

Paper for Consideration by NCWG

Finalizing the Future of the Paper Nautical Chart

Submitted by:	NCWG Future of the Paper Chart Sub-working Group Lead
Executive Summary:	Options are presented for how to structure NCWG's final report to HSSC on the Future of the Paper Nautical Chart, which will include the results of the recent survey of IHO member states. Suggestions are also made for possible recommendations for NCWG to make to HSSC-12.
Related Documents:	HSSC11-05.4B , "Preliminary Report on Future of the Paper Nautical Chart" NCWG5-06.1B , "Future of Paper Chart: Management Plan" NCWG5-06.1C , "Results of the Future of the Paper Nautical Chart Survey of IHO Member States" Summary Report of C-3 (Decision and Action C3/19)
Related Projects:	None

Introduction / Background

A preliminary version of the Future of the Paper Nautical Chart (FPNC) report was presented to HSSC-11 in May 2019 in [HSSC11-05.4B](#), "Preliminary Report on Future of the Paper Nautical Chart." This included a set of suggested survey questions that NCWG wanted to ask of IHO member states. The survey was conducted from June to September 2019, the results of which are presented in [NCWG5-06.1C](#), "Results of the Future of the Paper Nautical Chart Survey of IHO Member States."

The final report, which will be presented to HSSC-12 in May 2020, in Bristol, UK, will incorporate the results of the survey and make recommendations to the HSSC. This paper to NCWG-5 presents options for structuring the final FPNC report and suggests recommendations that NCWG might want to consider making to HSSC-12.

Analysis/Discussion

Much of the content of the FPNC report has already been developed. The results of the survey of IHO member states have been compiled. Knitting the two documents together is now required. This will entail the following tasks:

1. Decide how to structure final report.
2. Decide what, if anything in the preliminary report needs to be changed, based on the survey results, and how this process will be managed.
3. Come to agreement on the final recommendations to make to HSSC-12.

Structure of the final report

The preliminary Future of the Nautical Chart report is 37 pages and the report of the associated survey results is 25 pages. Each of these documents also have about a dozen pages of annexes, some of which are of the same content. The final report is likely to be about 70 Pages.

Recommend inserting a handful of important survey results within the main section of the report, such as member states' answers to questions about ENC and paper chart sales, simplified charts, backup charts, raster charts from ENC data, and INT chart production. The remaining survey results could be included in an annex to the report. Is this approach acceptable?

Changes to the report text

Based on the survey results, what parts of the preliminary report should be changed? There are a few obvious spots, such as where paper chart and ENC sales numbers for just a few HOs are shown in the preliminary report. These could easily be replaced with the aggregated sales numbers of many charting agencies that were obtained from the survey.

- What other graphics in report should be changed?
- What other narrative sections of the report should be changed?
- How will NCWG members' recommendations for changes be received and adjudicated after NCWG5?

Formulating NCWG Recommendations to HSSC

The preliminary report discusses several product and production related issues. Some of these are also addressed in the survey. What recommendations does NCWG want to make to HSSC or the IHO in general regarding the future of the paper nautical chart?

To design this important section, the following steps could be taken by a FCNC finalization sub-working group or task force:

1. Go through the preliminary report, section by section and insert and highlight a draft recommendation, hopefully supported by the survey results in Annex. Some sections may just present information and may not need a recommendation.
2. At the end of the report, design the typology of recommendations (S-4, Regulations, Production, etc.)
3. Distribute all the draft recommendations that appear in the report in the breakdown classification.
4. Prioritize the recommendations.
5. Draft a cover paragraph to present this outcome and propose a conclusion. This might be used as the main result to be submitted to HSSC with the Report as Annex and its Appendix being the survey results.

Possible recommendations for activities to be undertaken by NCWG:

1. **S-4 Portrayal Catalogue** - Implement standard S-4 symbology in an S-100 Portrayal Catalogue for raster paper/charts
2. **Freezing S-4** and the S-4 based portions of national INT1 and Chart 1 documents, so that future NCWG efforts can focus exclusively on enhancing the portrayal of S-57 and S-101 ENCs and other S-100 based products.
3. **Enhance ECDIS Portrayal of ENC** – Make it a priority to understand users' concerns about issues with the portrayal of ENC data – both S-57 and S-101 – and help facilitate ways to make the current and future display of ENCs as acceptable to mariners as the presentation on paper charts.
3. **Raster from ENC** - Develop a standard means of generating raster nautical charts from ENC data. This could include adapting rules established in IHO S-52 to portray the data using IHO S-4 symbology. S-52 could also be "skipped" presentation rules be developed based only on the S-101 ENC Product Specification.
4. **Backup Chart Specification** - Develop a specification for – or general guidelines for – a simplified paper/raster chart that would be suitable as a back-up for ECDIS and ECS. This could include specifying the chart features, notes, and other marginalia that are required, as well as what chart usage types (e.g., would overview charts be needed?).

5. **Chart on Demand / Custom Chart** – Coordinate efforts of various HOs that are developing online "Chart on Demand" or bespoke "Custom Chart" capabilities

6. **INT Chart Production and Coordination** – What, if any, recommendations does NCWG want to make regarding the future of production or INT charts and coordination efforts related to INT charts or ENC within ICCWGs? Does it make sense to freeze INT Charts Schemes for instance. If yes, what is the impact on S-11?

7. **Minimum Paper Chart Standard** - Develop a new "minimum" standard for Paper Chart Production derived from Chart Content Databases (also used for ENC Production), meeting functional requirements and regulatory obligations (SOLAS back-up for instance, but not only, national as well).

Possible recommendations for HSSC working group organization:

1. **NCWG Work Plan** – Are there work items related to the future of the paper nautical chart that should be added, changed, or removed from NCWG's work plan.
2. **NCWG TORs** – Are there revisions to the NCWG TORs and Objectives that should be made in accordance with decisions made at HSSC?
3. **Disband the NCWG** – Is it time to disband the working group and assign its activities to a Project Team under S100WG or ENCWG?

Recommendations

- Review the preliminary Future of the Paper Nautical Chart preliminary report and survey results, and take the actions listed below to finalize the FPNC report.
- Establish a task force (or revive the FPNC sub-group) to assist with finalizing the report, in accordance with the proposed management plan (NCWG5-06.1B).
- If there are issues where no consensus can be reached by the NCWG, then the final report should present the various recommendations that the group considered.

Justification and Impacts

- The recommended actions are necessary to finalize the Future of the Paper Nautical Chart report for presentation at HSSC-12 in May 2020.

Action Required of the NCWG

The NCWG is invited to:

- a. review the preliminary Future of the Paper Nautical Chart preliminary report and survey results,
- b. decide how to structure final report.
- c. decide what, if anything in the preliminary report needs to be changed, based on the survey results, and how this process will be managed,
- d. come to agreement on the final recommendations to make to HSSC-12.