

**14th MEETING OF THE IHO INTER-REGIONAL COORDINATING COMMITTEE
IHO-IRCC14
Denpasar - Bali, Indonesia, 6-8 June 2022**

NORDIC HYDROGRAPHIC COMMISSION

NHC report to IRCC14

1. Chair

Chair: Pia Dahl Højgaard, Denmark from April 2022
Birte Noer Borrevik, Norway from April 2021

Vice-Chair: Jens Peter Weiss Hartmann, Denmark April 2022
Evert Flier, Norway from April 2021

2. Membership

Members: Denmark, Finland, Iceland, Norway, Sweden
IHO: Mathias Jonas
Associate member(s): None
Observers: None

3. Meetings:

Following NHC meetings have taken place:

NHC65 meeting - Stavanger, Norway 26. – 27. April 2022 Norway
Workshop on NHC strategy – VTC – 16. December 2021

Next meeting:

NHC 66 will take place 21 – 22 March 2023 in Aalborg, Denmark

4. Current NHC Working Groups:

- a) Nordic Chart Production Expert Group (NCPEG)
- b) Nordic Survey Expert Group (NSEG)

5. Status of IRCC actions and recommendations to RHCs

From IRCC13.

Recommendation 3: RHC and MS to advise the IHO Secretariat of any update/change to their position in relation with the CSB questionnaire (IHO CL 21/2020)

All NHC MS has answered the CBS questionnaire.

Recommendation 4: RHC to identify regional coordinators to act as a point of contact for CSB/Seabed 2030 and to raise the profile of data gather and provision within their respective Region.

NHC has appointed a point of contact for CSB/Seabed 2030

Recommendation 8. RHCs to try to plan at least one face-to-face meeting between the 2nd and the 3rd Session of the IHO Assembly.

NHC has planed a face-to-face meeting between the 2nd and the 3rd Session of the IHO Assembly.

Recommendation 9. RHCs to coordinate the efforts on the implementation of S-100 and promote the

cooperation and exchange of experiences.

NHC has appointed national NHC contact points.

6. Agenda Items:

NHC strategic workshop.

At the NHC strategic workshop potential users were divided into 5 different user groups, the user groups were again divided into 12 different subgroups. The Workshop participants developed 12 different matrices covering all subgroups, specifying the different datasets that it expected would be of interest for the subgroups. It was recommended that this document should be seen as a living document that can create the framework for internal and regional discussion about the user needs in a forward-looking perspective. See annex A. for the strategic matrix.

Alignment of the NHC statutes with the IHO strategy.

IHO has developed a new strategic plan. An important question is how this new strategic plan can/will impact NHC and where that can be best reflected. Two issues have been identified.

Firstly NHC is a slightly different RHC in that the regional geographical area is already taken care of through both the NSHC and the BSHC. NHC can therefore focus on the IHO strategic goals and targets on a more conceptual level and not on the SPI's as those are taken care of through NSHC and BSHC.

Secondly the current objectives in NHC statutes are very generic, provide little guidance and it could therefore be beneficial for NHC to align NHC statutes to the IHO strategic plan.

Strategic Manning for the Hydrographic Office of the Future.

A principle discussion about the changing requirements for the kind of personnel hydrographic offices will need in the future. It was agreed there would be a need to employ people with a much wider range of professional backgrounds in coming years to address changing demands.

S-100 implementation.

At the NHC65 meeting there was a discussion about how to make S-100 data sets that the national HO do not own available for the public and also how to distribute S-100 datasets in the future with a focus on distribution of S-102. It was noted that defining who owns what data is fundamental in the delivery of S-100 datasets. There was a discussion if the challenges is who 'owns' the data or more who is responsible for the creation of specific S-100 products. Questions were also raised regarding the distribution of dynamic datasets such as S-111 and how these would be updated.

NHC working groups.

There was an open discussion regarding the future of the two NHC expert groups NCPEG and NSEG with a focus on what the NHC MS wants to achieve with these two EG. It was agreed that there was a clear need for more specific guidance to the two groups. Based on the discussions it was agreed that NHC Member States should appoint suitable representatives to determine the future tasks of both the NSEG and NCPEG and to arrange meetings of the appropriate NHC Member States representatives in order to collaborate and define the scope, tasks, and way forward of both the NSEG and NCPEG.

