## Report of the Nautical Cartography Working group (NCWG)

***Submitted by: Related Documents: Related Projects:***

Chair, NCWG

NCWG7 Minutes,

Future of the Paper Nautical Chart

*see Annex A for full membership details*

IHO Secretariat, ICA, Navico Norway, Esri, Teledyne Caris

***Expert Contributor Organisations:***

Argentina, Australia, Brazil, Canada, Denmark, Estonia, Finland, France, Germany, Greece, India, Indonesia, Iran, Italy, Japan, Korea (Rep of), Latvia, Netherlands, New Zealand, Norway, Pakistan, Russia, South Africa, Spain, Sweden, Turkey, Ukraine, UK, USA (=29)

***Member States:***

Edward Hands (Norway)

***Secretary:***

Nick Rodwell (UK)

***Vice-Chair:***

Mikko Hovi (Finland)

***Chair:***

1. **Meetings Held During Reporting Period**
	1. NCWG – A VTC meeting was held 24-25 November 2021. The full report from this meeting can be found on the NCWG page of the IHO website.
	2. Several supplementary VTC meeting have been held in order finalise the Terms of Reference and Project Plan for the Baseline Symbology Project Team.
	3. NCWG8 is provisionally planned to be held 8-11 November 2022. Given the continued uncertainties associated with the COVID-19 pandemic decisions regarding the exact date, location and format of the next meeting will be taken at least six months before the proposed meeting.

## Work Program

* 1. S-4 Chart Specifications of the IHO and Regulations for International (INT) Charts
		1. S-4 edition 4.9.0 was adopted and published in April 2021.
		2. There are currently no plans for significant restructuring or rewriting of S-4. A number of suggested amendments have been proposed to strengthen the guidance and to address some of the inconsistencies in cross referencing. These will be addressed via correspondence in the intersessional period. The NCWG will continue to monitor and maintain S-4.
		3. It is acknowledged that there have been calls to make S-4 more prescriptive to assist machine readability and translation. The NCWG will monitor feedback and take actions deemed appropriate. OEMs have been invited to prioritise specific features which could be considered by NCWG to support machine readability and translation, as stated in 2.1.2, there is no capacity to consider the document as a whole.
	2. Maintenance of S-4 supplementary publications INT 1, INT 2, INT 3
		1. INT1 Symbols, Abbreviations and Terms used on Charts. There are three official language versions of INT1. Their current status is:
			+ Spanish language version published by ES/IHM: Edition 6, April 2018.
			+ French language version published by FR/SHOM: Edition 7, 2019.
			+ English language version published by UK/UKHO: Edition 8, November 2020.
		2. There are plans for publication of a new Spanish language version in 2022.
		3. Work is ongoing to revise the Section V of the English language version of INT 1, which deals with Data Quality. Currently this section still constitutes UK national guidance and is extremely UK-centric. The aim is to amend this section to make it more general and internationally applicable. Changes will be reported to NCWG 8 for approval. NOAA requested permission from UKHO to recreate Section V in their own INT 1 production in hard copy and for release as a downloadable internet production. The license agreeing this request was supplied to NOAA in January 2022.
		4. INT2 Borders, Graduations, Grids and Linear Scales. There are no current plans for a revision of Edition 4, 2007, published by NL.
		5. INT3 Use of Symbols and Abbreviations. There are no current plans for a revision of Edition 5, 2011, published by UK. The printed version are not likely to be produced in the future but would be available as PDF as required.
	3. S-11 Part A Guidance for the Preparation and Maintenance of International Chart Schemes
		1. The status is Edition 3.1.0, published February 2018. Although there are no current plans for a revision it is acknowledged that Section 200 is currently very S-57 centric and some future amendments are considered necessary to make it more S-101 compatible.
	4. Liaison with other IHO working groups and S-100 implementation support
		1. The working group has been working with the S-101 PT to create new symbols for new or significantly changed features in S-101, which cannot be translated directly from

S-52. Some delays have been experienced in work tasks due to the pandemic but the NCWG Chair will continue to liaise with the S-101 PT.

## Progress on HSSC Action Items

* 1. *Action HSSC13/43 - HSSC welcomed the establishment of a Baseline Symbology PT and requested NCWG to submit a project plan for this work as soon as possible following NCWG 7*
	2. The Baseline Symbology PT has held several VTC meetings to finalise the Terms of Reference and Project Plan. The Terms of reference for the PT have been approved and the Project Team formally established. The Project plan will be presented at HSSC 14.
	3. Based on the proposal by the Baseline Symbology PT, the NCWG requests that HSSC assign a domain for the symbology library in the IHO Registry.
	4. *Action HSSC13/44 - HSSC reminded NCWG of the pending action to provide feedback regarding the portrayal issues in S-124*
	5. Feedback and comments was sought via NCWG letter 02/2021. There was a good response from NCWG members and a consolidated response was forwarded to the Chair of the S-124 PT for consideration.
	6. *Action HSSC 13/44 - HSSC tasked NCWG to consider the proposal made on subscription based services to provide updates to navigational products.*
	7. CA confirmed that there had been no recent evolution on the concept previously presented to HSSC. It was noted that a key aim was to attempt to simplify the production of NtM and to develop an automated system which present the information to the mariner in a more visual way. The NCWG noted the Canadian concept and discussed the topic but it was determined that no further action was required at this time.

