

**16<sup>th</sup> MEETING OF THE IHO INTER-REGIONAL COORDINATING COMMITTEE  
IHO-IRCC16  
Santa Cruz Island - Galapagos, Ecuador, 10-12 June 2024**

**BALTIC SEA HYDROGRAPHIC COMMISSION**

**BSHC report to IRCC16**

**1. Chair**

**Chair:** Mr. Olavi Heinlo, Estonia from September 2023 – present  
Mr. Rainer Mustaniemi, Finland from September 2022 – September 2023  
Mr. Magnus Wallhagen, Sweden from September 2020 - September 2022  
Captain Dariusz Kolator, Poland from October 2019 - September 2020

**Vice-Chair:** Mr. Janis Krastiņš, Latvia from September 2023 - present  
Mr. Olavi Heinlo, Estonia from September 2022 – September 2023  
Mr. Rainer Mustaniemi, Finland from September 2020 - September 2022  
Mr. Patrik Wiberg, Sweden from October 2019 – September 2020

**2. Membership**

Members States: Denmark, Estonia, Finland, Germany, Latvia, Poland, Russian Federation (all activities with Russian Federation have been suspended due to the war in Ukraine), Sweden.

Associate Member State: Lithuania

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

**3. Meetings:**

Following BSHC meetings have taken place:

25<sup>th</sup> BSHC Meeting – VTC 22 September 2020

26<sup>th</sup> BSHC Meeting – VTC 21 - 23 September 2021

27<sup>th</sup> BSHC Meeting – Stockholm, Sweden 20 - 22 September 2022

28<sup>th</sup> BSHC Meeting – Helsinki, Finland 19 - 21 September 2023

Next meeting: 29<sup>th</sup> BSHC Meeting – Tallinn, Estonia 17 - 19 September 2024

**4. Current BSHC Working Groups:**

- a) Re-Survey Monitoring WG (MWG)
- b) Chart Datum, Water level and Currents WG (CDWCWG)
- c) Baltic Sea Bathymetric Database WG (BSBDWG)
- d) Baltic Sea Maritime Safety Information WG (BSMSIWG)
- e) Baltic Sea International Chart Coordination WG (BSICCWG)

**5. Status of IRCC actions and recommendations to RHCs**

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

**None**

**b) Status of Recommendations to RHCs:**

*IRCC15/ Recommendation 1: RHCs are encouraged to review the ROP and TOR based on Decision 9b of the Assembly on gender-inclusive language.*

**Ongoing. Action BSHC28/7 – deadline BSHC29**

*IRCC15/ Recommendation 2: RHCs to start producing S-101 and other s-100 Products by focusing on a specific part of the region.*

**Ongoing. Coordination of production of S-101 and other S-100 products has been tasked to relevant BSHC WG-s**

*IRCC15/ 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**

*IRCC15/ Recommendation 4: RHCs and Subordinate Bodies to consider opening the debate on future engagement in climate change related activities in reference to strategic goal 3.*

**Ongoing. Item planned for BSHC29.**

*IRCC15/ Recommendation 6: RHCs to ensure representation of their region in the CBSC and encourage other IHO Member States to join in the work of the CBSC.*

**Completed**

*IRCC15/ Recommendation 7: RHCs to prioritize their participation in the WENDWG through the RHC Chart Coordinator or S-100 Coordinator*

**Completed**

*IRCC15/ Recommendation 8: RHCs, if not done already, establish the S-100 Coordinator role or assign S-100 Coordinator duties as appropriate.*

**Completed. Baltic Sea Strategic Correspondence Group has been closed down, but BSICCWG is assigned the duties of the S-100 overall coordination.**

*IRCC15/ Recommendation 9: 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.*

**Completed**

*IRCC15/ Recommendation 10: RHC Chart Coordinators/S-100 Coordinators report their planned S-101 chart schemes, usage bands 1 – 4, by 30 September. Request that submissions use INTToGIS III when commissioned.*

**Completed**

*IRCC15/ Recommendation 11: RHCs to appoint MSDI ambassadors and inform the MSDIWG with contact details.*

**Completed. BSHC has appointed Ms Kimberly Mason from Germany as its representative.**

*IRCC15/ Recommendation 12: RHC to encourage Member States to have more CSBWG participation.*

**Completed**

*IRCC15/ 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.*

**Completed**

*IRCC15/ Recommendation 14: RHCs to encourage Member State and stakeholder bathymetric data contributions to the DCDB, regardless of origin.*

**Ongoing**

*IRCC15/ Recommendation 15: RHCs to collaborate with the DCDB on developing and highlighting annual regional breakdowns of data holdings as part of SPI reporting.*

**Ongoing**

*IRCC15/ Recommendation 16: To encourage RHCs to actively contribute with new data to GEBCO.*

**Complete**

*IRCC15/ Recommendation 17: To invite RHCs to assign the INT paper chart scheme appropriateness check and possible amendment of the scheme.*

**Ongoing**

*IRCC15/ Recommendation 18: To encourage RHCs to invite Member States to consider the provision of paper chart updating procedures depending on the findings of NCWG.*

**Ongoing**

*IRCC15/ Recommendation 19: 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).*

**Ongoing. ACTION BSHC28/10 for MS to report back at BSHC29.**

## **6. Agenda Items:**

The main activities of the BSHC are listed below.