The need for harmonization of T&P information in ENC.

Different NHC MS have different guidelines/policies for the inclusion of T&P messages in ENCs and this can potentially result in uncertainty among the mariners with regards to what kind of information is included in ENCs. More frequent updating of ENC due to updating with T&P is expected to increase this uncertainty. In order to minimize this uncertainty it was discussed if NHC MS should initiate activities with the aim of harmonizing policies for T&P messages. It was agreed that the NHC NCPEG would be the best placed to carry out this work and it was agreed that NCPEG should compile best

practice from all NHC Member States on procedures relating to the provision of T&P in ENC messages and make recommendations for standardization of practice.

7. NHC cooperation with stakeholders (organizations, industry, etc.):

NHC is continuously considering the possibility arranging back-to-back meetings with relevant stakeholders

8. Difficulties encountered and challenges yet to be addressed

Important findings:

- Recognition of changing needs with regards staffing requirements in HO's in the future
- Need to harmonize T&P practice in NHC MS
- HD Contours and the need for RHC coordination
- Gap Analysis – Consider changing statuses.

9. Achievements and lessons learned:

Achievements:

- 100% response rate form NHC MS to CSB Questionnaire
- Strategic work and recommendations to NHC MS
- S-100 Discussions from a NHC perspective
- Several countries have made progress with national MSDI activities

Lessons learned:

- Highlights need for a review of the two Expert groups in terms of membership, TOR's and work.
- S-100 Showcases, e.g. S-131 and S-122
- The importance of Pilot Project

10. Conclusions:

The cooperation within the NHC is very productive. The NHC MS participate actively in the NHC EGs. Member states have continued to contribute extensively to the work of the IHO and have been active participants in IHO working groups and Committees.

11. Actions required of IRCC:

The IRCC is invited to:

- a. endorse the NHC report
- b. discuss the need for other RHC to discuss T&P issues.
- c. discuss how to use the IHO portal to showcase S-100 activities.
- d. discuss how HO's can assume a geo-coordinating role to help ensure provision of data.

Pia Dahl Højgaard

NHC Chair



Annex A

NHC strategic work shop 2021.

At the 64th Nordic Hydrographic Commission Meeting that to place in 2021 the NHC MS discussed how to proceed with the NHC strategic work and the NHC MS agreed that the overall scope of the strategic work should be to identify the different user groups and data needed. It was agreed that the NHC strategic PT should investigate the need for existing data but also for possible new data needs and focus areas and present these findings at NHC65. At the NHC strategic workshop the members divided the potential users in 5 different user groups, the user groups was again divided into 12 different subgroups.

The Workshop participants, developed 12 matrices covering all subgroups, specifying the different relevant datasets that is expected for each subgroup.

This document should be seen as a living document that can create the framework for internal and regional discussion about the user needs in a forward-looking perspective.

The different NHC HO's, has different national legislations and different areas of responsibility which can influence on their inputs.

1) NHC user-groups from a 2025 – 2030 perspective.

	Priority (High – medium - low)	Name	Comments
1. Navigation/Ship born			
1	H	<u>Professional Shipping</u> (SOLAS), Commercial Shipping – Merchant shipping/ ferry services/ ocean towage/ Pilotage / VTS / Icebreaking/ Shipping agents/Cargo brokers/	Ship owners, SOLAS / ECDIS vessels
2	H	<u>Domestic shipping/ Fishing industries</u>	Fishing vessels
3	H	<u>Autonomous vessels</u>	Greater clarification on the actual data/product requirements is needed.
4	M	<u>Leisure market</u> Recreational boating/ Leisure fleet/ boat chartering and (rental)	Public use Water transports, Tourism
2. Security and emergency preparedness			
5	H	<u>Security and emergency preparedness.</u> Coastal authorities/ Marine governance and ocean management	Navy, Coast Guard, Marine Police, Customs Details on laws and regulations
3. Public management and research			
6	M to H	<u>Agencies and municipalities</u>	Marine Spatial Planning and sustainable development in the marine environment. Climate change preparedness, environmental mapping. High demand but currently low financial interest.
7	M	<u>Science, research</u> and academia,	Requires analysis ready data from marine observations combined with historical data to enable modelling and predictions. Climate and sustainable development
4. Blue Economy			
8	M to H	<u>Marine Industry</u> Private enterprises/ Blue Economy/ Marine business activities/ Coastal Engineering/ Constructors/ Commercial Ports, /	E.g. Wind farms, harbours, fishing, Fishing/Seafood, Oil and gas, Cargo Traffic, Underwater cables. Fish farms.
9	H	<u>Sustainable development</u> in the marine environment	Climate and sustainable development.
10	H	<u>Harbours and fairway</u> projects/ Fairway Infrastructure agencies	
5. Other use			
11	M	<u>Other HO's</u>	UKHO adoptions, etc
12	L	Other <u>non navigational data users</u>	Open Data users

