footbridge
CSPCWG9-08.18A	Use of spot heights and contours
CSPCWG9-08.19A	Representation of depths
CSPCWG9-08.20A	Representation of fairway
CSPCWG9-08.21A	Depth information in spoil grounds
CSPCWG9-08.22A	Maintained / Dredged areas
CSPCWG9-09.1A	Retention of obsolescent symbols in S-4
CSPCWG9-09.2A	Text styles

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CSPCWG9-09.3A	Recommendations for compilation practice (large scales first?)
CSPCWG9-09.4A	Strengthening requirement to construct charts on WGS84
CSPCWG9-09.5A	Layout of S-4
CSPCWG9-09.6A	Impact and value of S-4 Part B-600, Chart Maintenance
CSPCWG9-09.7A	Consideration of a legal case in Denmark
CSPCWG9-10.1A	S-11 Part A
CSPCWG9-11.1A	INT1 subWG Report
CSPCWG9-11.2.1A	P/ECDIS U.S. Chart No.1
CSPCWG9-11.3A	Maritime limits – tint bands
CSPCWG9-14.4A	Election of Officers
CSPCWG9-14.4B rev 1	List of candidates
CSPCWG9-INF1:	IEC 80/661/CD Maritime navigation and radiocommunication equipment and systems (draft – unnumbered pdf document: see pages 76-77)
CSPCWG9-INF2:	Use of bathymetric surfaces
CSPCWG9-INF3:	Use of topography and other items of interest
CSPCWG9-INF4:	INT1 Register

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Annex C to CSPCWG9 Record

9th CSPCWG MEETING
Seoul, Republic of Korea, 13-16 November, 2012

PARTICIPANTS AT CSPCWG9

Member State	Name	email
Australia	Mr Jeff WOOTTON (Vice-Chairman)	jeff.wootton@defence.gov.au
Brazil	LtCdr Vicente BARROSO Junior	barroso@chm.mar.mil.br
Canada	Mr David PRINCE	Dave.Prince@dfo-mpo.gc.ca
Denmark	Mrs Berit HOLSE	bes@kms.dk
Finland	Mr Mikko HOVI	mikko.hovi@fta.fi
France	Mr Olivier PARVILLERS	olivier.parvillers@shom.fr
Germany	Ms Sylvia SPOHN	sylvia.spohn@bsh.de
Japan	Mr Takayuki KAWAI	ico@jodc.go.jp
Korea (rep of)	Mr Shin-Ho CHOI Mr Jeonggi KIM Mr Jaeyeon LEE Mr Changho LEE Mr Namhoon KIM	infokhoa@korea.kr
Norway	Mrs Inger TELLEFSEN	inger.tellefsen@statkart.no
Spain	Cdr Álvaro GUITART	ihmesp@fn.mde.es
Sweden	Mr Magnus WALLHAGEN	Magnus.Wallhagen@sjofartsverket.se
Turkey	Lt Ümit GÖRÜR	ugorur@shodb.gov.tr
United Kingdom	Mr Peter JONES (Chairman)	peter.jones@ukho.gov.uk
	Mr Andrew HEATH-COLEMAN (Secretary)	andrew.coleman@ukho.gov.uk
USA	Mr Robert HEELEY (NOAA)	robert.heeley@noaa.gov
	Miss Jacqueline BARONE (NGA)	jacqueline.barone@nga.mil
IHB	Mr Michel HUET	michel.huet@iho.int
Industry		
Jeppesen	Justin HORNBY	justin.hornby@jeppesen.com
KODCO	Mr Jon-Kwon YEO	The attendance of Korean industry representatives varied during the meeting. The names listed are those advised before the meeting. Email addresses are not available.
KESTI	Mr Il-Hwa JEONG Ms Mi-Young JANG	
UST21	Mr Hyun-Sik SHIN Mr Sung-Jin KANG	
KOSEC	Ms Mi-Ae LEE Mr Moon-Yong JUNG	

