

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

BALTIC SEA HYDROGRAPHIC COMMISSION

BSHC report to IRCC14

1. Chair

Chair: Mrs. Pia Dahl Højgaard, **Denmark**; from August 2018
 Captain Andrzej Kowalski, **Poland**; from September 2019
 Captain Dariusz Kolator, **Poland**; from October 2019
 Mr. Magnus Wallhagen, **Sweden**; from September 2020

Vice-Chair: Captain Andrzej Kowalski, **Poland**; from August 2018
 Mr. Patrik Wiberg, **Sweden**; from September 2019
 Mr. Rainer Mustaniemi, **Finland**, from September 2020

2. Membership

Member States:	Denmark, Estonia, Finland, Germany, Latvia, Poland, Russian Federation, Sweden
Associate Member:	Lithuania
Observers:	IHO Secretariat, United Kingdom, USA

3. Meetings:

Following [RHC] meetings have taken place:

23rd BSHC: Aalborg (Denmark); 28-29 August 2018
 24th BSHC: Gdańsk (Poland); 10-12 September 2019
 25th BSHC: VTC; 22 September 2020
 26th BSHC: VTC; 21 – 23 September 2021
 27th BSHC: Stockholm, Sweden, 20 – 22 September 2022

4. Current [RHC] Working Groups:

- a) Re-Survey Monitoring Working Group (MWG)
- b) Chart Datum Working Group (CDWG)
- c) Baltic Sea Bathymetry Database Working Group (BSBDWG)
- d) Baltic Sea North Sea Marine Spatial Data Infrastructure Working Group (BSNSMSDIWG)
- e) Baltic Sea MSI (Maritime Safety Information) Working Group (BSMSIWG)
- f) Baltic Sea INT Chart Coordination Working Group (BSICCWG)

5. Status of IRCC actions and recommendations to RHCs

a) Status of actions (relevant for the [__RHC]):

Action IRCC13/06, RHCs and WGs to include the measurement of the SPI attributed by IRCC in their annual Work Plans.

Status – ongoing.

A Strategic Correspondence Group has been established to address the issue.

Note: Action list is available from:

www.iho.int/ircc > IRCC13

b) Status of Recommendations to RHCs:

Recommendation IRCC13/07 and 09, To consider extend the role of Charting Regional Coordinators for the implementation of the S-100 Implementation Roadmap.

Status – done.

Decision taken at BSHC26 to extend the role of the BSICCWG to have an overall coordinating role for S-100 implementation with special focus on S-101 ENC's and S-102 Bathymetry. ToRs to be amended and agreed upon at BSHC Commission level. In addition, the BSHC Chart Datum WG will coordinate the implementation of Water Level Information S-104 and Surface Currents S-111 and the BSHC MSI WG will coordinate the implementation of Navigational Warnings S-124.

Recommendation IRCC13/14, To encourage all Member States to actively contribute with new data to GEBCO and to discuss how MS can share existing data.

Status – done.

Contribution is canalized through the BSHC Bathymetry Database WG. This WG do also coordinate bathymetry data in the Baltic Sea for the usage in several international portals (Baltic Sea Bathymetry Database, EMODNet Bathymetry and GEBCO).

6. Agenda Items:

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 10 years' anniversary in Brussels in May 2022. As an important outcome several Baltic Sea HO's 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 this data is also subsequently reused by GEBCO, Google and many other stakeholders.

Hydrographic Re-survey Monitoring and coordination including cooperation with HELCOM

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 been identified as the trusted organization to propose hydrographic survey plans to be adopted and agreed upon by HELCOM MS through the Baltic Sea Action Plan. A revised Baltic Sea Action Plan, including targets for hydrographic surveying was agreed upon by the HELCOM MS and the EU commission in November 2021.

BSHC maintains this hydrographic re-surveys plan for the Baltic Sea, through the Re-Survey Monitoring Working Group (MWG) and reports on an annual basis to HELCOM. Planned and performed surveys are being updated in a web based interface maintained and operated by the Swedish Maritime Administration. See <https://helcomresurvey.sjofartsverket.se/>. Surveys are also being regularly coordinated between neighbouring MS. 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 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 based on the European Vertical Reference Frame (EVRF) and has been agreed upon by the BSHC MS to be implemented in all hydrographic products and Water Level services. The first specification of BSCD 2000 was completed in 2013. Since BSCD 2000 is based on EVRF, which is also used as the vertical height reference on land in all Baltic Sea countries, it can directly be used in GNSS applications for vertical determination. BSCD 2000 is also registered in the IHO GI Registry.

The Chart Datum Working Group (CDWG) is monitoring and gives guidance for the implementation of BSCD 2000. BSHC MS are committed to implement BSCD 2000 in form of new editions of ENC's and paper charts as well as introducing BSCD 2000 as a new reference for water level information and 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 at least five years from now. 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.

