

26th Baltic Sea Hydrographic Commission Conference

21–23 September 2021 – Video Conference

FINAL MINUTES OF THE CONFERENCE

A. Opening formalities

A.1. Opening of the Conference

Docs:

- [BSHC26 A1.3 List of-Participants](#)
- [BSHC26 A1.2 List Documents](#)

The Chair of the Conference *Mr. Magnus Wallhagen* (Chair) opened the 26th Baltic Sea Hydrographic Commission Conference and welcomed the delegates, observers and IHO Director *Mr. Abri Kampfer*. The Chair described the technical details of the video conference and presented the programme.

The Chair informed the delegates, that the Russian Federation sent a letter informing about not taking part in the conference. The Chair passed the Russian Federation's excuses and warm wishes to the participants.

A.2. Welcome from the host country

In the opening speech the chair stressed the importance for BSHC to address the IHO S-100 implementation decade. The benefits could be identified in areas such as route optimization, UKCM for optimized loading, improved safety and eventually support for automated navigation and autonomous surface ships. BSHC has been successful in coordinating and performing hydrographic surveying of the Baltic Sea. Accurate bathymetry data is a precondition for many of the future S-100 services. Therefore, we have a good foundation in this region for establishing the next generation of hydrographic products. It is time to strengthen our efforts on the coming S-100 products. Without losing the continuous focus on hydrographic surveying, this meeting will address how BSHC could take on the task to coordinate S-100 implementation in the Baltic Sea.

At the same time, the IHO Strategic Plan challenges us to work on how hydrographic data can be provided to other stakeholders than the maritime sector. There are goals in the IHO strategic plan addressing these increasing needs for hydrographic data. Following the agenda of this meeting, we will discuss on how the Commission can meet these goals and targets.

A.3. Adoption of the Agenda

Docs: [BSHC26 A3 Agenda](#)

The delegates reviewed the agenda. The Chair proposed to handle:

- Info paper D.9 (DK), *New Chart Production System*, in the end of session B;
- Item D.3 (FI), *the need for regional coordination of S-100 implementation*, after D.1.

DECISION: The agenda was adopted with the proposed minor changes.

A.4. Minutes and actions of the 25th BSHC Conference

Docs:

- [BSHC26 A4.1 BSHC25 Final Minutes](#)
- [BSHC26 A4.2 BSHC25 List of Actions](#)

The minutes from 25th BSHC were approved by correspondence earlier. The BSHC Conference confirmed the approval.

The conference reviewed the status of the Actions of the 25th BSHC Conference as well as additional actions tasked by IHO Council C4 and IRCC13. Following a decision taken at BSHC25, a review of all permanent Actions was conducted (Action 13).

Another final review of the Actions originating from BSHC25 was done during the review of the BSHC26 Draft List of Actions at the end of the Conference (agenda item H).

The Conference agreed upon the following status of the Actions:

No.	Subject	Status
<i>Actions originating from the BSHC25 list of Actions</i>		
1	To check entry in the Yearbook and in C-55 and to report any updates or report no change to the IHO Secretariat. [permanent]	Preference of the Secretariat to keep as permanent Action. Conference decided to add the wording “or report no change to the IHO Secretariat” (see agenda item B.2)
2	To forward the first edition of new INT charts to chair of BSICCWG for evaluation. [permanent]	Ordinary procedure; remove Action
3	WG chairs to forward information for inclusion in the BSHC web site to Sweden. [permanent]	Ordinary procedure; remove Action
4	All WG to include e-mail address of bshc.pro in their correspondence in order to post documents on the web. [permanent]	Ordinary procedure; remove Action
5	To provide INT120 (DE98) equivalent ENC to all MS. [permanent]	Keep as permanent Action
6	All to consider providing input to CBSC or to inform CBSC about ongoing or planned capacity building initiatives. [permanent]	Keep as permanent Action
7	To present a report on annual MSI activities in Baltic Sea Sub Area. [permanent]	Included in national reports; remove Action
8	Provide continuous updates to S-11 Part B for INT Region E through the INTtoGIS tool. Implement the procedure depicted in IHO CL 64/2015 for the review and monitoring of INT charts and define approved ENC Schemes. [permanent]	Keep as permanent Action; add responsibility of BSICCWG representatives
9	All MS to perform resurveys in areas of commercial shipping and	Conference decided to merge 9 and 12 into new permanent Action (see

No.	Subject	Status
	update HELCOM resurvey database. [permanent]	agenda item C.1): Continuously keep HELCOM Re-Survey Plan ¹ updated based on AIS information, and perform surveys in accordance with the Re-Survey Plan.
10	All MS to consider to release bathymetric datasets or subsets into the public domain via IHO DCDB. [permanent]	Keep as permanent Action
11	Sweden to prepare the BSHC website statistics and report regularly at the BSHC Conferences. [permanent]	Included in SE's commitment and standard Conference agenda; remove Action
12	To encourage MS to study and define Cat I & II areas in their waters based on the existing AIS-information on commercial shipping and to utilize risk assessment tools. [permanent]	Merged with 9, see above.
13	All permanent actions points to be evaluated at BSHC26.	Done
14	To invite the Seabed 2030 project representatives to the BSHC26.	Agenda item D.7; done
15	To inform BSHC MS when paper charts reflect the agreed delimitation (EEZ) between Denmark and Poland.	Done
16	To organise PSI meeting including BSHC MS, France and the Netherlands representatives.	Done
17	To nominate a candidate for the MWG Chair.	Done
18	To organise election by correspondence or VTC for the position of the MWG Chair.	Done
19	To present the HELCOM Re-survey Scheme Update and the Assessment Report to the HELCOM Maritime 20.	Done
20	Russian Federation make effort to provide bathymetric data to BSBD portal.	Pending, but Conference agreed to remove from List of Actions
21	Russian Federation is invited to distribute good resolution (large scale – 1:50000) coastline to Sweden in order to enhance presentation in the BSBD portal and contact with SE regarding procedure.	Pending, but Conference agreed to remove from List of Actions
22	BSHC MS to liaise with their national UN-GGIM representatives when dealing with MSDI and report back to BSHC26.	Rephrased: BSNSMSDIWG Chair to investigate with MS about their liaison with their respective national UN-GGIM representative, and report back to BSHC27. Responsible: BSNSMSDIWG Chair; due BSHC27
23	To inform about the NHC strategic work.	Agenda item D.1; done
24	To have an agenda item at the BSHC26 about the need for regional coordination of S-100 implementation.	Agenda item D.3; done
25	To inform BSHC MS when the amendments to the TSS “Slupska Bank”	Done