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Annex D to CSPCWG8 Record

**9th CSPWG MEETING
Seoul, Republic of Korea, 13-16 November, 2012**

ACTIONS

No	Agenda item	Action	Delegate	Status
1.	3	Secretary to produce draft report of CSPCWG9 by end of December 2012, for participants to approve.	Sec	
2.	3	All WG members to make early bids for travel budget to CSPCWG10; advise Chairman if any difficulties.	All WG members	
3.	3	All WG members to note agenda items for CSPCWG10 throughout the year (and forward to Secretary as they arise). ENs may be sent before meeting calling letter.	All WG members	
4.	4.2	J Wootton to ask DIPWG to take into consideration the portrayal of non-IALA buoys, and to widen discussion of 'real-world' items versus 'intended purpose' to include CSPCWG and possibly others.	AU	
5.	4.5.1	IHB to make representation to Microsoft to include the word 'hydrographic' in on-line dictionaries.	M Huet	
6.	4.5.2	Secretary to include definitions of height and elevation in accordance with HSSC4-05.9B in the revision of S-4 B-300 and explain in CL. (Also highlight in WG Letter covering report of this meeting).	Sec	
7.	5	IHB to amend TOR para 2 as instructed by HSSC (wording in paper CSPCWG9-05A Annex).	M Huet	
8.	6	Secretary to amend CSPCWG procedures as drafted in paper CSPCWG9-06A Annex: <ul style="list-style-type: none"> • Delete fax alternative • Remove 'Technical' in front of 'Resolution' • Add reference to CL20/12. 	Sec	
9.	7	Secretary to remove items reported as completed to HSSC4 from work plan.	Sec	
10.	8.1	Secretary to consider all references to 'major' lights in S-4 with a view to enhancing the guidance in line with the 2 nd proposed 'definition' in CSPCWG9-08.1A.	Sec	
11.	8.1	INT1 subWG to remove references to 'major' and 'minor' lights from the term at P1; instead, just refer to 'position of light'.	INT1 subWG	
12.	8.1	Secretary to draft clarification on application of 'Dir' to lights with sectors which are too narrow to chart.	Sec	

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No	Agenda item	Action	Delegate	Status
13.	8.1	Secretary to inform IALA of CSPCWG preference for usage of VQ and discontinuation of IVQ.	Sec	
14.	8.1	IHB to consider how S-12 should be updated.	M Huet	
15.	8.1	Secretary to draft a CL for Member States approval on the 'generic' magenta flare.	Sec	
16.	8.1	Secretary to clarify the guidance on charting multicoloured lights in accordance with WG letter 08/2012 and the changes agreed.	Sec	
17.	8.1	Secretary to circulate draft S-4 entry on 'highlighting' by WG Letter, for review, before preparing for MS.	Sec	
18.	8.2	Secretary to draft revision on light vessels in S-4 for WG review. [New work plan item]	Sec	
19.	8.2	INTsubWG to consider where and how to include a simplified version of the old light vessel symbol in INT1; also to review placement of other floating light structures.	INT1subWG	
20.	8.2	Secretary to ask IALA to advise whether 'LANBY's still exist.	Sec	
21.	8.4	Secretary to clarify B-457.3 parenthesis to include examples 'BnTr' and 'Bn in general'.	Sec	
22.	8.5	AU to continue discussion on dividing regulatory from navigational restrictions (for S-101), keeping Secretary informed.	AU	
23.	8.5	Secretary to draft proposals for S-4 based on resolution of discussions at Action 22.	Sec	
24.	8.6	Secretary to draft proposal to improve guidance in S-4 on discontinuities between surveys.	Sec	
25.	8.6	INT1subWG to consider whether some explanation of the break could be added (possibly in I25).	INT1subWG	
26.	8.6	INT1subWG to consider options to add CATZOC explanatory table to INT1.	INT1subWG	
27.	8.6	INT1subWG to amend K3/30 in accordance with NZ wording.	INT1subWG	
28.	8.6	INT1subWG to review whether terms for data quality indicators can be clarified.	INT1subWG	
29.	8.6	INT1subWG to make I4 obsolescent.	INT1subWG	
30.	8.6	Secretary to draft revised wording on 'Rep', to remove danger line for depths >30m.	Sec	
31.	8.6	INT1subWG to consider options, consequences and scope of rearranging INT1. J Wootton to also contribute.	INT1subWG, AU	
32.	8.7	KR to advise WG on further developments with WIG services.	KR	