At the BSHC26 (September 2021) it was decided that the CDWG in addition to its existing responsibilities also should coordinate the future implementation of water level information S-104 and surface currents S-111 within the Baltic Sea.

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.

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). This WG reports to both Commissions and cooperate also closely with the IHO MSDI WG. A project to test the usage of the new IHO standard for Marine Protected Areas (S-122) for MSDI purposes has started under the coordination of OGC (Open Geospatial consortium) and with support from the Danish Geodata Agency. The project will report the outcome to applicable IHO WGs (NIPWG, MSDI WG).

Maritime Safety Information (MSI)

The Baltic Sea is a Sub-area of NAVAREA I (NE Atlantic – coordinated by UK) and the Sub-area is coordinated by Sweden. To facilitate that the GMDSS MSI services in the Sub-area are arranged in compliance with the applicable regulations and recommendations the Baltic Sea MSI Working Group (BSMSIWG) has been established by BSHC. 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.

At the BSHC26 (September 2021) it was decided that the BSMSIWG in addition to its existing responsibilities also should coordinate the future implementation of navigational warnings in the coming S-124 format within the Baltic Sea.

IHO WENDWG and coordination of INT-charts and ENC's

BSHC is regularly represented in the IHO WENDWG by Finland and FI reports annually to the Commission, including review of the progress on the work items of WEND, the WEND principles and the development of the new WEND-100 principles. Technical issues such as resolving gaps and overlaps, ENC distribution, harmonization of ENC's and ENC coverage status are prepared by the Baltic Sea INT Chart Coordination Working Group (BSICCWG), chaired by Finland.

The working group 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.

At BSHC26 (September 2021) it was decided that the BSICCWG should have an overall coordinating role for the implementation of S-100 in the Baltic Sea, with special focus on coordinating the implementation of new ENC S-101 and bathymetry S-102.

BSHC Strategy

At BSHC26 (September 2021) it was also decided to establish a Strategic Correspondence Group to ensure that the Commission acts in accordance with the IHO Strategic Plan. A questionnaire on the status of the Strategic Performance Indicators has been distributed and most MS have responded. The Correspondence Group will report its outcome and possible proposals to the Commission in due course.

Capacity Building

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

BSHC Website

BSHC has developed a website; www.bshc.pro. It is operated by Sweden. Information on the BSHC WGs is available as well as minutes from their meetings. Further MS information and useful links to other services such as the BSBD portal and the Re-Survey plan are available as well.

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

As described above the BSHC is a recognized organisation by HELCOM, the Baltic Marine Environment Protection Commission, and BSHC reports annually to HELCOM on the status of hydrographic surveying.

Meteorological, Oceanographic, Geodesy and Maritime experts, from academia and national authorities are participating in several of the BSHC WGs.

Engagement with industry is limited to specific projects.

8. Difficulties encountered and challenges yet to be addressed

a) Difficulties:

After the invasion of Ukraine by the Russian Federation the BSHC took the decision to suspend its meetings until further notice, which was in line with decisions taken by many other international organisations. Parts of the WGs activities can continue by correspondence, but it is an unfortunate situation that no meetings can take place which currently hampers the work of the Commission.

The ongoing Covid-19 pandemic has hindered the Commission to conduct face-to-face meetings since 2019. It is crucial to be able to conduct physical meetings the coming year to successfully continue close and productive cooperation within BSHC.

b) Challenges:

A major challenge is the implementation of S-100 products 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 timelines, technical coordination, dissemination strategies and identifying need for knowledge building.

9. Achievements and lessons learned:

Achievements:

- Revised BSHC Re-survey plan adopted and included in the Baltic Sea Action Plan, signed at HELCOM Ministerial Meeting by HELCOM MS and the EU Commission.
- Ongoing implementation of the Baltic Sea Chart Datum 2000 (BSCD2000).
- Decision taken to coordinate the S-100 implementation within the BSHC Region.
- Strategic Correspondence Group established to ensure that the Commission is in line with the IHO Strategic Plan.
- Pilot project established, initiated by the Baltic Sea North Sea MSDI WG, to test Marine Protected Areas in S-122.

Lessons learned:

- International cooperation is vulnerable and nothing that we should take for granted.

10. Conclusions:

The cooperation within the BSHC is very productive and all MS, except one, are participating actively in the BSHC WGs and in the work of the Commission. In addition, several MS are also active in many other IHO WGs, the two Committees and in the Council.

11. Actions required of IRCC:

The IRCC is invited to:

- a. note the BSHC report, and
- b. take any further action as it may consider appropriate

Magnus Wallhagen

BSHC Chair