2) The different data that is expected from the user groups, in a 2025 – 2030 perspective, including e.g. different updates, quality etc.

User group 1): Professional Shipping

	Name of datasets	Req. to update	Req. to Quality	Req. to Coverage	Req. to official data	Other requirements
a	Paper Charts	In line with NtM	Best available	All territorial waters	Official	
b	S-57/HDENC	S-4 Continues updates as required.	According to IHO standard/ CATZOC	Existing coverage/Shipping routes/ Total coverage	Official	Distribution through a RENC
c	S-101 Navigational Charts	S-4 Continues updates as required.	According to IHO standard/ Quality of bathymetry	Total coverage/ Main sailing routes and into main harbours	Official	Distribution through a RENC
d	S-102 Bathymetric surface data	S-4 Continues updates as required.	IHO S-44 must be fulfilled/ Uncertainty level	Main sailing routes and into main harbours	Official	Distribution through a RENC
e	S-104 Water Level	Near real-time	According to IHO Standard	Total coverage	Official	
f	S-111 Surface Currents	Near real-time	According to IHO Standard	Total coverage	Official	
g	S-124 Naw Warnings	S-4 Continues updates as required.	According to IHO Standard	Total coverage	Official	
h	S-127 Traffic Management	Frequently	According to IHO Standard	Total coverage	Official	
i	S-128 Catalogue of Nautical Products	When available/ In the event of change of Catalogue	IHO Standards	All official S-100 products	Official	Distribution through a RENC
j	S-129 Under Keel Clearance	Dynamic data	According to std.	Main sailing routes and into main harbours	Official hydrographic data.	Primarily S-102, S-104 and S-111 for calculation. Probably a new service through a trusted service provider
k	S-131 Marine Harbour Infrastructure	Daily	CATZOC	All main harbours	Official	Distribution through a RENC
l	Sailing Directions	TBD/ In line with NtM	TBD	Main fairways and ports	Official	

User group 1): Domestic shipping/ Fishing industries

	Name of datasets	Req. to update	Req. to Quality	Req. to Coverage	Req. to official data	Other requirements
a	Paper charts	Frequently	According to IHO Standard	Total coverage	Official	
b	S-57 ENC	Frequently	According to IHO Standard	Total coverage	Official	
c	S-101 ENC	Frequently	According to IHO standard/ Quality of bathymetry	Total coverage	Official	
d	S-124 Navigational Warnings	Daily basis	IHO Standards	Total coverage	Official	

e	S-128 Catalogue of Nautical Products	In the event of change of Catalogue	IHO Standards	Total coverage	Official	
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User group 1): Autonomous Vessels

	Name of datasets	Req. to update	Req. to Quality	Req. to Coverage	Req. to official data	Other requirements
a	S-57					Navigational Chart Data
b	S-101		According to IHO standard/ Quality of bathymetry			
c	S-102					
d	S-129 UKC					

