

Paper for Consideration by IRCC

Report of the Worldwide ENC Database Working Group

Submitted by:	Chair, WENDWG
Executive Summary:	WENDWG Annual Report to the IRCC
Related Documents:	IRCC14-07D2
Related Projects:	None

Meetings Held During Reporting Period

WENDWG12 – 22-24 February 2022 – Monaco / Hybrid

Program of Work

HD ENC Survey and Outcome

The WEND WG conducted a survey on HD ENCs between July and September 2021 (CL 26/2021). 37 Member States participated in the survey, and while the results showed that some Member States are producing HD ENCs assuming that S-1xx will not be available to replace HD ENCs for 5 to 10 years, the WG noted that HD ENCs were not an IHO strategic objective so does not consider appropriate for the IHO neither to develop specific production guidelines for them at this time, nor to create a new strategic performance indicator for assessing the level of HD ENCs production. However, the WG did acknowledge that HD ENCs do fill a specific user need for improved safety contours and that they fill the gap while S-100 ECDIS, with S-102, is not widely available. The WG also noted that there can be significant production challenges with producing HD ENCs, likely preventing many Member States from building them.

S-101 Scheming Guidelines

During the VTC WENDWG 11, the Group established a team to investigate options for helping to manage the transition from S-57 and S-101. The ad hoc team, led by Japan, presented a report on their findings to the WG. The Group noted that the consensus for a Global Common Grid Scheme could not be reached yet due to significant objections. The WENDWG commended Japan for leading the team and agreed that the way forward, for now, was (option 2) the status quo – for RHC reps to continue to monitor and report on regional views and strategy regarding the transition from S-57 to S-101 in a dual production environment, noting that this is not based on a cost-effective analysis to speed up the implementation of the S-100 Roadmap from a global perspective. The WEND also agreed to revisit this issue during WENDWG 13.

S-1xx Implementation Guidelines

WENDWG 11 established an ad hoc team to work on the implementation guidelines for S-1xx (including S-102, 104, 111, 124, 128 and 129). Led by the Netherlands, the team developed implementation guidelines for the application of the base WEND-100 Principles to S-1xx products. The face-to-face meeting in Monaco was extremely beneficial for agreeing on a compromise way forward. Following the WENDWG 13, the team focused on "SOLAS" products for the first version of the Guidelines and agreed to submit them in time for IRCC-14 (see IRCC14-07D2). The WENDWG presents the guidelines noting that they will need to be on a frequent update cycle as new S-1xx products mature. The current version of the Guidelines states that S-102, 104, and 111 (Oceanic, small scale products), with one small exception for S-111, should conform to the full extent of the WEND-100

Principles, as S-101 does. For S-124, 128 and 129, no additional guidelines regarding the application of WEND-100 are identified at this time.

Following this first iteration of the Implementation Guidelines, the WENDWG agreed that we will need to consider two additional use cases for the next version of the Guidelines, to include non-SOLAS (or non-ECDIS) navigation and guidelines for “other than navigation” products and data.

Duel Fuel Concept

The WENDWG received a report from the S-100WG Chair and commended her development team for the presentation. The WENDWG was invited to provide comments to the S-100WG Chair on the duel fuel document as soon as possible so that they might be incorporated as part of the submission to HSSC.

INToGIS II Development

The WENDWG commended KHOA and other contributors on the work done to date on the development of INToGIS II. The group also agreed on the proposed way forward on the development of INToGIS III which will use S-128, as much as is practical, to allow hydrographic offices and other users to visualize S-1xx product coverage in the future. The WENDWG thanks KHOA and looks forward to an updated report at the next meeting. Additionally, the WG was pleased to note the US (NGA) update on the World Port Index and looks forward to a status report on the traffic density layer later this year.

CATZOC values and Strategic Performance Indicators

As part of INToGIS, an additional CATZOC layer is available to IHO Member States only (Manager Mode). It is used for internal purposes by IHO Member States and ICCWG Coordinators on regular basis. For the automated implementation of some SPIs, for maintaining the CATZOC layer in INToGIS, the WENDWG Chair and IHO Secretariat request that Member States reconsider their position on providing CATZOC layers and to allow the distribution of their CATZOC data to the Secretariat.

