

**15th MEETING OF THE IHO INTER-REGIONAL COORDINATING COMMITTEE
IHO-IRCC15
Tokyo, Japan, 12-14 June 2023**

BALTIC SEA HYDROGRAPHIC COMMISSION

BSHC report to IRCC15

1. Chair

Chair: Mr. Rainer Mustaniemi, Finland from September 2022 - present
Mr. Magnus Wallhagen, Sweden from September 2020 - September 2022
Captain Dariusz Kolator, Poland from October 2019 - September 2020
Captain Andrzej Kowalski, Poland from September 2019 - October 2019

Vice-Chair: Mr. Olavi Heinlo, Estonia from September 2022 - present
Mr. Rainer Mustaniemi, Finland from September 2020 - September 2022
Mr. Magnus Wallhagen, Sweden from September 2019 - September 2020

2. Membership

Members States: Denmark, Estonia, Finland, Germany, Latvia, Poland, Russian Federation, Sweden

Associate Member State: Lithuania

Observers: IHO Secretariat, United States of America, United Kingdom

3. Meetings:

Following BSHC meetings have taken place:

25th BSHC Meeting – VTC 22 September 2020

26th BSHC Meeting – VTC 21 - 23 September 2021

27th BSHC Meeting – Stockholm, Sweden 20 - 22 September 2022

Next meeting: 28th BSHC Meeting will take place 19 - 21 September 2023 in Helsinki, Finland

4. Current BSHC Working Groups:

- a) Re-Survey Monitoring WG (MWG)
- b) Chart Datum WG (CDWG)
- c) Baltic Sea Bathymetry Database WG (BSBDWG)
- d) Baltic Sea North Sea Marine Spatial Data Infrastructure WG (BSNSMSDIWG)
- e) Baltic Sea Maritime Safety Information WG (BSMSIWG)
- f) Baltic Sea International Chart Coordination WG (BSICCWG)
- g) Baltic Sea Hydrographic Commission Strategic Correspondence Group (BSHC SCG)

5. Status of IRCC actions and recommendations to RHCs

a) Status of actions (relevant for the BSHC):

IRCC14/ Action 1: IRCC invited RHCs and Subordinate bodies to provide comments and inputs on the governance document on Dual Fuel Concept for S-100 ECDIS, intersessionally. (Permanent)

Ongoing.

b) Status of Recommendations to RHCs:

IRCC14/Recommendation 1: RHC are encouraged to increase the collaboration with the Data Quality WG and to try to find candidates for the vacancy of the Chair and Secretary positions.

Ongoing.

IRCC14/Recommendation 2: RHC to discuss how HO's can assume a geo-coordinating role to help ensure provision of data on a regional level.

Completed. This task is taken care by Baltic Sea North Sea Marine Spatial Data Infrastructure WG.

IRCC14/Recommendation 4: RHC to start or proceed with the debate on how the climate change related activities can be further investigated and what can be the role of the IHO.

Ongoing.

IRCC14/Recommendation 5: 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.

Completed. This task is taken care by Baltic Sea Maritime Safety Information WG.

IRCC14/Recommendation 6: RHCs to establish an S-100 Coordinator role.

The Commission has established a Strategic Correspondence Group for overall coordination of the S-100 implementation within the Baltic Sea Region. The Commission has given priority to the implementation of S-100 route monitoring products, as recommended in the IHO S-100 Roadmap. Additionally,

- **The BSICC Working Group have been tasked to coordinate and harmonise the implementation of S-101 ENC and S-102 Bathymetric Surface products in the Baltic Sea region.**
- **The BSMSI Working Group has been tasked to coordinate the implementation of Navigational Warnings to S-124 format.**
- **The BSCD Working Group has been tasked to coordinate the implementation of Water Level Information to S-104 and Surface Currents to S-111 format.**

IRCC14/Recommendation 7: RHCs to apply Action WENDWG12/33 (WEND-100 Product Matrix will be made available on the WENDWG Repository webpage when finalized).

Completed.

IRCC14/Recommendation 8: RHC to encourage Member States and submitting institutions to engage with the IHO Secretariat early in the process of them preparing submissions for program recognition.

Ongoing.

