

10th MEETING OF THE IHO- INTER REGIONAL COORDINATION COMMITTEE

IHO-IRCC10

Goa, India, 4-6 June 2018

Report of the Worldwide ENC Database Working Group (WENDWG)

Submitted by:	Chair, WENDWG
Related Documents:	Final minutes of IRCC9 and HSSC9, IHO Strategic Plan Performance Indicators (and Appendix IV to the IHO Annual Reports).
Related Projects:	N/A

Chair:	Jamie McMICHAEL-PHILLIPS, UK
Vice-Chair:	John NYBERG, USA
Secretary:	Yves GUILLAM, IHO Secretariat.
Member States, RHCs and RENCs:	Membership List (See Enclosure 1)

Meetings Held During Reporting Period

1. WENDWG8, 20 – 22 March 2018, Buenos Aires, Argentina.
2. Planned: WENDWG9, 26 – 28 February 2019, Brest, France.

Programme of Work

3. In 2018, at the 8th meeting of the Working Group, in Buenos Aires, Argentina, the following key issues were discussed and are summarised in more detail further within this report:

- WENDWG ToRs
- Eliminating overlapping ENCs
- IHO ENC Catalogue and Performance Indicators
- RENC Harmonisation and Distribution
- The Full Implementation of the WEND Principles
- Industry and Stakeholders Session
- Review and Update of the WENDWG Work Programme

WENDWG ToRs

4. Some minor editorial changes have been implemented following endorsement at IRCC9. However, there was subsequent discussion on expansion of WENDWG's role which will require IRCC10 direction and guidance (see Section 17).

Elimination overlapping ENC's

5. Following the work of this group, in February 2018, MS approved the IHO Resolution on the elimination of overlapping ENC Data in areas of demonstrable risk to the safety of navigation¹. In amplification of this Resolution, the consensus^{2 3} of WENDWG was that:

- a. The one-year "clock" to resolve overlaps should begin once the overlapping issues, starting with the potential highest risk cases, have been reported to ENC producers.
- b. Management of overlap cases should be implemented by RHCs, reporting to IRCC and keeping WENDWG informed.
- c. RHCs should make their own assessment of the level of navigational risk for ENC overlaps using the IC ENC Policy on Risk Assessment as a first step where applicable.

6. Feedback, via the RENCs, from various VARs and Distributors was clear that overlapping ENC's do create confusion onboard ships. Without underlying cartographic/source data criteria being available to them, mariners are being forced to make their own decisions about what ENC data should be displayed in their ECDIS. Clearly this is a very unsatisfactory situation which the WEND Principles were designed to minimise. The situation is further exacerbated by the fact that ECDIS manufacturers have different rules for displaying overlapping data on their equipment. The IHO community needs to do much more to manage, and wherever possible eliminate, overlapping data. This is worthy of further discussion at IRCC10 and at C2.

7. PRIMAR has recently updated its Overlap Checker tool and User Manual and will continue to make it available. RHCs and ICCWGs are encouraged to make use of this valuable application in their work and to provide feedback on its functionality.

IHO ENC Catalogue and Performance Indicators

8. The IHO ENC Coverage Catalogue is now well publicised within IMO's *ECDIS Guidance for Good Practice* (MSC.1/Circ1503/Rev1 dated June 2017) which is very positive news. As part of INTGIS Phase II activity, work is ongoing to develop the link between the INT Chart Web Catalogue and to include an Automatic Identification System (AIS) traffic density database. In the meantime, plans are underway to commission a more user-friendly version of the ENC Coverage Catalogue.

9. Further work on IHO Performance Indicators for the WENDWG is in abeyance pending the outcome of the Strategic Planning Review Working Group (SPRWG).

RENC Harmonisation and Distribution

10. As reported to IRCC9, the two RENCs are in a period of maturity and stability and are to be commended for the high-quality support provided to hydrographic offices and end-user service providers and for their contribution to the periodic Joint-RENC technical meetings.

¹ IHO CL19/2018.

² United Nation definition of "consensus" is as follows: "...consensus is reached when all Member States have agreed to adopt the text of a draft resolution without taking a vote. However, reaching consensus is not the same thing as being unanimous. It is important to note that consensus does not mean that all Member States agree on every word or even every paragraph in the draft resolution..."