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No	Agenda item	Action	Delegate	Status
33.	8.8	All WG members to advise whether the use of radio-activated fog signals is likely to be implemented in their waters.	All WG	
34.	8.9	Secretary to clarify B-462.5 to include 'toroidal-shaped' buoys. [New work plan item]	Sec	
35.	8.10	Secretary to include two clarifications in S-4 re charting of submarine cables (NMs, disused).	Sec	
36.	8.14	Secretary to draft new specification on maximum draught and minimum depth (and consider placement in S-4). [New work plan item]	Sec	
37.	8.14	INT1subWG to include symbols for maximum draught and minimum depth at I26/27.	INT1subWG	
38.	8.17	Secretary to draft new specification for 'footbridge' (and bridge on smaller scale charts). (Include as annex to meeting record letter). [New work plan item]	Sec	
39.	8.17	INT1subWG to include new footbridge symbol by splitting D20 (move vertical clearance to D22).	INT1subWG	
40.	8.18	Secretary to draft clarifications on application of contours and spot heights in B-300. (Include as annex to meeting record letter).	Sec	
41.	8.19	Secretary to draft clarification on sounding selection. (Include as annex to meeting record letter).	Sec	
42.	8.20	Secretary to draft addition to B-415.2 (cross-referenced to B-434.5) for showing survey limits in exceptional circumstances.	Sec	
43.	8.22	Secretary and AU to continue consulting about charting of dredged areas to produce a detailed proposal for WG consideration.	Sec, AU	
44.	9.1	Secretary to include clarification for removal of obsolescent symbols from S-4 in next edition of S-4.	Sec	
45.	9.2	Secretary to include clarification for convention on upright and sloping text styles in next edition of S-4.	Sec	
46.	9.3	Secretary to consider appropriate placement and draft guidance about updating large scale charts first. [New work plan item]	Sec	
47.	9.4	Chairman to review where and how the principle of referring all charts to WGS84 can be expressed in S-4 (ready for HSSC approval).	Chairman	
48.	9.4	IHB to consult on whether 'WGS84' is the best term to use for horizontal datum reference for all charts (paper and electronic).	M Huet	
49.	9.5	Secretary to remove index to S-4 Part C at next NE (and include a clear 'end' to S-4 in its place).	Sec	

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No	Agenda item	Action	Delegate	Status
50.	9.6	All WG members to advise Secretary whether, with experience, any improvements should be made to S-4 B-600.	All	
51.	9.8	Secretary to draft a new specification for underwater volcanic action (and consider placement in S-4). [New work plan item]	Sec	
52.	9.8	Secretary to include clarification on land boundary symbols in next edition of S-4.	Sec	
53.	10.2	DP/JW/MW to consult and prepare a paper on the future of the paper chart.	DP/JW/MW	
54.	10.2	Chairman/Secretary to revisit previous discussion about the naming of this working group and draft a new proposal	Chair/Sec	
55.	10.3	Secretary to update table at A-204.2 for INT numbers allocated to Arctic region.	Sec	
56.	13	Secretary & Chairman to update Work Plan and include in record of meeting.	Chair/Sec	
57.	14.3	Chairman to bring these items to the attention of HSSC	Chair	
58.	14.6	Secretary to advise Chairman/Secretary of TSMAD and DIPWG that it would be useful to include INF3 at their next meeting.	Sec	
59.	14.6	AU to produce a sample INT1 register for next meeting.	AU	
60.	15	Chairman to arrange date of next meeting with NZ.	Chair	Done (after meeting note refers)

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Annex E to CSPCWG9 Record

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CSPCWG Work Plan

November 2012
(updated following CSPCWG9)

- *Objectives, Tasks and Work Items are pursued in accordance with IHO Work Programme 2013-2017, Programme 2 (Services and Standards):*
 - *Element 2.3. Nautical Cartography:*
 - *Task 2.3.1 Conduct annual meetings of relevant HSSC WGs dealing with nautical cartography.*
 - *Task 2.3.2 Maintain and extend the relevant IHO standards, specifications and publications.*
- *The focus is on maintaining and enhancing cartographic standards and specifications for nautical charts to suit the needs of the modern mariner in support of safe navigation and protection of the marine environment.*
- *As a Plan it will and should evolve; accordingly, contributions from WG members and others are welcomed at any time.*