### Changes related to BSHC WG-s

BS-NSMSDIWG closed. The Baltic Sea Strategic Correspondence Group (BS-SCG) concluded that national MSDIs are established under the INSPIRE directive and thus the need for a MSDIWG under BSHC is limited. Based on the recommendations from the SCG the BSHC agreed to close the BS-NSMSDIWG as a BSHC WG and instead focus the engagement in the IHO MSDIWG.

BS-SCG closed. The SCG concluded that a specific BSHC Strategic Plan is not needed. The BSHC TORs and the directions from the IHO, mainly through IRCC, gives enough guidance for the work of the Commission. BSHC decided to close the BS-SCG.

Renaming of CDWG to CDWCWG. At the BSHC27 CDWG was tasked to coordinate the implementation of Water Level Information for S-104 format and Surface Currents for S-111 format within the Baltic Sea. BSHC28 approved amendments to the CDWG TORs and Work Programme and endorsed new name for the CDWG, the new name is "Chart Datum, Water Level and Currents WG (CDWCWG)".

### 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 been 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/>.

### 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.

CDWCWG 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. BSCD 2000 will also be used for all applicable S-100 products.

To improve the geoid model further in the Baltic Sea, also gravity measurements and geoid computations have been performed in cooperation between HOs, land survey authorities and academia. As a result, a new geoid model has been computed for the Baltic Sea and was made available late 2023.

The CDWCWG 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 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.

Several BSHC members are involved in the EU INTERREG MaDaMe project that is partially concentrated on S-124 and its transfer solutions.

#### 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 chairs 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. Also, the BSICCWG has a task to monitor the overall S-100 implementation in the region.

#### 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. WEND-100 Product Matrix IGIF and questionnaire is updated and reported annually to WENDWG. 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. Many of the Baltic Sea HOs are 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 has operated a widely used cross border bathymetry database and a geoportal, the Baltic Sea Bathymetry Database (BSDB) - [data.bshc.pro](http://data.bshc.pro), on behalf of the Commission. BSHC Member States have provided gridded bathymetry information and the Baltic Sea Bathymetry Database Working Group (BSBDWG) acts as a coordinator.

In summer 2023 the physical servers of the portal were retired and migration of the BSBD setup to newer servers has been aborted due to that the task has been proven to require too many resources. BSDB is not currently operational and BSBDWG proposed to shut down the database and the service. A temporary solution will run until September 2024. The Commission agreed to direct BSBD users to the EMODNet Bathymetry portal and to consider the current BSBD datasets as historical datasets.

#### 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](http://www.bshc.pro) operated by Sweden. The website consists of 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 BSHC-HELCOM Re-Survey Scheme.

## **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 have been granted funding from the INTERREG Baltic Sea Region programme to speed up S-100 implementation. Baltic Sea E-nav project was launched with a kick-off meeting in autumn 2023 and will continue until late 2026.

## **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 possible due to the war in Ukraine.

### **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 have started discussions on harmonisation, 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:**

Baltic Sea e-Nav project approved by Interreg Baltic Sea Region programme in June 2023. HO-s as project partners are SE (coordinator), DE, FI, DK, EE, LV, associated: LT, PL. Also, academia, private sector (OEM), RENC-s and meteorological agency are involved. Project scope is to develop production capabilities of S-101, S-102 and to some extent S-104. Establish harmonization rules for S-10x products of BSHC members. Test, evaluate, refine and commercial rollout of S-10x products. Project duration 2023-2026.

Re-Survey Monitoring Working Group will continue to monitor the progress of the HELCOM Re-survey Scheme and update Re-Survey Database. It is of importance to have the database enhanced and interface operate reliably. 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 active role to coordinate the S-100 implementation within the BSHC Region. The BSICCWG is assigned the responsibility 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 Commission and its Member States are well presented in many IHO WGs, the two Committees and in the Council. Currently, several important cooperation projects are ongoing, including a new S-100 related development and implementation project Baltic Sea e-Nav.

**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.

Olavi Heinlo

Estonia

BSHC Chair