

## Paper for Consideration by the HSSC Chair Group

### NCWG Input into the IHO Strategic Plan

<b>Submitted by:</b>	NCWG Chair
<b>Executive Summary:</b>	This paper provides discussion items from the NCWG for the June 2016 HSSC Chair Group Meeting to discuss inputs into the IHO Strategic Plan and 3 Year Work Programme
<b>Related Documents:</b>	NCWG2-04.1C <i>NCWG Input to the Strategic Plan and IHO 3 Year WP</i>
<b>Related Projects:</b>	N/A

### Introduction / Background

1. Action HSSC7/05 required “**Chairs of HSSC WGs** to collect the views of their members on the IHO Strategic Plan and IHO 3-year Programme of Work” to assist with discussions at the HSSC Chair Group meeting in June 2016. Accordingly, the Chair of the NCWG prepared paper NCWG2-04.1C – *NCWG Input to the Strategic Plan and IHO 3 Year WP* for discussion at the NCWG2 meeting (26-29 April 2016). This Paper provides the summary of the views expressed at the NCWG2 meeting by the Working Group members present at the meeting to satisfy Action HSSC7/05, with additional discussion items added as a result of correspondence with the full NCWG membership since NCWG2.

### Analysis/Discussion

2. To inform discussions at NCWG2, Paper NCWG2-04.1C – *NCWG Input to the Strategic Plan and IHO 3 Year WP* included the initial views of the NCWG Chair in regard to future priorities for the NCWG. These are listed in the Paper (in no particular order) as follows:

- The future of the paper chart as a primary navigation tool.
- Transition to development and testing of ECDIS symbols in addition to paper chart symbols.
- Portrayal requirements related to display of other products in ECDIS in addition to ENC (interoperability).
- Changing requirements in nautical cartography for mariners navigating using ECDIS as their primary navigation tool.
- The future direction of S-4.

3. Discussions at NCWG2 resulted in agreement in principle with these priorities, with some minor amendments and expansion made to the wording of the above list as follows (taken from amended slide associated with accompanying presentation):

### Future priorities of the NCWG

- + What is the future of the paper chart as a primary navigation tool?
- + Transition to development and testing of ECDIS symbols for emerging requirements in addition to paper chart symbols.
- + Portrayal requirements related to display of other (non-navigational) products in ECDIS in addition to ENC (interoperability).
- + Changing requirements in nautical cartography for mariners navigating using ECDIS as their primary navigation tool.
- + The future of format, function and scope of S-4 as the chart specifications of the IHO.
- + Minimum content for charts of any format.



4. The resultant recommendations within this paper are principally related to the recognition and role of nautical cartography as one of the core disciplines in the delivery of hydrographic related data, products and services. Additional items for possible consideration of the HSSC Chair Group are also included as identified during discussions and the review of the current Strategic Plan and 5-Year Work Programme.

5. Strategic Plan: Overall, the terminology used in the IHO Strategic Plan is generic, which is to be expected in such a high level document. From this perspective reference to nautical cartography would be considered as too specific in the context of this document.

5.1 It is considered that the Vision, Mission and Object of the IHO; Strategic Assumptions and Directions; Ways and Means; Risk Management Policy and Process; and Responsibilities of IHO Organs (IHB, HSSC and IRCC) as outlined in the Strategic Plan (2009) remain relevant, and therefore no changes are recommended by the NCWG.

5.2 A concern that has been raised at the last 2 NCWG meetings is the world-wide retention of experienced and competent nautical cartographers, and the availability of relevant and adequate training in the discipline of cartography (particularly at the national level). It is suggested that consideration be given to the addition of a new Strategic Performance Indicator, possibly under Objective (c), as a measure of this retention, possibly via feedback from the RHCs.

5.3 At the recent INT Chart Coordinators Workshop hosted at the IHB, it was determined that the INT Chart concept is still valid and relevant. However consideration needs to be given to the future of the INT Chart concept, and possible harmonisation/alignment with the development of "international" ENC schemes as coordinated by the RHCs.

5.4 Although out of scope of the NCWG and HSSC, the following additional comments are offered in relation to the IHO Performance Indicators:

- SPI2: Question whether quarterly reporting is still relevant. Consider that this could be amended to Yearly.
- SPI2; WPI15,16: Question whether the 01 August 2008 gap in adequate ENC coverage and IHO MS producing and maintaining ENCs is still relevant. Consider that this could be amended to be a simple increase from the previous year.
- With the pending recruitment of a Technical Standards Support Officer (TSSO) at the IHB, perhaps there is scope for a new SPI related to Objective (d), or alternatively this could be incorporated into WPI14.

## 6. 3 Year Work Programme:

6.1 The following is an extract from the IHO Five-Year Work Programme (2013-2017) as adopted at the 18<sup>th</sup> IHC:

### **Element 2.3 Nautical Cartography**

**Objective:** To monitor developments related to nautical cartography for paper nautical charts and the colours, symbols and display rules used to show SENC information on ECDIS, to develop and maintain the relevant IHO standards, specifications and publications, and to provide technical advice as appropriate.

