NSHC REPORT

16ᵗʰ MEETING OF THE IHO INTER-REGIONAL COORDINATING COMMITTEE

(IRCC-16)

Santa Cruz Island – Galapagos, Ecuador
10-12 June 2024

1. Chair: Rear Admiral Angus Essenhigh OBE, The United Kingdom from April 2024 to present

Magnus Wallhagen, Sweden, from April 2022 to April 2024

Vice-Chair: Thomas Dehling, Germany from April 2024 to present
Rear Admiral Angus Essenhigh OBE, The United Kingdom from June 2023 to April 2024
Rear Admiral Rhett Hatcher, The United Kingdom from April 2022 to June 2023

2. Membership

Full Members: Belgium, Denmark, France, Germany, Iceland, Ireland, Netherlands, Norway, Sweden, United Kingdom

Associate members: None

Observers: None

3. Meetings

The 37th Conference of the NSHC (NSHC37) was held from 8-10 April 2024 in Malmo, Sweden.

The next Conference (NSHC38) will be hosted by the United Kingdom via VTC, it will be held on the 8-9 April 2025.

4. Current NSHC Working Groups

a)   North Sea International Chart Coordination WG (NSICCWG)
b)   North Sea Resurvey WG (RWG)
c)   North Sea Tidal Working Group (TWG)
d)   North Sea Maritime Safety Information WG (NSMSIWG)

Please note that the NSMSDIWG was closed during NSHC37. Germany volunteered to act as the MSDI Ambassador on behalf of the NSHC.

5. Status of IRCC15 actions and recommendations to RHCs

No	Action	Status
1	RHCs are encouraged to review the ROP and TOR based on Decision 9b of the Assembly on gender-inclusive language.	NSHC revised statutes approved during NSHC37 and now 'live'.
2	RHCs to start producing S-101 and other S-100 Products by focusing on a specific part of the region	In progress
3	RHC to discuss how HO's can assume a geo-coordinating role to help ensure provision of data on a regional level.	Closed. Provision of data on a regional level is coordinated through national and EU-related initiatives
4	RHC to ask the MS and potential contributors to consider the extended activities in the implementation of the S-100 Roadmap for HCA region.	MS encouraged
5	RHCs and Subordinate Bodies to consider opening the debate on future engagement in climate change related activities in reference to strategic goal 3.	Ongoing and proactively discussed during NSHC conferences
6	RHC to encourage relevant Member States to report to the IMO Secretariat and the Chair of the EGC Coordinating Panel on the progress and status of implementation of newly recognized mobile satellite services by MSI providers.	Closed. Coordinated through the NSMSIWG and reported at NSHC37.
7	RHCs to ensure representation of their region in the CBSC and encourage other IHO Member States to join in the work of the CBSC.	Closed/ongoing. Multiple NSHC members contribute to the CBSC.
8	RHCs to prioritize their participation in the WENDWG through the RHC Chart Coordinator or S-100 Coordinator	Ongoing. NSICCWG circulated and completed S1XX Readiness Questionnaire and continually contributes to the WENDWG via the NS WENDWG Rep who will also continue to keep the WEND100 Product Matrix updated (if necessary).
9	RHCs, if not done already, establish the S-100 Coordinator role or assign S-100 Coordinator duties as appropriate.	Closed. NSHC have decided to appoint the NSICCWG to have S100 Coordination role.
10	RHC S-100 Coordinators to update their WEND-100 IGIF Matrix submissions every year and share their schedule and roadmap to meeting the 2026 IMO target (S-100 ECDIS) at every WENDWG meeting	Closed. NSICCWG circulated and completed S1XX Readiness Questionnaire and continually contributes