CSPCWG Tasks

A	Maintain and extend Publication S-4 'Chart Specifications of the IHO & Regulations of the IHO for INT Charts' (IHO Task 2.3.2 refers)
B	Maintain and extend Publication S-11 Part A 'Guidance for the Preparation and Maintenance of INT Chart schemes' (IHO Task 2.3.2 refers)
D	Development of new (and revised) symbology (IHO Task 2.3.2 refers)
E	Maintenance of S-4 supplementary publications INT 1, 2 & 3 (IHO Task 2.3.2 refers)
F	Revise, develop and maintain S-49 'Recommendations concerning Mariners' Routeing Guides' (IHO Task 2.3.2 refers)
G	Conduct annual meetings of CSPCWG (IHO Task 2.3.1 refers)

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No	Work item	Priority H-high M-medium L-low	Next Milestone	Start Date	End Date	Status P-Planned O-Ongoing C-Completed	Contact Person(s)	Affected Pubs/Standard	Remarks
A.5.1	Revise S-4 Part B Section 300-330	H	IHO CL for M/S approval	2010	2013	O	Sec CSPCWG	S-4 / B-300	WG Ltr 9/12
A.5.2	Revise S-4 Part B Section 340-390	H	IHO CL for M/S approval	2011	2013	O	Sec CSPCWG	S-4 / B-300	WG Ltr 9/12
A.6	Revise S-4 Part B Section 500	M	WG Ltr	2012	2013	O	Sec CSPCWG	S-4 / B-500	Draft in prep
A.11	Clarify guidance on dredged/maintained areas	M	WG Ltr	2011	2013	O	Sec CSPCWG	S-4, INT1?	CSPCWG9 Action 43
A.12	Provide guidance on charting toroidal shaped buoys	M	Draft to WG	2012	2013	O			CSPCWG9 Action 34
A13	Provide guidance on charting maximum authorized draught	M	Draft to WG	2012	2013	O			CSPCWG9 Action 36
A14	Provide guidance on updating large scale charts first	M	Draft to WG	2012	2013	O			CSPCWG9 Action 46
A15	Provide guidance on charting underwater volcanic activity	M	Draft to WG	2012	2013	O			CSPCWG9 Action 51
B.3	Develop guidelines for preparation & maintenance of small / medium scale ENC schemes.	H	NSEHWG work plan item	2009	2014	O	Chair CSPCWG	S-11 / S-65 ?	Passed to NSEHWG for assistance; keep WENDWGTF engaged
D 27	Revise guidance on Marine Farm limits	H	Next edition S-4	2011	2013	O	Sec CSPCWG	S-4, INT1	WG Ltrs 6 & 11/12

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D 28	Revise guidance on FPSO safety zones	M	IHO CL for M/S approval	2011	2013	O	Sec CSPCWG	S-4	WG Ltr 6 & 11/12
D 29	Clarify guidance on safe vertical clearances	M	IHO CL for M/S approval of B-300	2011	2013	O	Sec CSPCWG	S-4	WG Ltr 9/12
D 30	Guidance for post-disaster highlighting of new surveys	M	IHO CL for M/S approval	2011	2013	O	Sec CSPCWG	S-4	WG Ltr 6 & 11/12
D 31	Analysis of DQWG user questionnaire on quality indicators & symbols	M	No further action	2012	2013	C	Chair CSPCWG	S-4, INT 1	Final discussions held at CSPCWG9
D32	Lights issues: <ul style="list-style-type: none"> • Major lights • Direction lights • Interrupted lights • Generic light flare • Highlighting • Reinstate (simplified) symbol for light vessels 	M	Draft to WG	2012	2013	O			CSPCWG9 Actions: <ul style="list-style-type: none"> • 10, • 12, • 13, • 15, • 17, • 18
D33	Footbridges / bridges on small scale charts	L	Draft to WG and M/S approval of B-300	2012	2013	O			CSPCWG9 Action 38
E.1	Maintain official INT 1s		Next editions when planned; subWG consultation				DE: S Spohn FR: O Parvillers ES: A Guitart	INT 1	English version 2011 (Ed 7) French version 2012 (Ed 5) Spanish version 2011 (Ed 4)
E.4	Symbols for vacant entries in INT 1	L	Review when A5.2 completed	2013		P	Sec CSPCWG	INT 1, S-4 part B	INT1 subWG next meeting