Task	Conduct annual meetings of relevant HSSC WGs dealing with nautical cartography	2013-17	2 meetings per year, 1 PA per meeting
2.3.1			
Task	Maintain and extend the relevant IHO standards, specifications and publications, using contract support assistance as appropriate, including:	2013-17	Contract support: 15K each year
2.3.2			
	- S-4 Chart Specifications of the IHO and Regulations for International (INT) Charts		
	INT 1 - Symbols, Abbreviations and Terms used on Charts		
	INT 2 - Borders, Graduations, Grids and Linear Scales		
	INT 3 - Use of Symbols and Abbreviations		
	- S-11 Part A - Guidance for the Preparation and Maintenance of INT Chart schemes		
	- S-11 Part B - Catalogue of INT Charts		
	- S-49 Standardization of Mariners' Routeing Guides		
	- Digital data updating related elements of Appendix 1 to S-52 - Guidance on Updating the Electronic Navigational Chart		
	- S-52 and its accompanying Presentation Library - Specifications for Chart Content and Display Aspects of ECDIS		
	- Portrayal related elements of S-101 - ENC Product Specification and other S-100-based Product Specifications		

6.2 The updated IHO Work Programme for 2016, as approved by IHO MS via IHO CL 87/2015 (15 December 2015) is as follows:

Strategic Direction	Element / Task	Title	Principal Director	Principal Manager	Alternate Manager	Key deliverables in 2016	Significant risk to delivery	Remarks / Dates / Venue
2	2.3	Nautical Cartography	Objective / Deliverable: To monitor developments related to nautical cartography for paper nautical charts and the colours, symbols and display rules used to show SENC information on ECDIS, to develop and maintain the relevant IHO standards, specifications and publications, and to provide technical advice as appropriate					
	2.3.1	Conduct meetings of Nautical Cartography Working Group	DTech	ADCS	ADDT	Implementation of HSSC Work Plan		NCWG2, Monaco, 26-29 April
	2.3.2	Maintain and extend the relevant IHO standards, specifications and publications, using contract support assistance as appropriate, including:	DTech					
	2.3.2.1	S-4 Chart Specifications of the IHO and Regulations for International (INT) Charts	DTech	ADCS	ADDT	Keep S-4 fit for purpose		Routine maintenance
	2.3.2.2	INT 1 - Symbols, Abbreviations and Terms used on Charts	DTech	ADCS	ADDT	New edition(s) in 2015-2016		
	2.3.2.3	INT 2 - Borders, Graduations, Grids and Linear Scales	DTech	ADCS	ADDT			
	2.3.2.4	INT 3 - Use of Symbols and Abbreviations	DTech	ADCS	ADDT			
	2.3.2.5	S-11 Part A - Guidance for the Preparation and Maintenance of INT Chart schemes	DTech	ADCS	ADDT	New edition of S-11 Part A released in 2016		
	2.3.2.6	S-11 Part B - Catalogue of INT Charts	DTech	ADCS	ADDT	New edition of S-11 Part B database released in 2016		See also 1.2.1.3

6.3 Based on the discussions at NCWG1 and in order to ensure the incorporation of the anticipated future priorities of the NCWG as outlined above, the following observations and proposals are made:

- The Objective/Deliverable is specific in its monitoring of developments related to nautical cartography to paper charts. This is possibly a reason behind much of the misconception by many that the NCWG is just a “paper chart Working Group”. Further, while referring to the “colours, symbols and display rules used to show SENC information on ECDIS”, there is no reflection of this in the listed standards relevant to the WG in the 2016 Work Programme (noting however that this is reflected in the Work Programme adopted at IHC18).
- IHO standards relevant to the NCWG need to be extended to include nautical cartography/portrayal requirements related to other S100-based Product Specifications, including specifically S-52 and S-101 but also “S-10X” and other S-100-based Product Specifications intended for use in ECDIS (Action HSSC7/18). This will also satisfy the requirement above: “Portrayal requirements related to display of other products in ECDIS in addition to ENC (interoperability)”.
- Consideration of a new Element/Task related to the facilitation of discussions on IHO strategies regarding the future of the paper chart, including possible future requirements/options for HOs or service providers to automatically derive a paper chart from an ENC(s) (aligned to HSSC7 decision to address this issue as a high priority of the WG).
- Transition to development and testing of ECDIS symbols in addition to paper chart symbols: Consider that this will be addressed as part of implementation of the first bullet above.
- Changing requirements in nautical cartography for mariners navigating using ECDIS as their primary navigation tool: Consider that this is covered in Task 2.3.2.1, acknowledging the repeated statements throughout S-4 that the standard is intended for charts, no matter what form the chart takes.
- The future of S-4 as the chart specifications of the IHO: As for previous bullet.
- Minimum content for charts of any format: Consider that this will be adequately addressed through a new Task related to discussions on the future of the paper chart.
- S-11 Part B: While S-11 Part B is listed as a specification at Task 2.3.2 (2.3.2.6) under the responsibility of the NCWG, it is questioned whether this is relevant given the commissioning in 2016 of the *INTERNATIONAL Chart Catalogue* web service. Note that NCWG maintenance of S-11 Part B has not been included in the list of standards/specifications in the NCWG Terms of Reference or Work Plan approved at HSSC7.