No	Action	Status
		to the WENDWG via the NS WENDWG Rep who will also continue to keep the WEND100 Product Matrix updated (if necessary).
11	RHC Chart Coordinators/S-100 Coordinators report their planned S-101 chart schemes, usage bands 1 – 4, by 30 September. Request that submissions use INToGIS III when commissioned.	Completed/Ongoing through NSICCWG.
12	RHCs to appoint MSDI ambassadors and inform the MSDIWG with contact details.	Completed. Germany is the NSHC MSDI Ambassador.
13	RHC to encourage Member States to have more CSBWG participation.	MS Encouraged (NSHC37 recommendation 12)
14	RHC to encourage Member States to support the CSB initiative with positive actions, such as requiring all research vessels to collect bathymetric data for late uploading, when on passage or when it does not interfere with other research activities	MS Encouraged (NSHC37 recommendation 13)
15	RHCs to encourage Member State and stakeholder bathymetric data contributions to the DCDB, regardless of origin.	Closed. MS Encouraged at NSHC37 and is well functioning in the NSHC region. Bathymetry data is shared through the EU EMODNet Bathy portal, which subsequently is reused by GEBCO.
16	RHCs to collaborate with the DCDB on developing and highlighting annual regional breakdowns of data holdings as part of SPI reporting	See above (action ref 15)
17	To encourage RHCs to actively contribute with new data to GEBCO.	See above (action ref 15)
18	To invite RHCs to assign the INT paper chart scheme appropriateness check and possible amendment of the scheme.	MS Encouraged
19	To encourage RHCs to invite Member States to consider the provision of paper chart updating procedures depending on the findings of NCWG.	MS Encouraged
20	To encourage RHCs to invite Member States to consider the requirements (including regulations) for non-ECDIS mandated vessels (e.g. small commercial, fishing, leisure, etc) within national, regional and global discussions on this topic (HSSC15 decision 7 regarding Electronic Chart Systems PT refers)	MS Encouraged and recent update on the IHO ECSPT given by UKHO during NSHC37.

6. Agenda Items from NSHC37

IHO Work Program 1 – Corporate Affairs
B1   Information about activities of the IHO
B2   Information about IHO Council

IHO Work Program 2 – Hydrographic Services and Standards
C1   HSSC: Items relevant to NSHC, including S100 implementation
C2   Status and continuation of the Resurvey Working Group (RWG)
         NSHC37, April 2024, took the decision for the RWG to remain dormant until Chair finalized. A correspondence group will however lead on a review of the NSHC RWG TORs.
C2.1   Advancements in Satellite-Aided Mapping (DK)
C3   Report of Tidal Working Group (TWG)
         NSHC37, April 2024, approved revised TORs to now include gender-inclusive language
         The next TWG meeting will be held in the UK (dates TBC)
         Test datasets for S104 and S111 will be made available for cross national comparisons
C4   Update on the ECS Project Team (UK)
         The first IHO ECSPT meeting was held in July 2023
         UKHO carried out a UK survey on ECS use, now that the IHO Project Team is set-up, it will be examining the problem Internationally and to different sets of stakeholders as follows:
         National Regulators – Surveys now live.
         IHO Members/non-members – Surveys now live.
         All other stakeholders (Original Equipment Manufacturers, Trade Associations and Mariners) - Surveys will go live imminently.
C5   Sample Production of S127 dataset by BSH (DE)

IHO Work Program 3 – Inter Regional Coordination and Support
D1   Actions requested by IRCC - (see IRCC15 actions status above)
D1.1   NSHC input to the IHO Strategic Plan
         Refer to Annex A for NSHC feedback and review of the IHO SP
D2   IHO-EU Network Report (IENWG)
D3   Status of the Baltic Sea North Sea Marine Spatial Data Infrastructure Working Group (BSNSMSDIWG)
         Decision taken during NSHC37 that the BSNSMSDIWG would be closed. Germany volunteered to act as the MSDI Ambassador on behalf of the NSHC.
D4   Report of the North Sea MSI Working Group (NSMSIWG)
         S124 focus of the NSMSIWG and revised TORs approved during NSHC37 to reflect this.
D5   Report of the NSHC representative to WENDWG
D6   Report of the North Sea INT Chart Coordination Working Group (NSICCWG)
         NSICCWG S100 Questionnaire circulated to NSHC Members in Sept/Oct 23. 80% of NSICCWG members responded and results were shared during NSHC37 – from the results it is clear that members are keen to work collaboratively.
         NSICCWG revised TORs approved during NSHC37
D7   Report of the IHO Capacity Building Sub-Committee, including report of EWH
         The NSHC member states continue to support the CBSC through training and funding.
D8   Status CSB/GEBCO/Seabed2030
         MOUs have been signed by NHOs as part of the UN Ocean Decade, the Nordic

HC (NHC) is the first Regional Hydrographic Commissions to sign the MOU. NSHC members were encouraged during NSHC37 to consider signing MOUs to express their support to Seabed2030.

D8.1   EMODNet Bathymetry Report

D9   NSHC Website
The NSHC website will remain dormant until a new volunteer to host/manage the website is received. In the meantime, NSHC members were encouraged to consider alternatives to support file and general information sharing.