³ TR was not in full agreement with some of the subsequent wording here and this is reflected within the WENDWG8 Minutes.

11. PRIMAR is undertaking research and innovation for the future validation and distribution of S-101 ENC which, when complete, will undoubtedly benefit the wider maritime community.
12. WENDWG reaffirmed its conviction that all ENC data should be made available to the RENC not only for ensuring QC in general but also importantly for risk assessment of overlapping ENCs. The harmonization process should include, in the future, exchanges with the new EAHC Regional ENC Coordination Centre (EAHC RECC) which was established recently.

The Full Implementation of the WEND Principles

13. WENDWG noted that there was a need to better understand, at IHO level, those issues with coverage and overlaps across the regions.
14. Reports by RHCs on the implementation of ENC Schemes are a crucial component of the management information needed to inform this understanding. WENDWG8 has had no visibility of reports from EAHC and NIOHC for two years.
15. Following discussion, it was agreed that the existing IHO ENC Coverage catalogue should be used as the initial mechanism to build the ENC Schemes database within the INTogIS II system. Once the system has been fully commissioned, following beta-testing, RHCs should subsequently define and adopt ENC schemes for submission.

Industry and Stakeholders Session

16. In accordance with the WENDWG ToRs, expert contributors were invited to join the 8th meeting. Presentations were given as follows:
 - a. *"Nominal ENC Coverage and Navigational Risks"* by the National Taiwan Ocean University.
 - b. *"Facilitation of chart providers for leisure market through harmonised licence arrangements"* by IHO Secretariat.
 - c. *"Public-Private Partnership ... Serving All Mariners"* by C-Map.
 - d. *"PRIMAR S-57 Distribution"* by PRIMAR.
 - e. *"Unveiling of ENC depth information"* by SevenCs.
 - f. *"Seamless transition to Seabed 2030 global initiative by requesting the RENCs establish processes for Coastal States to authorise and extract bathymetry data from ENCs for delivery to the IHO DCDB"* by US and Norway.
17. These presentations proved to be hugely informative and generated much discussion and debate. Key outputs were as follows:
 - a. WENDWG generally endorsed a recommendation that RENCs might consider offering a S-57 licence management service to support provision of accurate and adequate data for safety of navigation for all classes of vessels.
 - b. WENDWG agreed to consider exploring options to support the GEBCO Seabed 2030 initiative. It was recommended that US and NO resubmit their paper to IRCC, seeking guidance on the possible expansion of the WENDWG scope for addressing this proposal.
 - c. Subsequently post the WENDWG8 meeting in March 2018, a wider MS Proposal (US, NO et al) has been submitted to IRCC. This seeks to expand the WENDWG ToRs to accommodate the intent within the IHO Convention (IHO Publication M-1 Basic Documents of the IHO) that notes that the mission of the IHO is to create a global environment in which States provide adequate and timely hydrographic data, products and services and ensure their widest possible use. The Proposal, for which IRCC10 guidance

is sought by WENDWG, recommends that WENDWG's ToRs be amended to include the following wording: *The purpose of the WEND Working Group is to advise IRCC and to assist in:*

- I. *Facilitating a world-wide consistent level of high-quality, updated official ENC's through integrated services that support chart carriage requirements of SOLAS Chapter V, and the requirements of the IMO Performance Standards for ECDIS.*
- II. *Reviewing options and recommending actions that expand the value of the RENC hydrographic data to all data users and the application of data management principles to extract the highest societal value of Member States effort.*

Review and Update of the WENDWG Work Programme

18. All IRCC previous actions have been incorporated into WENDWG work programme and progressed accordingly.
19. An updated WENDWG Work Programme is included with this report at Annex A and submitted to IRCC10 for approval, that includes the options proposed in paragraph 17 above.
20. As agreed by consensus, WENDWG still has a very active role to play within the IHO. IRCC is requested to approve continuation of its activities.