WEND-100 Product Matrix IGIF

The WENDWG agreed to build a WEND-100 Product Matrix to help ensure that UN-Integrated Geospatial Information Framework pathway principles are being considered as new S-1xx products become available. The Matrix aims to assist Regional Hydrographic Commissions in ensuring that good practices, including, finance, data, standards, innovation, policy and legal, governance (as not all S-100 based products can be developed by hydrographic offices) and institutions, partnerships, resources, training and capacity building and communications are all being considered. The Matrix is being developed in accordance with the IGIF's nine strategic pathways. The WENDWG also agreed (Action WENDWG12/33) that the inclusion of a standing agenda item in forthcoming RHC conferences/meetings that facilitates the development of UN-GGIM Integrated Geospatial Information Framework (IGIF) compliant assessments of S-1xx top priority products, along with the nomination of Regional S-100 Coordinators, would be an important step in helping to advance progress on the S-100 Implementation Roadmap.

ENC Regional Chart Coordinator Reports

The WEND WG received reports from a number of ENC Regional Chart Coordinators and discussed the expanding role of the Coordinators. The Working Group decided to propose that the IRCC

recommend new S-1xx Coordinator roles to be established in the RHCs either as separate from the Chart Coordinator or as an additional duty of the Coordinator. The new position would be responsible for considering the progress and coordination of S-1xx products as they become available, starting with the pathways outlined in the WEND Product Matrix.

Action Required of IRCC

- Note HD Survey and Outcome
- Note the report on S-101 Scheming Guidelines
- Approve the S-100 Implementation Guidelines as v.1 (IRCC14-07D2)
- Note that the WENDWG was provided an opportunity to comment on the DF-Governance document
- Note the progress made by KHOA to advance INTToGISII and invite IHO Member States (ENC producers) to allow the provision of CATZOC to the IHO Secretariat for SPIs' calculation if appropriate and completing the coverage of CATZOC layers in INTToGIS
- Endorse the WEND S-100 Product Matrix as a tool for RHCs to gauge business model maturity for S-100 products
- Recommend that RHCs establish an S-100 Coordinator role
- Recommend that RHCs apply Action WENDWG12/33 (WEND-100 Product Matrix will be made available on the WENDWG Repository webpage when finalized).
- Approve the proposed Work Programme for the WENDWG (Annex A)
- Note this report

ANNEX A

WENDWG Work Programme 2022-23 (to be approved at IRCC-14)

Objectives ([WENDWG TORs](#) refer)

1. Monitor the development of adequate ENC coverage to meet carriage requirements for ECDIS;
2. Develop proposals for speeding up ENC production and ensuring uniform ENC quality and consistency, and for making data available worldwide, including SENC distribution, taking advantage of any offers for production assistance, or other ways of mutual assistance and co-operation;
3. Advise MS, where appropriate, on the need, as well as on methods and tools for validating the data, and on any assistance which could be offered by the RENCs;
4. Monitor the implementation of the WEND, in response to Decision 21 of the XVIIth IHC, and advise IRCC of appropriate measures for speeding-up the implementation process;
5. Assist in harmonizing the policies of regional ENC Coordinating Centres (RENC) with respect to matters related to administration, legality, finances, technical processes, et cetera.
6. Develop options to expand the value of the Worldwide ENC Database to all marine data users applying data management principles
7. Develop WEND-like Principles, if appropriate, in order to support the production and dissemination of S-101 ENCs and the first generation of S-100 based products

Tasks

A	To assess overlapping ENC data issues within ECDIS and make progress to solve them
B	To finalise paper on Guidelines on Assessing and Eliminating the Risk of Overlapping ENC Cells
C	To progress on RENC Harmonization Issues
D	To continue working to attract ENC producer nations to join the RENCs or distribute their ENCs through a RENC
E	To ensure data quality and consistency
F	To monitor and report ENC coverage report to WENDWG
G	Left blank intentionally

H	To maintain IHO ENC Coverage Catalogue and progress the development of INToGIS III aiming to include the catalogue of S-100 Products & Services
I	To provide support on capacity Building activities, as appropriate
J	Left blank intentionally
K	Left blank intentionally
L	To support non-ECDIS maritime community through license management of ENC data
M	To support Seabed 2030 Initiative
N	To prepare the WEND-100 Principles and associated Guidelines as key component of the Roadmap for the S-100 Implementation Decade