D10   Report of Baltic Sea e-Nav Project
First meeting was in November 2023, second meeting in April 2024.

Any Other Business (AOB)

E1   NSHC Statutes
Revised NSHC Statutes signed and approved during NSHC37 – now fully gender inclusive.

7. NSHC cooperation with stakeholders (organizations, industry, etc.)

CSB/GEBCO/Seabed 2030: the following update was given by Norway, Evert Flier.

- A strategy for GEBCO will be ready in time for IRCC.
- There are 8 goals, see Annex B.
- GEBCO week is in Fiji, it was suggested the location demonstrates an interest in the Pacific, where the impact of climate change is significant, plus heeding the feedback that it is important to enable feedback from SIDS/Large Ocean States who cannot afford to travel.
- It was noted that challenges include the reluctance to release data and fund new data collection.
- MOUs have been signed by NHOs as part of the UN ocean decade, the Nordic HC is the first HC to sign the MOU – Evert encouraged the NSHC to consider signing the MOU to express the HCs support to Seabed 2030. Evert will also raise this at ARC.
- Evert encouraged NHOs to reach out to national seismic companies and encourage them to contribute data.
- Benefits of CSB: on 26th April, there is an online workshop (VTC/Hybrid), NSHC encouraged participation, see circular letter CL14/24.
- UK gave an update on the progress of the ECS Project Team, MS were encouraged to complete the questionnaire.

EMODNet:

- An EMODNet Bathymetry Report was provided by Shom, Laurent Kerléguer, explained that there are 42k surveys built into the DTM, which is INSPIRE compatible.
- The data can be provided at Mean Sea Level or Lowest Astronomical Tide, it is free of charge and free to use.

Baltic e-Nav Scope:

- An update was provided by Sweden, Magnus Wallhagan.

- Goals:
    - develop production capabilities for S-101, S-102 and in Finland also S-104 and S-111.
    - Establish harmonisation rules.
    - Test, evaluate and refine the S-100 products.
    - Commercial rollout.
- Partners include DE, FL, DK, EE, LV (also LT and PL are associated).
- Furuno are also involved plus the Finnish Met Institute (to support their S-104 and S-111 goal).
- The proposal for an Under Keel Clearance (S-129) innovation which included SMA and Shom to Horizon was rejected.

8. Difficulties encountered and challenges yet to be addressed

Resurvey Working Group (RWG):

- NSHC has challenges to find volunteers to chair some of the working groups and manage the NSHC website. The RWG remains dormant at least until next NSHC meeting.
- There was an agreed action to review the TOR, to consider which basic tasks the RWG should cover, Thomas (DE) volunteered to lead a correspondence group, provided there were others, Norway, Denmark, UK, Netherlands, and Ireland agreed to contribute.

NSHC Website:

- There were no volunteers to host the website among the MS, so there will be no NSHC website.
- MS are requested to consider alternatives to support file sharing, acknowledging it is not simple for all NHOs to be able to use the same software / facilities due to IT security concerns/complications.

SENC:

- There was discussion regarding the use of and requirement of SENC.
- There is a proposal not allowing SENC delivery in an S-100 environment as it requires the producer nation signature throughout the process. S-100 offers improved cyber security, and this should be utilised, not SENC.
- It was acknowledged this could impact business delivery mechanisms, but it was supported by FR, SE and NO.
- It will be debated further at HSSC.

9. Achievements and lessons learned

- RAdm Angus Essenhigh confirmed as the new chair and Thomas Dehling as VC.
- Capacity Building: RAdm Angus Essenhigh advised MS that £100k has been allocated by UKHO to support EWH (not just in the NSHC region) including supporting travel to meetings, invited MS to signpost worthy causes to UKHO. BE

- and NO are also making contributions to support, and DK supports the EWH project.
- It is anticipated that the first continuous suite of S-100 information to be established between North America, crossing the North Sea into the Baltic.
- It was acknowledged and appreciated that the input into P-5 and C-55 were up to date across all the MS of NSHC.
- Amended NSHC Statutes were approved and signed.
- NSHC agreed to accept the proposed amends to the NSICCWG TOR, and closed action 3, 4 and 5 from 2023 as they are completed.
- MOUs have been signed by NHOs as part of the UN ocean decade, the Nordic HC is the first HC to sign the MOU – NSHC encouraged to consider signing the MOU to express the HCs support to SeaBed 2030.
- The Tidal Working Group via Germany, advised that test datasets for S-104 and S-111 will be made available for cross national comparisons to explore and collaborate on how to reduce differences.
- Germany provided an update on S-127 including a [sample production of S-127](#) created by BSH.
- UK gave an update for NSICCWG, advising that all MS who responded to the original S-100 readiness questionnaire, also responded to the latest version, providing a good basis for comparison.