Action Required of IRCC

21. The IRCC is invited to:
 - a. **Direct** any WENDWG ToR changes based on the outcome of the IRCC10 Proposal regarding the widest possible use of hydrographic data, products and services.
 - b. **Reinforce** the fact that the one-year "clock" to resolve overlaps should begin once the overlapping issues have been reported to ENC producers (as stated in paragraph 5 of the new adopted IHO Resolution 1/2018 – IHO CL 19/2018 refers).
 - d. **Endorse** that the management of overlap cases should be implemented by RHCs.
 - e. **Note** that RHCs should make their own assessment of the level of navigational risk for ENC overlaps using the IC ENC Policy on Risk Assessment as a first step where applicable.
 - f. **Note with concern** that overlapping ENCs create confusion onboard ships and that IHO community should work to eliminate overlapping data; and **note** that this issue is worthy of further discussion at IRCC10 and C2.
 - g. **Commend** the RENCs on their high-quality support to hydrographic offices and end-user service providers and for their contribution to Joint-RENC technical meetings to which the EAHC RECC is invited to participate.
 - h. **Note** the WENDWG conviction that all ENC data should be made available to the RENCs not only for ensuring QC in general but also importantly for risk assessment of overlapping ENCs.
 - i. **Encourage** RHCs to provide updated reports on the implementation of ENC Schemes to the WENDWG in advance of the yearly WG meeting.
 - j. **Note** the recommendation that RENCs might consider offering a S-57 licence management service to support safety of navigation for all classes of vessels.
 - k. **Approve** the proposed updated WENDWG 2018-19 Work Programme as given at Annex A and the continuity of WENDWG activities ([WENDWG ToRs](#) Art. 4.3 refers).

Annex:

- A. Proposed WENDWG 2018-19 Work Programme.

Enclosure:

1. WENDWG Membership correct at April 2018.



WENDWG MEMBERSHIP

(April 2018)

Member State	RHC ¹		
Argentina	SWAtHC	Capt Fabian VETERE	fveter@hidro.gov.ar
Australia	SWPHC	Mr Mike PRINCE Ms Hilary THOMPSON	Mike.Prince@defence.gov.au hilary.thompson@defence.gov.au
Brazil		Capt Nickolas ROSCHER	nickolas.roscher@marinha.mil.br
Canada	USCHC	Mr Louis MALTAIS	louis.maltais@dfo-mpo.gc.ca
		Mr Doug BRUNT	Douglas.Brunt@dfo-mpo.gc.ca
Denmark		Mr Jens Peter HARTMANN	jepha@gst.dk
Finland	BSHC	Mr Jarmo MÄKINEN	jarmo.makinen@fta.fi
France	EAtHC, MBSHC	Ing en chef Laurent KERLEGUER	laurent.kerleguer@shom.fr
Germany	-	Mr Thomas DEHLING	Thomas.Dehling@bsh.de
Hong Kong, China	EAHC	Mr Michael CM CHAU	michaelchau@mardep.gov.hk
India	NIOHC	RAdm Vinay BADHWAR	ia-inho@navy.gov.in
Iran (I.R. of)		Mr Saeid PARIZI	sparizi@pmo.ir
Italy	-	Cdr Carlo MARCHI	carlo.marchi@marina.difesa.it
Japan	-	Dr Yukihiro KATO	ico@jodc.go.jp
Norway	ARHC	Mr Evert FLIER	evert.flier@kartverket.no
Oman	RSAHC	Commander Thani AL MAHOKI	los@omantel.net.om
Poland		Mr Stanislaw PIETRZAK	s.pietrzak@mw.mil.pl
Singapore		Dr Parry OEI	parry_oei@mpa.gov.sg
Sweden	NHC	Ms Annika KINDEBERG	Annika.Kindeberg@Sjofartsverket.se
Turkey	-	Cdr Burak INAN	binan@shodb.gov.tr
United Kingdom		Mr Jamie MCMICHAEL-PHILLIPS (Chair)	Jamie.McMichael-Phillips@ukho.gov.uk
United Kingdom	NSHC	Mr Nigel SUTTON	Nigel.Sutton@UKHO.gov.uk

