

**2<sup>nd</sup> NCWG MEETING**  
**Monaco 26-29 April 2016**

**Paper for Consideration by the Nautical Cartography Working Group (NCWG)**

**Future of the Paper Chart**

<b>Submitted by:</b>	NCWG Chair
<b>Executive Summary:</b>	A report of the discussions and activities on the subject of the future of the paper chart since CSPCWG11/NCWG1.
<b>Related Documents:</b>	CSPCWG11-13.01A_rev1 <i>Future of the Paper Chart</i> HSSC7-05.6A_rev2 <i>Report and Recommendations of NCWG</i> HSSC7 Minutes
<b>Related Projects:</b>	NCWG Work Plan

### Introduction / Background

Discussions at CSPCWG11/NCWG1 on the subject of the increasing use of ENC and ECDIS as the primary navigation product for SOLAS vessels and the possible impact of this on the future of the paper chart as a primary navigation product resulted in the establishment of a Correspondence Group of the NCWG to conduct further investigations. This paper summarises the discussions and activities related to this subject since CSPCWG11/NCWG1.

### Analysis / Discussion

Paper CSPCWG11-13.01A\_rev1 *Future of the Paper Chart* provided a summary of activities and discussions related to the increasing use of ENC and ECDIS as the primary navigation product for SOLAS vessels and the possible impact of this on the future of the paper chart as a primary navigation product. The key points raised in the paper as factors influencing options for the future of the paper chart include:

- The increasing uptake of ENC and ECDIS (and the generally corresponding reduction in paper chart requirements) by mariners;
- The incremental mandating of ECDIS on SOLAS class vessels by the IMO (complete mandation by 2018);
- The evolving expectations and skills of the current and future mariner;
- The development and implementation of the e-Navigation concept;
- The ability of HOs to maintain multiple nautical chart product streams in an environment of at best static or, more commonly decreasing, national resources (in terms of personnel, budget and nautical cartography experience) – the “economic reality”;
- The continuing divergence of the construction and content of paper charts and ENCs to provide the best information for the mariner in regard to the way that the products are used in the planning and operational environment;
- Diminishing skills in nautical cartography (in particular related to paper chart presentation) world-wide – the “skills reality”;
- National application of SOLAS Regulations – “who are our charts intended for”;
- The future impact of ECS (Electronic Chart Systems) that can utilize ENC data for the “non-SOLAS” (recreational) mariner; and
- The possible “look” of the Paper chart in the future – printing a paper chart directly from an ENC.

As a result of the discussions at the CSPCWG11/NCWG1 meeting, it was decided to request that the HSSC approve the establishment of a NCWG Correspondence Group to develop a report from an IHO perspective on the factors influencing and possible options for the future of the paper chart. NCWG Member State and Expert Contributor volunteers for participation in the Correspondence Group included **Australia** (coordinator), **Canada, Germany, Sweden, UK, USA, IHB** and **ESRI**. Post-meeting, additional volunteers for the Correspondence Group included **Finland, Netherlands, New Zealand** and **ICA** (co-Chair of the ICA Marine Cartography Working Group).

The text in the NCWG report to HSSC7 (paragraph 7.3.1) related to discussions and decisions of the NCWG on the future of the paper chart at CSPCWG11/NCWG1 is as follows:

The HSSC approved the establishment of a NCWG Future of the Paper Chart Correspondence Group, and further instructed the NCWG to address this item (A16) of the NCWG Work Plan as a high priority, with the goal of providing a report to HSSC8 (November 2016). The section of the HSSC7 Minutes related to this discussion is as follows:

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The NCWG Chair presented a paper (CSPCWG11-13.1A) summarising activities and discussions related to the increasing use of ENC and ECDIS as the primary navigation product for SOLAS vessels and the possible impact of this on the future of the paper chart as a primary navigation product. It was agreed to establish an NCWG Correspondence Group to further develop the issues raised in the paper and possible options for the future direction of the paper chart, with the aim of submission of the results of discussions to HSSC8.

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Unfortunately Australia (NCWG Chair), as Coordinator of the Correspondence Group, has not had the opportunity to activate the Correspondence Group due to conflicting priorities. However there has been some activity since CSPCWG11/NCWG1, including:

- Recruitment of Mr. Ron Furness (Australia), Co-Chair of the International Cartographic Association (ICA) Marine Cartography Working Group, to the Correspondence Group (and as a corresponding Expert Contributor to the NCWG);
- Collation of Papers and articles related to the subject of the future of the paper chart, included as NCWG2-13.1B (zip file);
- Engagement of a Project Researcher in November 2015 by the CHS to conduct an assessment of the future of the paper chart, including engagement with other HOs. The report of consultations held with the AHS via teleconference is included as paper 09 in the NCWG2-13.1B zip file.

NOTE: It is not expected that members of the Correspondence Group read all the papers included in the NCWG2-13.1B zip file prior to NCWG2. These papers are intended as reference documents to further correspondence post-NCWG2.

It is expected, as the report to HSSC8 will reflect the views of the NCWG at the time of HSSC8, that this report will be further amended and expanded as new developments, such as full implementation of the e-Navigation concept and full mandation of ECDIS in SOLAS class vessels is realised.

## **Conclusions**

The HSSC has approved the establishment of a NCWG Future of the Paper Chart Correspondence Group. The goal of this Correspondence Group is to further expand the discussions of the CSPCWG/NCWG conducted thus far and provide a report to HSSC8.

## **Recommendations**

1. NCWG to confirm the members of the Future of the Paper Chart Correspondence Group (AU, FI, DE, NL, NZ, SE, UK, US, IHB, ESRI, ICA (MCWG)), with further volunteers welcome.
2. Dependant on time, the Future of the Paper Chart Correspondence Group to conduct a meeting of available members at the conclusion of NCWG2 (morning of Friday 29 April).
3. The Future of the Paper Chart Correspondence Group to use paper CSPCWG11-13.01A\_rev1 *Future of the Paper Chart* as a starting point and expand on this paper through its correspondence activities to produce a draft report for HSSC8 (November 2016).
4. The Future of the Paper Chart Correspondence Group to provide the draft report to the NCWG via NCWG Letter for approval and submission to HSSC8.

## **Justification and Impacts**

Development of an "IHO position" on the factors and issues that may influence the future of the paper chart; and possible options for future developments, methodologies and formats for a paper product that meets the need of the mariner in an e-Navigation environment, will assist in informing other international bodies such as the IMO in assessing future international chart carriage requirements. Such a report may also assist in providing some standardised guidance to Port States for assessing chart carriage requirements for their National waters; and Hydrographic Offices in assessing future production strategies.

## **Action required of NCWG**

The NCWG is invited to:

- a. **Discuss** this report
- b. **Approve** the recommendations above

Associated documentation:

NCWG2-13.1B (zip file)