IRCC14/Recommendation 9: RHC encourage Member States and submitting institutions to consult the Guidelines, the FAQs and the White Paper (IHR-Nov-2017 – Article: Maintaining the Standards of Competence for Hydrographic Surveyors and Nautical Cartographers) early in the process of preparing submissions for program recognition.

Ongoing.

IRCC14/Recommendation 10: RHC to encourage all Member States to respond to IHO CL 21/2020 and, if possible, offer a positive response, even if qualified, to enable provision of CSB data into the public domain collected from ships within waters subject to their national jurisdiction.

Completed.

IRCC14/Recommendation 11: RHC Chairs to bring the IRCC CL 1/2020 to the attention of all coastal states within their respective RHC, encouraging them to offer a positive response, even if qualified, to enable provision of CSB data into the public domain collected from ships within waters subject to their national jurisdiction.

Ongoing.

IRCC14/Recommendation 12: RHC to encourage Member States to release datasets or subsets into the public domain via the IHO DCDB.

Completed. BSHC Member States provide data to IHO DCDB via Baltic Sea Bathymetric Database and from national data services.

IRCC14/Recommendation 13: 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.

Ongoing.

IRCC14/Recommendation 14: Encourage RHCs to actively contribute with new data to GEBCO.

Completed. BSHC Member States provide data to GEBCO via Baltic Sea Bathymetric Database and from national data services.

IRCC14/Recommendation 15: Encourage RHCs to discuss how nations can share existing data.

Completed. BSHC Member States provide wide range of Data Portals and API's for hydrographic data viewing and downloading.

IRCC14/Recommendation 16: RHCs to encourage Member State and stakeholder bathymetric data contributions to the DCDB, regardless of origin.

Completed. BSHC Member States provide data to DCDB via Baltic Sea Bathymetric Database and from national data services.

IRCC14/Recommendation 17: RHC to reply to the WEND WG template SPI 1.3.1

Completed.**6. Agenda Items:**

The main activities of the BSHC are listed below.

BSHC Strategy

The commission has established a Strategic Correspondence Group to ensure that the Commission acts in accordance with the IHO Strategic Plan. In particular, the group will have a role to overall coordination of the S-100 implementation behalf of the Commission.

Hydrographic Re-survey Monitoring and coordination

The Baltic Sea is a vulnerable sea basin with extensive impact from human activities. A regional platform for environmental policy making, HELCOM, was established already in 1974 to protect the marine environment of the Baltic Sea from all sources of pollution. HELCOM, the Baltic Marine Environment Protection Commission (also known as the Helsinki Commission) is an Intergovernmental Organization (IGO) and a Regional Sea Convention in the Baltic Sea area. HELCOM has identified that it is of uttermost importance that the MS perform hydrographic

surveying in the Baltic Sea to avoid groundings due to shipping activities and establish a reliable source of knowledge of the seabed of the sea basin. The BSHC has identified as trusted organization to propose hydrographic survey plans to be adopted and agreed upon by HELCOM MSs through the Baltic Sea Action Plan. A revised Baltic Sea Action Plan including targets for hydrographic surveying, was agreed upon by the HELCOM MSs and the EU commission in November 2021.

BSHC maintains the hydrographic re-surveys plan for the Baltic Sea through the Re-Survey Monitoring Working Group (MWG) and reports on an annual basis to the HELCOM. Planned and performed surveys are being updated in a web-based tool, which is maintained and operated by the Swedish Maritime Administration. See <https://helcomresurvey.sjofartsverket.se/>. The BSHC MWG liaises also with the similar North Sea Hydrographic Commission (NSHC) Re-Survey Working Group.

Harmonized Chart Datum in the Baltic Sea

BSHC has developed the Baltic Sea Chart Datum 2000 (BSCD 2000) as a common Chart Datum and a Vertical Reference Frame for all waters within the Baltic Sea. It is derived from the European Vertical Reference Frame (EVRF) and Member States has agreed upon to implement the system for all navigational and hydrographic products and services. The first specification of BSCD 2000 was completed in 2013. BSCD 2000 is based on EVRF, which is also used as the vertical height reference on land in all Baltic Sea countries. BSCD 2000 is registered in the IHO GI Registry.