Work Item	Title	Priority H-High M-Medium L-Low	Next Milestone	Start Date	End Date	Status P-Planned O-Ongoing C-Completed S-superseded	Contact Person(s). Participants	Deliverable	Remarks
B.3	Monitor the implementation of the IHO Resolution on the Elimination of overlapping ENC data in areas of demonstrable risk to the safety of navigation	M	WENDWG13	2018	Permanent	O	Chair, RHCs, RENCs, IHO Sec	Attention raised by SAIHC	IHO Resolution 1/2018 in force (IHO CL 19/2018 refers).
B.4	Make available a Worldwide AIS traffic density database to the IHO Member States through the IHO GIS System (INToGIS II,...)	M	--	2018	2022	O	US, ROK, IHO Sec.	INToGIS II additional layer at the disposal of ICCWGs	For ENC gap coverage assessment. US NGA leads. Information paper on this layer to be provided by US NGA before layer is commissioned.
C.2	Report on RENC Harmonization issues and progress made	M	WENDWG13	--	Permanent	O	RENCs		Done for 2022.

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D.3	Monitor ENC Producers who distribute their ENCs through a RENC	M	WENDWG13	2014	Permanent	O	RENCs, RHCs, IHO Sec.	Updated ENC Data Flow Diagram (EAHC RECC now included)	IHO CL 59/2014 refers. Done for 2022.
F.1	Monitor global and regional S-57 ENC Coverage	M		2014	Permanent	C	UK, RHCs	Annual statistics	Reports are now made by RHCs Rep. at WENDWG meetings
F.2	Using risk assessment methodologies, identify and consider S-57 ENC Gaps	M		2014	Permanent	C	RHCs, IHO Sec.	Improved coverage (and supporting survey plans where needed)	To be continued and improved by RHCs. Reports are now made by RHCs Rep. at WENDWG meetings
F.3	Update the List of Ports (and moorings) database	M	WENDWG13	2014	Permanent	O	US, ROK, RHCs	API with INTToGIS II	New World Port Index Database (US NGA leads)

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F.4	Provide relevant SPIs in support of the IHO Strategic Plan 2021-2026	M	WENDWG13	2021	Permanent	O	tbd	IHO Annual Report	On hold (waiting for IRCC instructions). Proposal by IHO Secretariat planned at IRCC Workshop (April 2022) on SPI 1.2.2.
H.1	Continue the maintenance of the IHO ENC Coverage Catalogue	H		2014	Permanent	O	IHO Sec., UKHO, RENCs		
H.2	Monitor the development of INToGIS III as part of the IHO GIS Infrastructure	M	WENDWG13	2021	2030	O	ROK, IHO Sec.		Action WENDWG11/14. Compliance with S-128. Action WENDWG12/23
H.3	Develop approved ENC schemes in every charting regions (S-57 ENCs, then S-101 ENCs), at least for small scales	H	WENDWG13	--	Permanent	O	RHCs	ENC Schemes available online	Top priority identified in C-1, no progress, put on hold until S-101 becomes a reality.
I.1	Provide support to CBSC on request for compelling requirements in the scope of the WENDWG activities	M		2015	--	P	RHCs		As appropriate

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M.1	Consider supporting the Seabed 2030 Initiative through the IHO DCDB with ENC data	M		2018	Permanent	O	ENC Producers, RENCs	Bathymetric information extracted from RENC databases	Action WENDWG9/12. Call for IBCSO ver.2 made in 2021
N.2	Propose the new WEND-100 Principles to the approval of Member States	H	IRCC-13, then C-5	2020	2021	C		IHO Resolution in M-3, and component of Roadmap for the S-100 Implementation Decade	Annex A of WENDWG Report to IRCC-13
N.3	Develop S-101 ENC Scheming Guidelines	H	WENDWG13	2021	2024	O	JP leading drafting group	Guidelines	On hold until reports received from RHCs. Action WENDWG12/12 and /13
N.4	Develop S-1xx Implementation ENC Guidelines	H	WENDWG13	2021	2023	O	NL leading drafting group	Guidelines	Fruitful discussion at WENDWG12

Work Item	Title	Priority H-High M-Medium L-Low	Next Milestone	Start Date	End Date	Status P-Planned O-Ongoing C-Completed S-superseded	Contact Person(s). Participants	Deliverable	Remarks
N.5	Contribute and propose amendments to the Roadmap for the S-100 Implementation Decade	M	IRCC13	2021	Permanent	O	Chair		Done in 2021. To be considered in 2023 (INToGIS III, etc.).
N.6	Monitor RHCs IGIF-compliant pathways / per Region /per S-1xx Product) for the S-100 Implementation	H	IRCC-14 /WENDWG-13	2022	Permanent	O	Chair		Decision/Action WENDWG12/33