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E8	Reorganize INT1 to exclude composite symbols	L	Next round of NEs of INT1			P	INT1 subWG	INT1	Subsumed in CSPCWG9 Action 31
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G. CSPCWG Meetings (IHO T2.3.1 refers)

Date	Location	Meeting
03-05 Nov 04	IHB, Monaco	CSPCWG 1
19-21 Oct 05	IHB, Monaco	CSPCWG 2
22-24 Nov 06	IHB, Monaco	CSPCWG 3
13-15 Nov 07	IHB, Monaco	CSPCWG 4
18-21 Nov 08	Sydney, Australia	CSPCWG 5
01-03 Dec 09	IHB, Monaco	CSPCWG 6
23-26 Nov 10	Simon's Town, S Africa	CSPCWG 7
29 Nov–02 Dec 11	Turku, Finland	CSPCWG 8
13-16 Nov 12	Seoul, Rep of Korea	CSPGWG 9
w/c 20 Jan 2014	Wellington, New Zealand	CSPCWG 10
2015	Rostock, Germany	CSPCWG 11

Chairman: Peter JONES (UK)

Vice Chairman: Jeff Wootton (AU)

Secretary: Andrew Heath-Coleman (UK)

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Seoul, Republic of Korea, 13-16 November, 2012

LIST OF ACRONYMS AND ABBREVIATIONS USED AT CSPCWG9
(excludes international abbreviations listed in S-4 B-122)

AIS	Automatic Identification System
AU	Australia
BR	Brazil
BSHC	Baltic Sea Hydrographic Commission
CA	Canada
CATZOC	Category of Zone of Confidence
CL	Circular Letter (of IHO)
CSC	(Former) Chart Standardization Committee (of IHO)
CSPCWG	Chart Standardization and Paper Chart WG (of HSSC)
DE	Germany
DIPWG	Digital Information Portrayal Working Group (of HSSC)
Dir	Direction (light)
DK	Denmark
doc	CSPCWG9 document or paper associated with the meeting
DQWG	Data Quality Working Group(of HSSC)
ECDIS	Electronic Chart Display and Information System
EN	Explanatory note
ENC	Electronic Navigational Chart
ES	Spain
ESRI	Environmental Systems Research Institute
FI	Finland
FR	France
GNSS	Global Navigation Satellite System
HDWG	Hydrographic Dictionary Working Group (of HSSC)
HO	Hydrographic Office
HSSC	Hydrographic Services and Standards Committee (of IHO)
IALA	International Association of Marine Aids to Navigation and Lighthouse Authorities
IHB	International Hydrographic Bureau
IHO	International Hydrographic Organization
INF	Information paper associated with the meeting
INT	International
INT1	Symbols, Abbreviations, Terms used on Charts
INT2	Borders, Graduations, Grids and Linear Scales
INT3	Use of Symbols and Abbreviations - standard reference chart
ISO	International Organization for Standardization
JP	Japan
KHOA	Korean Hydrographic and Oceanographic Administration
KR	Republic of Korea
MBS	Maritime Buoyage System
MRG	Mariners' Routeing Guide

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MS	Member State (of IHO)
NGA	National Geospatial-Intelligence Agency (USA)
NL	Netherlands
NM	Notice to Mariners
NO	Norway
NOAA	National Oceanic and Atmospheric Administration (USA)
NSEHWG	North Sea ENC Harmonization Working Group
QR	Quick Response (codes)
rev	Revision
RHC	Regional Hydrographic Commission
S-4	Chart Specifications of the IHO and Regulations for International (INT) Charts
S-32	Hydrographic Dictionary
S-49	Guidance for Mariners' Routeing Guides
S-100	IHO Geospatial Standard for Hydrographic data
S-101	ENC Product Specification (currently draft)
S-102	Bathymetric Surface Product Specification
SE	Sweden
Sec	Secretary (of CSPCWG)
(T)NM	Temporary Notice to Mariners
TOR	Terms of Reference
TR	Turkey
TSMADWG	Transfer Standard Maintenance and Application Development Working Group (of HSSC)
UK	United Kingdom of Great Britain and Northern Ireland
US	United States of America
WENDWG	World-wide ENC Database Working Group
WG	Working Group (of IHO)
WGS84	World Geodetic System (1984 Epoch)
WIG	Wing in Ground
ZA	South Africa