¹ RHC : Regional Hydrographic Commission

South Africa	SAIHC	Theo STOKES	hydrosan@iafrica.com
United States	MACHC	Mr John NYBERG	john.nyberg@noaa.gov
United States		Mr John LOWELL	john.e.lowell@nga.mil
RENCs	RENCs		
PRIMAR	PAC Chair	Mr Rainer MUSTANIEMI	Rainer.Mustaniemi@liikennevirasto.fi
PRIMAR	Operator	Ms Birte Noer BORREVIK	borbir@kartverket.no
PRIMAR	Director	Mr Hans Christoffer LAURITZEN	hans.christoffer.lauritzen@kartverket.no
IC-ENC	SC Chair	Captain Marc van der DONCK	MCJ.vd.Donck@mindef.nl
IC-ENC	Manager	Mr James HARPER	james.harper@ic-enc.org
IHO Secretariat	IHO Secretariat		
Director	Director	Mr Mustafa IPTES	mustafa.iptes@iho.int
Assistant Director	Assistant Director	Mr Yves GUILLAM (Secretary)	yves.guillam@iho.int

WENDWG Work Programme 2018-19 (to be approved at IRCC-10)

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. Expand the value of the RENC hydrographic data to all data users and the application of data management principles to extract the highest societal value of Member States effort.

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	<i>Left blank intentionally</i>
H	To progress the development of the IHO ENC catalogue
I	To provide support on capacity Building activities, as appropriate
J	To propose way ahead for assessing the long term consequences of not achieving full implementation of the WEND Principles
K	To address the relevance of information overlay services and their status in the global IHO ENC Programme
L	To support non-SOLAS vessels through license management of ENC data
M	To support Seabed 2030 Initiative

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	IRCC-10	2018	2020	O	Chair, RHCs, RENCs, IHO Sec	No ENC overlap that is navigationally-significant in 2020	IHO Resolution 1/2018 in force (IHO CL 19/2018 refers)
B.4	Make available an AIS traffic density database to the IHO Member States through the IHO GIS System (INToGIS II,...)	M	WENDWG-9	2018	2020	P	US, NO, FI, IHO Sec.	INToGIS II additional layer at the disposal of ICCWGs	For ENC gap coverage assessment
C.2	Report on RENC Harmonization issues and progress made	M	WENDWG-9	--	Permanent	O	RENCs		Done for 2017 . EAHC RECC invited to join.
D.3	Monitor ENC Producers who distribute their ENCs through a RENC	H		2014	Permanent	O	RENCs, IHO Sec.	Updated ENC Data Flow Diagram	IHO CL 59/2014 refers. Action WENDWG7/12 (second part)

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
F.1	Monitor global and regional ENC Coverage	H		2014	Permanent	O	UK, RHCs	Annual statistics	Done for 2017. Reports are now made by RHCs Rep. at WENDWG meetings
F.2	Using risk assessment methodologies, identify and consider ENC Gaps	H		2014	Permanent	O	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	WENDWG9	2014	Permanent	O	US, RHCs IHO Sec.		Action WENDWG7/07 WENDWG8/10
F.4	Provide relevant SPIs and WPIs on ENC adequate Coverage and ENC Producers	L		2017	Permanent	O	Chair (supported by UK), RENCs, IHO Sec	IHO Annual Report	On hold (waiting for SPRWG outcome)

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
H.1	Continue the development of the IHO ENC Catalogue	H		2014	Permanent	O	IHO Sec., UKHO, RENCs		New version approved to be commissioned at WENDWG8 (Decision WENDWG8/10)
H.3	Develop approved ENC schemes in every charting regions (S-57 ENCs, then S-101 ENCs), at least for small scales	H	WENDWG8	--	Permanent	O	RHCs	ENC Schemes available online	Action WENDWG7/08 Top priority identified in C-1
I.1	Provide support to CBSC on request for compelling requirements in the scope of the WENDWG activities	M		2015	WENDWG8	P	RHCs		As appropriate
J.5	Improve ENC full accessibility	H		2016	WENDWG9	O	Myanmar, Sri Lanka, Thailand, UK, Viet Nam		Action WENDWG7/12 WENDWG8/13
L.1	Consider possibility of offering a licence management service for non-SOLAS class vessels	M		2018	WENDWG9	P	RENCs		

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
M.1	Consider supporting the Seabed 2030 Initiative through the IHO DCDB with ENC data	M		2018	WENDWG9	P	ENC Producers, RENCs		