The Chart Datum Working Group (CDWG) is monitoring and provide guidance for the implementation of BSCD 2000. BSHC MSs are committed to implement BSCD 2000 in form of new editions of ENCs and paper charts as well as introducing BSCD 2000 as a new reference for water level information. The implementation is already finalized in many areas. However, a lot of implementation activities are still ongoing and the full implementation is expected to be finalized before 2027. To improve the geoid model further in the Baltic Sea, also gravity measurements and geoid computations are performed in cooperation between HOs, land survey authorities and academia.

The CDWG has been tasked to coordinate the implementation of Water Level Information for S-104 format and Surface Currents for S-111 format within the Baltic Sea.

Maritime Safety Information (MSI)

The Baltic Sea is a Sub-area of NAVAREA I (NE Atlantic – coordinated by UK) and is coordinated by Sweden. To facilitate that the GMDSS MSI services in the Baltic Sea are arranged in compliance with the applicable regulations and recommendations, the Baltic Sea MSI Working Group (BSMSIWG) has been established. The WG is monitoring and resolves possible transmitting and interference problems and also exchange information about major planned operations at sea that are expected to affect international shipping in coastal waters of the Baltic Sea. UK as the NAVAREA I coordinator participates also in the WG and the BSMSIWG Chair participates in the newly established North Sea MSI WG, covering whole NAVAREA I.

The BSMSIWG has been tasked to coordinate the implementation of navigational warnings in S-124 format within the Baltic Sea.

Baltic Sea INT-chart and ENC scheme coordination

The Baltic Sea INT Chart Coordination Working Group (BSICCWG) is the responsible body for nautical charts scheming, resolving ENC gaps and overlaps, ENC distribution, harmonization of ENCs and ENC coverage status in the Baltic Sea region. Finland chair the workgroup.

The WG also coordinates the coverage and the numbering of INT paper charts and is monitoring that the IHO Chart Web Catalogue is updated over the region. BSHC member states agreed on unlimited internal use of the small scale Overview ENC covering the whole Baltic, kindly provided by Germany as the responsible producer.

The BSICCWG have been tasked to coordinate and harmonise the implementation of S-101 ENC and

S-102 Bathymetric Surface products in the Baltic Sea region.

Marine Spatial Data Infrastructure (MSDI)

MSDI provides hydrographic information to stakeholders beyond the classic field of surface navigation. The two neighbouring hydrographic commissions BSHC and NSHC have seen the importance to deal with MSDI as a regional corporate approach and have established the joint BSHC and NSHC Baltic Sea North Sea Marine Spatial Data Infrastructure Working Group (BSNSMSDIWG). The WG reports to both Commissions and co-operate closely with the IHO MSDIWG. The BSNSMSDIWG has participated in the first two phases of the OGC-federated MSDI pilot project, aiming to implement IHO and OGC standards for Marine Protected Areas (S-122). The report is available on the OGC webpage (OGC MSDI: IHO&OGC). Based on discussions at the recent Strategy Correspondance Group meeting, as well as at NSHC36, the working group is currently dormant.

WENDWG

BSHC is represented in the WEND Working Group by Finland. The representative shall report to the Commission, including; review of the progress on the work items of WEND, resolving overlaps, ENC distribution and harmonisation, ENC coverage status, the WEND principles and the development of the new WEND-100 principles. BSHC receives the annual report and gives further guidance to the BSHC WENDWG representative.

IHO-EU Network WG (IENWG)

Sweden is the BSHC representative in IENWG. Also several other BSHC member states have been actively participating in the working group since its inception in 2012. Several of the BSHC MS participated in the WG 10 years' anniversary in Brussels in May 2022. Several Baltic Sea HOs have been partners in a consortium, coordinated by SHOM in France, with the objective to develop one of the European Commission's flagship maritime projects the European Marine Observation and Data Network (EMODnet) Bathymetry Portal. Bathymetry for all European waters is made available at the EMODnet Bathymetry portal and data is also subsequently reused by GEBCO, Google and many other stakeholders.