User group 1): Leisure market

	Name of datasets	Req. to update	Req. to Quality	Req. to Coverage	Req. to official data	Other requirements
a	Paper Charts / raster charts	Frequently/ In line with NtM	According to IHO Standard	Total coverage	Official	
b	S-57	Frequently/ Every 14 days	According to IHO Standard/ CATZOC	Total coverage	Official/ Variable	
c	S-101	Frequently/ Daily/ In line with NtM	According to IHO Standard/	Total coverage	Official/ Variable	
d	S-102	Frequently/ When available	According to IHO Standard/	Total coverage/ Fairways, harbours, shallow waters less than 6 m.	Official/ Variable	Tailor-made depth models
e	S-124	Daily basis	IHO Standards	Total coverage	Official	
f	S-128	In the event of change of Catalogue	IHO Standards	Total coverage	Official	
g	S-131	When available	According to IHO Standard/	Total coverage	Official/ Variable	
h	Tailor-made products	On request	As agreed	As agreed	Official/ Variable	
i	Sailing Directions					

User group 2): Security and emergency preparedness

	Name of datasets	Req. to update	Req. to Quality	Req. to Coverage	Req. to official data	Other requirements
a	Paper charts	Frequently	According to IHO Standard	Total coverage	Official	
b	S-57/HDENC	S-4 Continues updates as required.	According to IHO Standard /CATZOC	Total coverage/ Existing coverage/Shipping routes	Official	Distribution through a RENC
c	S-101	S-4 Continues updates as required.	According to IHO Standard	Total coverage/ Main sailing routes and into main harbours	Official	Distribution through a RENC
d	S-102	S-4 Continues updates as required.		Main sailing routes and into main harbours	Official	
e	S-121 Maritime Limits and boundaries					
	S-124 Navigational Warnings	Daily basis	IHO Standards	Total coverage	Yes	
f	S-128 Catalogue of Nautical Products	When available	-	All official S-100 products	Official	
g	S-129 UKC	Dynamic data	According to std.	Main sailing routes and into main harbours	Official	
h	S-131 Marine Harbour Infrastructure	Daily	According to IHO Standard	All main harbours	Official	
i	Sailing Directions	TBD	TBD	Baltic Sea, Main fairways and ports	Yes	
j	S-xxx	On request	According to std.	As agreed	From official provider/ Variable	Converted data from other data providers
k	AML	On request	According to std.	As agreed	From official provider/ Variable	
l	Tailor-made products	On request	As agreed	As agreed	From official provider/ Variable	Other customized datasets, content classified
m	Recommended route information					(Pilot routes)
m	Underwater ENC's?					
o	Overview of emergency harbours and access to emergency services.					

User group 3): Public management

	Name of datasets	Req. to update	Req. to Quality	Req. to Coverage	Req. to official data	Other requirements
a	Paper Charts	TBD	IHO Standards	Total coverage	Official	Bilateral arrangements
b	S-101	Daily basis/ In line with NtM	IHO Standards	Total coverage		
c	S-102	Daily basis/ In line with NtM	IHO Standards	Total coverage		
d	S-121 Maritime limits and boundaries					
e	S-122 Marine protected areas					
f	S-124 Navigational Warnings	Daily basis	IHO Standards	Baltic Sea (FIN) 100 %	Yes	
g	S-128 Catalogue of Nautical Products	In the event of change of Catalogue	IHO Standards	Baltic Sea (FIN) 100 %	Yes	
h	Sailing Directions	TBD	TBD	Baltic Sea (FIN) - Main fairways and ports	Yes	
i	Customized datasets	Frequently	Depending on customer	Depending on customer	No	

User group 3): Science and research

	Name of datasets	Req. to update	Req. to Quality	Req. to Coverage	Req. to official data	Other requirements
a	S-57					
b	S-101	Daily basis/ In line with NtM	IHO Standards	Total coverage		
c	S-102	Daily basis/ In line with NtM	IHO Standards	Total coverage		
j	Tailor-made products	On request/ Depending on customer	As agreed/ Depending on customer	As agreed/ Depending on customer	From official provider/ Variable/No	Customized datasets/ WMS/WFS
k	Biology (Bio-diversity etc...)					
l	Chemistry (Nutrient contents etc...)					
m	Geological Data (Sea- bed composition, sea-floor geology, geological events etc...)					
n	Human Activities (Spatial extent and intensity)					
o	Seabed habitats (Types, Spatial distribution, maps...Etc...)					
p	Other forms of area management/designation					