## Problems Encountered

* 1. The ongoing global pandemic once again prevented physical face-to-face meetings in 2021/2022. All meetings were held via VTC with the now commonly cited disadvantages. Meetings were generally a lot shorter than normal, thus limiting the discussion on various topics. The lack of physical meetings also removed the possibility for out of session discussions and networking between delegates. There were many advocates for physical and virtual meetings in the future, for those more interested in physical meetings, secretariat was keen to impress on the group that a ‘call off’ date needs to be defined early so those who have booked flights/hotels could cancel and receive their money back if circumstances changed since agreeing to hold physical meetings or not.

* 1. However in an attempt to try and overcome some of the problems inherent of VTC meetings a virtual icebreaker event was hosted prior to the meeting. This proved successful in giving members a chance to chat and introduce themselves in a less formal environment prior to the meeting proper.
	2. In addition a new item was added to the meeting agenda. ‘The Nautical Cartography Surgery’ gave members a chance to raise issues and seek advice from others. This was an attempt to simulate the coffee break discussion that occur at face-to-face meetings. This item was successful in stimulating debate on a range of issues and resulted in the proposal of several full papers for discussion at the next meeting.

## Any Other Items of Note

## Conclusions and Recommended Actions

* 1. NCWG concludes that the future of S-4 should now be viewed as part of the bigger discussion related to the development of baseline symbology.

## Justification and Impacts

* 1. The baseline symbology work is closely related to the future of S-4 and INT1 as well as supporting the future of the paper nautical chart.

## Action Required of HSSC

The HSSC is invited to:

1. **Note** this report
2. **Endorse** the continued activity of the working group
3. **Endorse** the assignment of a domain for the symbology library in the IHO Registry.

## ANNEX A

**MEMBERSHIP OF NCWG**

*(Updated 25 November 2021)*

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1: INT1subWG; 2 NCWG Portrayal subWG;

# ANNEX B

**Work plan 2021-21 - Summary of progress**

(updated to 25 March 2022 following HSSC13 and NCWG7 and subsequent activity, proposed in red)

**Tasks**

|  |  |
| --- | --- |
| A | Maintain and extend Publication S-4 'Chart Specifications of the IHO & Regulations of the IHO for INT Charts' (IHO Task 2.2.1) |
| B | Maintain and extend Publication S-11 Part A ‘Guidance for the Preparation and Maintenance of INT Chart schemes’ (IHO Task 2.2.2) |
| D | Development of new (and revised) symbology (IHO Task 2.2.1) |
| E | Maintenance of S-4 supplementary publications INT 1, 2 & 3 (IHO Task 2.2.1) |
| G | Conduct meetings of NCWG (IHO Task 2.1) |
| H | Provide technical assistance to other IHO working groups and support regarding the implementation of S-100 (IHO Task 2.3) |

**Work items**

\* Allowing for approval via HSSC (in accordance with Resolution 2/2007) before MS and publication.

| **No** | **Work item** | **Priority**H-highM-mediumL-low | **Next Milestone** | **Start****Date** | **End****Date** | **Status**P-PlannedO-OngoingC-Completed | **Contact Person(s)** | **Affected Pubs/Standard** | **Remarks** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| A28 | Future of S-4 | H | NCWG6 – discuss future of S-4 and agree work tasks | 2020 | 2022 | O | Chair NCWG | S-4 | NCWG3 Agenda 7.4: waiting on progress with A16NCWG 6 identified no need to restructure S-4, but welcomed any proposals to improve automation and machine readability |
| E1 | Maintain official INT 1s |  |  |  |  | O | UK: Sam LerigoFR: S GuillouES: J. Bustamante | INT 1 | UK INT 1 edition 8 published November 2020ES INT 1 edition 6 published April 2018FR INT 1 edition 7 published in 2019 |
| E9 | Develop new section V for INT1 for ‘data quality’ | M | Draft under consideration by INT1 subWG | 2014 | 2021 | O | Chair NCWGINT1 subWG | INT1 | CSPCWG10 Action 35NCWG3 Agenda 11.2: Transferred to UKNCWG4 – Action 4/18 ongoing |
| E10 | Symbol library | L | UK to confirm freedom to use UK's symbol set | 2016 |  | O | UK (N Rodwell)US (C Harmon) | S-4, INT1 | NCWG Actions 45, 46NCWG3 Agenda 3: Not required to progress at this time. |
| E11 | Develop baseline symbology to support automated chart production | H | NCWG6 – discus and agree work tasks | 2020 |  | O |  | INT1, S-4 | New proposal by NCWG at HSSC12Baseline Symbology PT established |

**Meetings** (Task G)

|  |  |  |
| --- | --- | --- |
| **Date**  | **Location** | **Activity** |
| 3-4 November 2020 | VTC | NCWG6 |
| 24-25 November 2021 | VTC | NCWG7 |
| 8- 11 November 2022  | TBC | NCWG 8 |

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