10. Conclusions

- Focus continues toward implementing S-100 and data gathering for Seabed 2030
- NSHC member states are working on implementing S-100 allowing for a continuous suite of S-100 information across different waters.
- MS are also active in IHO Working Groups and Committees.

11. Actions required of IRCC

The IRCC is invited to take note of this Report.

Annex A - NSHC Input to the IHO Strategic Plan

General comments
- Maintain the three main goals in its general understanding but update and refine targets to better align with strategic objectives.
- Review and update targets under each goal to ensure they are specific, measurable, and aligned with broader strategic aims and specific goals.
- SPI's should be objectively reviewable, applicable across all member states, and ideally - based on data collected by the IHO Secretariat. Principles should allow for the use of data to assess SPI's, possibly through tools like IntoGIS. Draw inspiration from previous successful frameworks and adapt to national or regional needs.
- Clearly identify targets and assign review responsibilities, ensuring the strategy's objectives and progress are transparent and measurable.
- At Assembly 2023 it was decided to prioritize SP1 over SP2 and SP3. The priorities should be revised to ensure equal priority for each over time.
- Consider lunchtime presentations at IMO MSC/NCSR and MEPC (MPA's etc).
- The IHO structure should be representative of the MS, when considering diversity and inclusivity, gender balance etc.
- Respond to the requirement to create better metrics to measure, understand and define success or failures toward the SPIs.

Goal 1:
- Be clear that hydrography is more than bathymetry.
- Better interdependency between e-navigation and S-100 implementation. Make the SP more specific in context of the IMO implementation dates for S-100 ECDIS (2026/2029).
- Focus and priority for S-100 products that are needed on ECDIS mandated vessels for route monitoring (Phase 1) and planning (Phase 2).
- S-100 is evolving, there is no clear end point.
- Emphasis safety of navigation
- Recognize the importance of robust IHO S-100 Infrastructure suggesting its inclusion as specific target under goal 1.
- IHO contributing to cyber security for shipping. Management of the Security Scheme.
- It is obvious that we need to add a new object for the next Strategic Plan "To ensure operability and sustainability of the S-100 framework".
- Integrate capacity-building targets related to charting, digitization, satellite processing, and digital twins within each goal to foster global hydrographic competency.
- Competency and Learning Exchange: facilitate mutual learning and skill development among member states.
- Concentrate activity on S-100 development capacity building.
- A regional approach is adequate with the S-100 transition.
- Ratio of large harbours (based on the WPI index) covered by at least two S–100 layers. Include a target about adaptation of S-1xx and strive to achieve global coverage.
- Harmonization of carriage requirements regulations for the market currently outside the SOLAS carriage requirements for ECDIS. Taking into account the development of the product offering in connection with e-navigation.

- Increased engagement with Maritime Safety Administrations/Educational establishments in relation to S100.

