

Paper for Consideration by WENDWG10

S-128 Management Issues

Submitted by:	PRIMAR, Canadian Coast Guard
Executive Summary:	This document outlines several topics related to management of S-128 Catalogue of Nautical Products that needs further discussion. Impact on the S-100 Implementation plan is described with some suggested inputs. Possible impacts on carriage requirements are also discussed.
Related Documents:	NIPWG7_2019_10.1_EN_S-128 development work status update NIPWG7_2019_10.2_EN_Items to be included into S-128 - Management of up-to-dateness Draft_S-128 Product Specification 0.7.5 (Nov21) A2_2020_PRO2-1_EN_S100_cc_v1.pdf
Related Projects:	

Introduction / Background

At the NIPWG7 meeting in Tallinn 25-29 November 2019 discussions related to S-128 management issues took place. As a result of the discussions PRIMAR, Canadian Coast Guard and Furuno were tasked to provide this paper for discussion to the WENDWG. The action given was:

7/09 PRIMAR and the Canadian Coast Guard, in cooperation with FURUNO, to draft a paper to be provided to the IHO Secretariat to raise awareness of management issues for the following:

1. Maintaining currentness of products in the Catalogue.
2. Use of S-128 with respect to the S-100 Implementation Plan.
3. Possible impact on carriage requirements of S-100 based products to the WEND WG.

Analysis/Discussion

S-128 Catalogue of Nautical Products is a vector product specification primarily intended for encoding the status and extent of Catalogue of Nautical Products, for navigational purposes. Datasets conforming to this specification will contain a catalogue of all relevant nautical products information for the area of coverage. Relevant nautical products are defined as:

- Electronic Chart: electronic chart products like S-57 ENC, S-101 ENC and digital chart for special purpose.
- Paper Chart: nautical paper chart and special purpose chart published in paper.
- Nautical Products: nautical publication, online service, S-100 compliant products and e-Navigation service, all navigational products except nautical charts.

Relevant product information includes their coverage, issue date, producing agency and contact details, source indication and publication status.

When encoding S-128 datasets a producer and/or service provider can exchange the catalogue to interested stakeholders and end users. Examples of expected benefits:

- ENC user/ECDIS operator will be able to compare a specific vessels portfolio against the catalogue to confirm up-to-dateness of own portfolio.
- Port State Inspectors, Flag State Inspectors and Vetting Inspectors will be able to verify vessels portfolio up-to-dateness.
- The catalogue will make it possible to visualize the available navigational data and services within a geographical area.
- A planned route and a user defined buffer could be queried against the catalogue information to provide voyage specific information to end user and their service provider(s) on which products are available in the waters the vessel plan to navigate.

S-128 datasets can be used together with ENC (or data products) acting as a base layer. The base layer is expected to provide navigational and visual context. It is expected that the product will be visualized as an overlay of a navigation system or other GIS applications. Consequently, all necessary descriptive and spatial characteristics to provide a charted background should be provided by the underlying application.

1 Maintaining currentness of products in the Catalogue.

Consideration must be given to describe and understand how the catalogue will be kept up to date and how it can provide product specific up-to-dateness information that end user systems can utilize as part of up-to-dateness verification. In S-57 distribution a similar function is provided by S-63.

As concluded in paper "NIPWG7_2019_10.2_EN_Items to be included into S-128 - Management of up-to-dateness", management of up-to-dateness should be provided – either by S-128 or by something else. The paper further recommend that S-128 could be used for this purpose.

If S-128 is developed to serve this purpose, several questions arise that should be answered to understand management issues:

- Will each S-1xx producer provide a catalogue covering their products?
 - o Will this be a mandatory requirement, or should it be optional?
- Will there be issued national catalogues?
 - o Will this be a mandatory requirement?
 - o Will such catalogue contain all navigational significant data, also outside the scope of IHO?
 - o Where should the responsibility be for such issuing?
- What will be the role of RENCs and other service providers?
 - o Will they issue a complete catalogue for the S-1xx products going through their service?
 - o Will the RENCs be given specific responsibility for catalogue creation and distribution?
 - o How will this affect the future WENS principles?
- How will the catalogues be distributed – following all data deliveries, on request only, set intervals (daily, weekly, monthly) or by any other means?
- How will multiple catalogues be handled in the end user systems?
- Will there be a global up-to-date version of the catalogue made available by the IHO?
 - o If yes, will it include navigational significant data from non-IHO organisations that issues navigational significant data?

WENDWG is currently looking into developing the existing WEND principles to shift focus from ENC to comprehensive (S-100) suite of services and the possible extension of WEND to WENS (Worldwide Electronic Navigation Services). Will this work impact S-128 development by for example necessitate the inclusion of services in S-128?

2 Use of S-128 with respect to the S-100 Implementation Plan.

In 2019, the IHO Council approved the "S-100 roadmap for the S-100 Implementation Decade". The Assembly is invited to approve the roadmap at its upcoming meeting (A2_2020_PRO2-1_EN_S100_cc_v1.pdf). The roadmap considers:

- The progress of the technical standardization of the S-100 Framework.
- The interrelation to IMOs e-navigation programme.
- The need to assist Member States with readiness and capacity to commence the production and the integrated provision services of S-101 ENC and other S-100 based products.

The roadmap is expected to be maintained as an incremental document on an annual basis (including narrative, timelines, engagement plan, production plan and capacity building). Consideration should be given to see how S-128 may impact the S-100 Implementation Plan.

Throughout the roadmap information is given for ENC's and additional S-1xx products separately. S-128 could be an important piece to incorporate in the roadmap, emphasising how it may benefit both for the ENC's and the S-1xx products. Suggested inputs to the roadmap:

- It should be considered if S-128 should be added to the Additional S-1xx Product Specifications list outlined in section 2 of the roadmap:

S-101	Electronic Navigational Chart (ENC)
S-102	Bathymetric Surface
S-104	Water Level Information for Surface Navigation
S-111	Surface Currents
S-122	Marine Protected Areas
S-123	Radio Services
S-124	Navigational warnings
S-129	Under Keel Clearance Management

- S-128 can also be used during the dual fuel time period (outlined in section 3 of the roadmap) where S-57 and S-101 ENC's coexist, as a means to keep track on the expected growing number of S-101 ENC's and maybe assist RENC's/service providers feeding newly released 101 ENC's to vessels that want to replace existing S-57 coverage as soon as possible.
- Section 3 of the roadmap also states that "IHO will create and maintain a global catalogue of services and planned services on a regular basis...." If S-128 will be used to create this catalogue, S-128 could be mentioned specifically.

3 Possible impact on carriage requirements of S-100 based products

If the products defined within the catalogue could be linked to a specific vessels carriage requirement, the end user system could recognize the products mandatory for the vessel and ignore the other products information. They may be able to diversify the information in the catalogue based on own ship specific carriage requirements.

Conclusions

1. S-128 draft is now ready for a full review.
2. S-128 may serve as an essential component in the S-100 ECDIS environment therefore changes to the WEND principle may impact S-128 and its use.
3. S-128 may be an integral part of the IHO S-100 strategy and it may be necessary to update the Strategic Plan to reflect this.

Action Required of WENDWG

The WENDWG is invited to:

Discuss the issues raised within this paper and provide feedback to NIPWG advising S-128 future development and management.