## 7. Resolution 2/2007:

7.1 The NCWG has been adjusting to the requirements to conform to IHO Resolution 2/2007 since the “special exemption” for approval of changes to S-4 was removed in 2014. As reported at HSSC7, the NCWG has concerns over Resolution 2/2007 being enforced as a “one size fits all” approval process for all IHO Specifications and Standards. From this perspective the NCWG is in support of the observations and recommendation of the S-100WG from its recently conducted survey to consider amendments to the Resolution.

### Conclusions

8. The opinions above and recommendations below reflect those of the NCWG in relation to aligning the future IHO Strategic Plan and Programme of Work with the current and perceived future priorities of the Working Group.

### Recommendations

9. It is recommended that:

9.1 No substantive changes are required to the IHO Strategic Plan in relation to the activities of the NCWG. However, the HSSC Chair Group should consider:

- a. A new SPI/WPI to gauge the level of retention of world-wide nautical cartography experience and competency;
- b. A new Strategic Direction for the future of the INT Chart concept, and possible harmonisation /alignment with the development of “international” ENC schemes;
- c. Amending the reporting period for Performance Indicator SPI2 to yearly;
- d. Amend the measurement of SPI2 and WPIs 15 and 16 to be against the previous years figures, rather than the 01 August 2008 gap in adequate ENC coverage; and
- e. A new or amended SPI/WPI associated with the newly recruited to IHO TSSO “help desk” enquiries.

9.2 The following changes be approved to Element 2.3 (Nautical cartography) of the IHO Work Programme (changes in red):

Strategic Direction	Element / Task	Title	Principal Director	Principal Manager	Alternate Manager	Key deliverables in 2017-2019	Significant risk to delivery	Remarks / Dates / Venue
2	2.3	Nautical Cartography	Objective / Deliverable: To monitor developments related to nautical cartography for <del>paper</del> -nautical charts (regardless of the format that a chart may take) and the colours, symbols and display rules used to show SENC information on ECDIS; to develop and maintain the relevant IHO standards, specifications and publications; and to provide technical advice as appropriate					
	2.3.1	Conduct meetings of Nautical Cartography Working Group	DTech	ADCS	ADDT	Implementation of HSSC Work Plan		NCWG3, (TBD) Meetings conducted yearly
	2.3.2	Maintain and extend the relevant IHO standards, specifications and publications, using contract support assistance as appropriate, including:	DTech					
	2.3.2.1	S-4 Chart Specifications of the IHO and Regulations for International (INT) Charts	DTech	ADCS	ADDT	Keep S-4 fit for purpose		Routine maintenance
	2.3.2.2	INT 1 - Symbols, Abbreviations and Terms used on Charts	DTech	ADCS	ADDT	New edition(s) in 2015-2016		
	2.3.2.3	INT 2 - Borders, Graduations, Grids and Linear Scales	DTech	ADCS	ADDT			
	2.3.2.4	INT 3 - Use of Symbols and Abbreviations	DTech	ADCS	ADDT			
	2.3.2.5	S-11 Part A - Guidance for the Preparation and Maintenance of INT Chart schemes	DTech	ADCS	ADDT	New edition of S-11 Part A released in 2017		
	<del>2.3.2.6</del>	<del>S-11 Part B - Catalogue of INT Charts</del>	<del>DTech</del>	<del>ADCS</del>	<del>ADDT</del>	<del>New edition of S-11 Part B database released in 2016</del>		<del>See also 4.2.1.3</del>
	2.3.2.7	Nautical cartography/portrayal related elements of:	DTech					
		S-52 - Specifications for Chart Content and Display Aspects of ECDIS	DTech	ADCS	ADDT			see 2.2.2.13

Strategic Direction	Element / Task	Title	Principal Director	Principal Manager	Alternate Manager	Key deliverables in 2017-2019	Significant risk to delivery	Remarks / Dates / Venue
2	2.3	Nautical Cartography	Objective / Deliverable: To monitor developments related to nautical cartography for <del>paper</del> -nautical charts (regardless of the format that a chart may take) and the colours, symbols and display rules used to show SENC information on ECDIS; to develop and maintain the relevant IHO standards, specifications and publications; and to provide technical advice as appropriate					
		S-101 - ENC Product Specification and other S-100-based Product Specifications	DTech	ADCS	ADDT			see 2.2.2.3 and 2.2.3
	2.3.3	Monitor and provide technical advice and guidance on strategies related to the future of the paper chart as a primary navigation tool.	DTech	ADCS	ADDT	Reports to HSSC9-11		

9.3 Consideration is given to incorporating the maintenance and extension of the *INTERNATIONAL Chart Catalogue* web service (S-11 Part B) into Work Programme Element 3.6 (Coordination of Global Surveying and Charting).

9.4 A review of IHO Resolution 2/2007 be conducted, as recommended in the analysis and recommendations of the S-100WG to the HSSC Chair Group meeting.

### Action Required of HSSC Chair Group

The HSSC Chair Group is invited to:

- a. note the paper
- c. discuss the recommendations above in the context of informing HSSC8