Goal 2:
- Delete or rephrase the MSDI-related target. IHO will not build an MSDI portal but improve IHO GIS tools.
- Expand the scope of depth data collection and use beyond traditional methods, promoting societal benefits and climate change mitigation.
- IHO is the reference provider for the bathymetric twin of the ocean to be used in climate change related projects. Proposed indicator: Number of International Projects using DCDB as the reference for bathymetry.
- Promote innovative depth data collection (including satellite mapping) and modeling to support both navigation safety and broader societal needs.
- Consider focusing Goal 2 primarily on depth data, leveraging advancements in new technology for charting. Making depth data available for society in the best way possible.
- Using hydrographic data, and the IHO's data competencies to play a role in mitigating and modelling climate change-related changes.
- Holistic approach and include the nature of the seabed and not only focus on bathymetry for initiatives such as DCDB, GEBCO. Inclusion of hydrographic data such as backscatter for seabed classification and habitat mapping. Proposed indicator: Percentage of total seabed nature described in the DCBD dedicated layer.
- Apply UN shared guiding principles for geospatial information management to ensure interoperability and extended use of hydrographic data in combination with other marine-related data.
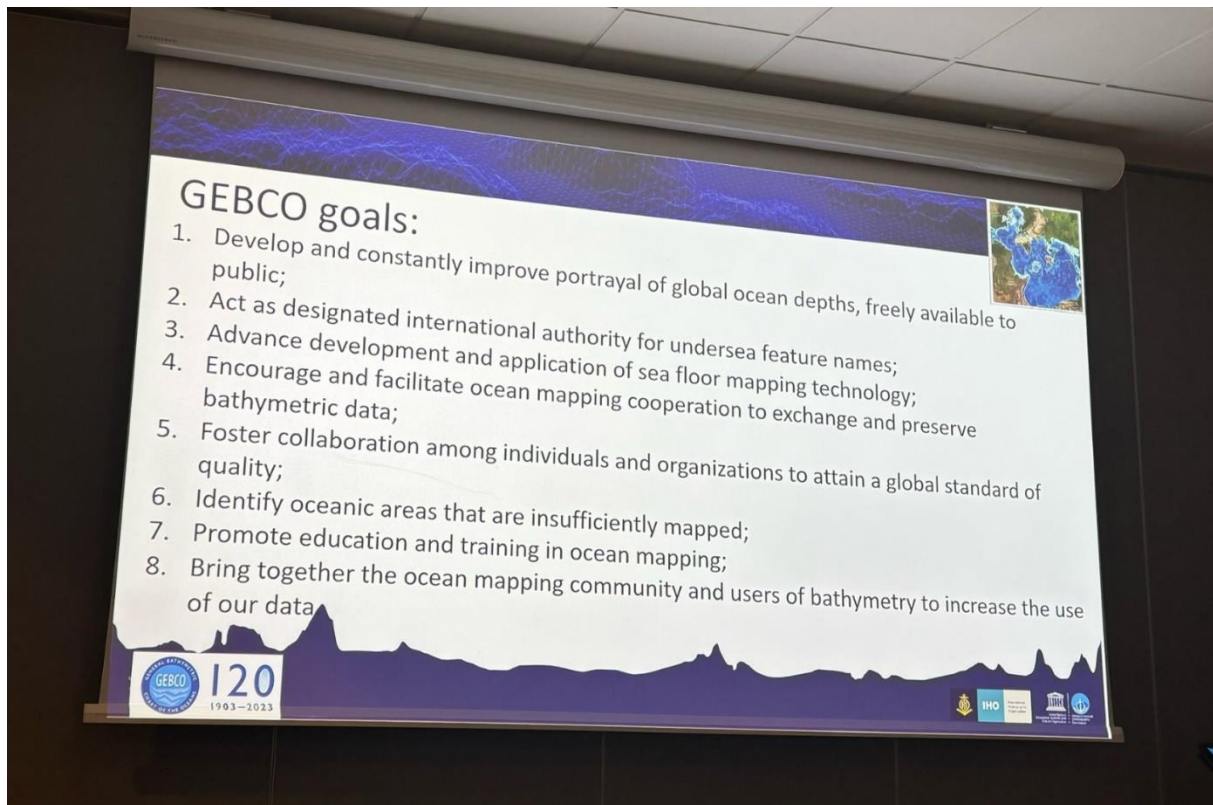- Include something about avoiding duplication in survey efforts.

Goal 3
- More clear connection to eco-system based Marine Spatial Planning and support of blue economy.
- Link to UN SDG's 2030 Agenda and UN Decade Ocean Research for Sustainable Development
- Strengthen IHO's role as a global player by integrating navigational safety, depth data, and other marine data, emphasizing collaboration, data alignment, and a broader narrative on the benefits of hydrography.
- Enhance partnerships with IMO, IALA, IOC, WMO and other relevant organizations to bolster IHO's global presence and effectiveness.
- Enhancing IHO's visibility and international positioning: implement strategies to make IHO more known and better positioned within the international governmental landscape.
- Maritime data at large: hydrography as support for initiatives such as the Digital Twin and general knowledge on our oceans: this may also include initiatives such as promoting Marine Protected Areas.
- Using the IHO competencies to both serve the broader society, but also as a tool to position the IHO and hydrography more broadly in the world.
- Target 3.2 on improved knowledge of the seafloor should include critical infrastructure on seabed (cables, pipelines) to cover seabed warfare.

- Improved communication and advertisement regarding the developing S-100 world including all socio-economic benefits e.g., Decarbonisation, Voyage Optimisation, Green Corridors and other Green/sustainable initiatives, as these support each of the 3 principal strategic goals.

Annex B: GEBCO 8 goals