User group 4): Blue Economy - Marine Industry

	Name of datasets	Req. to update	Req. to Quality	Req. to Coverage	Req. to official data	Other requirements
a	S-57 ENC	Frequently	According to IHO Standard	Harbours and fairways	Yes	
b	S-101 ENC	Daily basis /Frequently	According to IHO Standard	Harbours and fairways	Yes	
c	S-102 Bathy	Daily basis /Frequently	According to IHO Standard	Harbours and fairways	Yes	Bathymetric Data
d	S-122 Marine protected areas					
e	S-124 Navigational Warnings	Daily basis	IHO Standards	Baltic Sea (FIN) 100 %	Yes	
f	S-128 Catalogue of Nautical Products	In the event of change of Catalogue	IHO Standards	Baltic Sea (FIN) 100 %	Yes	
g	Depth models/ Bathymetric Data	When available	Variable	Total coverage	From official provider/ Variable/No	
h	Tailor-made products	On request	As agreed	As agreed	From official provider/ Variable	Also ENC/S-101 and S-102 /WMS/WFS
i	BIM (Building Information Model)	Frequently	Very high accuracy	Harbours areas being rebuilt as residential areas	Yes	
j	Fisheries and Aquaculture					
k	Oil and gas installations and pipelines					
L	Ships traffic					
m	Underwater cables/ Nautical cables and pipeline					
n	Protected areas					
o	Wind farms and other ocean energy facilities. Renewable energy					
p	Dredging areas/ Dumping and dredging zones					
Q	Sailing Directions	TBD	TBD	Baltic Sea (FIN) - Main fairways and ports	Yes	

User group 4): Blue Economy - Sustainable development

	Name of datasets	Req. to update	Req. to Quality	Req. to Coverage	Req. to official data	Other requirements
a	Renewable energy (Wind, waves, tides)					
b	Data on emissions from marine activities					
c	Weather and Climate information					
d	Marine protected areas (areas for the use of marine resources and conservation of biodiversity)					
e	Off Shore Activities (Oil and gas exploration and production, seismic research, carbon capture and storage)					

User group 4): Blue Economy - Harbours and fairway

	Name of datasets	Req. to update	Req. to Quality	Req. to Coverage	Req. to official data	Other requirements
a	S-57 ENC	Frequently	According to IHO Standard	Harbours and fairways	Yes	
b	S-101 ENC	Daily basis /Frequently	According to IHO Standard	Harbours and fairways	Yes	
c	S-102 Bathy	Daily basis /Frequently	According to IHO Standard	Harbours and fairways	Yes	
d	S-124 Navigational Warnings	Daily basis	IHO Standards	Total coverage	Yes	
e	S-128 Catalogue of Nautical Products	In the event of change of Catalogue	IHO Standards	Total coverage	Yes	
f	Sailing Directions	TBD	TBD	Main fairways and ports	Yes	
g	Customized datasets	Frequently	Very high accuracy	Harbours and fairways	Yes	
h	BIM	Frequently	Very high accuracy	Harbours and fairways	Yes	

User group 5): Other - HOs

	Name of datasets	Req. to update	Req. to Quality	Req. to Coverage	Req. to official data	Other requirements
a	Printing files	When New Edition of Paper Chart	According to IHO Standard	Adopted Paper Charts	Yes	
b	S-57 ENC	Frequently	According to IHO Standard	Neighbouring areas where HO have paper chart coverage in Swedish waters.	Yes	
c	S-101 ENC	Frequently	According to IHO Standard	Neighbouring areas where HO have paper chart coverage in Swedish waters.	Yes	

User group 5): Non navigational data users

	Name of datasets	Req. to update	Req. to Quality	Req. to Coverage	Req. to official data	Other requirements
a	S-101 data	TBD	TBD	Total coverage	No	Dissamination: Traficom Open Data Services
b	Bathymetric Data	TBD	TBD	Total coverage	No	Dissamination: Traficom Open Data Services
c	S-121 Maritime Limits and Boundaries	In the event of change of legislation		Total coverage	Yes	