Baltic Sea Bathymetric Database

Sweden operates a cross border bathymetry database and a geoportal, the Baltic Sea Bathymetry Database (BSDB) - data.bshc.pro, on behalf of the Commission. BSHC Member States are providing gridded bathymetry information and the Baltic Sea Bathymetry Database Working Group (BSBDWG) acts as a coordinator. Data density differs between the Member States and has a minimum resolution of 500 m. The website is fairly widely used and the portal is running smoothly. It is possible to view, download data or use the WMS service provision.

The BSBDWG also coordinate bathymetry data in the Baltic Sea for the usage in the EMODNet Bathymetry portal, being the major hub for bathymetry data within Europe. Bathymetry for all European waters is made available at the EMODNet Bathymetry portal and this data is also subsequently reused by GEBCO, Google and many other stakeholders. Upon request from the Seabed 2030 project and the IHO CSBWG Chair, the BSBDWG Chair has been appointed as the BSHC coordinator for Seabed 2030 and crowdsourced bathymetry.

Capacity Building

Activities in CB are monitored within BSHC. Germany is the CB Coordinator for the BSHC.

BSHC Website

BSHC has a website www.bshc.pro operated by Sweden. The website consist information on the BSHC WGs including ToRs, WG members and minutes from their meetings. Useful links to services provided by the Commission such as the Baltic Sea Bathymetric Data portal and the BSHC-HELCOM Re-Survey Scheme, are available as well.

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

BSHC is cooperating with Helsinki Commission (HELCOM), European Marine Observation and Data Network (EMODnet), GEBCO and Baltic Operational Oceanographic System (BOOS).

Baltic Sea Hydrographic Offices together with Oceanographic, Academia and Private sector partners are planning to speed up S-100 implementation by asking additional funding from EU. If granted by EU, *the Baltic Sea e-Nav project* will start in November 2023.

8. Difficulties encountered and challenges yet to be addressed

a) Difficulties:

Suspension of all BSHC-Related Activities by Denmark, Estonia, Finland, Germany, Latvia, Poland and Sweden with the Russian Federation. The BSHC Full Members Denmark, Estonia, Finland, Germany, Latvia, Poland and Sweden each decided, that collaboration with the Russian Federation is considered no longer technically possible under the current situation in Ukraine.

The ongoing Covid-19 pandemic hindered the Commission to conduct face-to-face meetings from end of 2019 to July 2022. Having annual VTC meetings for some of the most important tasks was managed by the Commission and it's underlying working groups but otherwise many planned actions and tasks was postponed.

b) Challenges:

A major challenge is the implementation of S-100 products and services in the region. Currently the BSHC has prioritized to coordinate implementation of the route monitoring products, as pointed out in the IHO S-100 Roadmap. Appointed WGs will start up discussions on harmonization, timelines, technical coordination and dissemination strategies of S-100 products. A need for knowledge building on S-100 standards and implementation is also identified.

9. Achievements and lessons learned:

The revised BSHC Re-survey plan was adopted and included in the HELCOM Baltic Sea Action Plan, signed at HELCOM Ministerial Meeting by the MSs and the EU Commission. The most important waterways and areas covering common shipping routes have been now re-surveyed and work continues with the lower priority waters.

The implementation of the common Baltic Sea Chart Datum 2000 (BSCD2000) proceeds satisfactorily by many member states.

The Commission has taken first steps to coordinate the S-100 implementation within the BSHC Region. The Baltic Sea Strategic Correspondence Group has been established to ensure that the work of the Commission will be in line with the IHO Strategic Plan.

Some Member States are populating their ENC's with high density (intervals) depth contours and depth areas, respectively. High density contours will be applied for the major merchant fairways and ports in large scale ENC's (Berth, Harbour and Approach) products.

10. Conclusions:

The cooperation within the BSHC is very productive and seven out of eight Member States and one Associate Member State participate actively in the work of BSHC WGs and other activities of the Commission. In addition, the Member States of the region are well presented in many IHO WGs, in two

Committees and in the Council. Currently, there are several ongoing important cooperation projects and in addition a new S-100 related development and implementation project (Baltic Sea eNav) is about to be launched in the region.

11. Actions required of IRCC:

The IRCC is invited to:

- a. Note the report of the Baltic Sea Hydrographic Commission.
- b. Take any other action considered appropriate.

Rainer Mustaniemi

BSHC Chair