¹ The recently revised Baltic Sea Action Plan refers to the term “Baltic Sea Hydrographic Commission (BSHC)-HELCOM Revised Baltic Sea Harmonized Hydrographic Re-Survey Scheme”. For the sake of brevity, internally BSHC has also been using variants of the terms “Baltic Sea Re-Survey Scheme”, “Baltic Sea Re-Survey Plan” or “HELCOM Re-Survey Plan”, interchangeably.

No.	Subject	Status
	come into force.	
26	To prepare a proposal of an amendment to the BSHC Statues regarding the combination of the position of the BSHC Chair and the role of BSHC host.	Agenda item E.1; done
<i>Actions originating from decisions/recommendations made outside BSHC</i>		
27	C4/39: To experiment the implementation of the Strategic Plan and consider, following gap analysis if appropriate, whether our organization and work programmes are fit for purpose.	Agenda item D.1; done; will be taken care of by BSHC strategic correspondence group
28	IRCC13/Action 6: RHCs and WGs to include the measurement of the SPI attributed by IRCC in their annual Work Plans. [permanent]	Awaiting C5 decision
29	IRCC13/Recommendation 7: To consider extend the role of Charting Regional Coordinators for the implementation of the S-100 Implementation Roadmap	Done, replaced by BSICCWG related actions decided under agenda item D.3
30	IRCC13/Recommendation 9: To coordinate the efforts on the implementation of S-100 and promote the cooperation and exchange of experiences.	Discussed as part of D.3. Can be considered done
31	IRCC13/Recommendation 14: To encourage all Member States to actively contribute with new data to GEBCO and to discuss how MS can share existing data	Agenda item D.7; coordinated within BSBDWG. Can be considered done. ²

Permanent and pending Actions were moved to the BSHC26 List of Actions.

B. IHO work program 1 – Corporate Affairs

B.1. Information on Council issues of the IHO

Useful reference doc: [Status of List of Decisions and Actions from C-4](#)

Sweden is Council member selected by the BSHC for three years since C4 (2020) until C6 (2022).

Sweden (*Mr. Magnus Wallhagen*) informed about the 4th Council meeting C4, held as a brief VTC meeting in conjunction with the 2nd Assembly meeting, on 19 November 2020. The meeting outcome included:

- *Dr. Geneviève Bécharde* (Canada) was elected as new chair of the Council, *Mr. Thai Low Ying-Huang* (Singapore) as new vice chair.
- The definition of “hydrographic interest” is still a question for debate, where some IHO Member States argue that tonnage alone is not an ideal measure. The Council invited interested parties (including Argentina, Brazil, India, and Uruguay) to propose a revised definition to the Council before the 3rd Assembly meeting.
- The Council will maintain and update the S-100 Implementation Roadmap continually. Version 1.0 has been prepared by the committees and the Secretariat. The Roadmap will include three annexes, one per work programme, to be approved at C5.

² BSBDWG ToR will be adjusted to include this, see Action 7 under C.3

- HSSC was tasked to develop guidance for parallel production of S-57 and S-101.
- The Secretary-General was tasked to liaise with IMO and other international organisations on the implementation of S-100.
- The Council agreed upon the allocation of Strategic Performance Indicators relating to the goals set in the Revised Strategic Plan. The work programmes were tasked to develop adequate measures for these Strategic Performance Indicators.
- The 5th Council meeting C5 will be held as a VTC in October 2021. Sweden informed the meeting about the proposed agenda. For the HSSC work program, the focus will be on S-100 implementation. For the IRCC work program, the WEND-100 Principles will be the main topic.

In his capacity as HSSC Chair, the Chair furthermore informed the Conference about some of the Council's specific tasks for HSSC, and the work that is on-going before C5. These include S-100 implementation priorities and prioritized product specifications, the proposed implementation timeline, and a synoptic diagram on options for parallel production of S-101 and S-57. Regarding parallel production, the proposed options are, in order of preference:

- Database upgrade for complete parallel production of S-101 and S-57
- S-101 production, followed by conversion to S-57 done by RENC
- Continued S-57 production, followed by conversion to S-101 done by RENC

The most recent version of the timeline can be found in HSSC's report to the Council. HSSC is also working with governance documents regarding possible technical solutions for the shift to S-101.

IHO director Abri Kampfer expresses the IHO's willingness to support the community with capacity building efforts.

The Commission took note of the report.

B.2. Information about the activities of the IHO

Docs: [BSHC26_B2_IHO](#)

IHO Director *Mr. Abri Kampfer* presented the report of the IHO, with emphasis on:

- New members from Ghana, Samoa, Lebanon and Kenya, increasing the number of IHO member states to now 95. The suspension of the Republic of Congo has recently ended and the country is now a full member again. The IHO Secretariat offered Lithuania assistance with the IHO application process, at Lithuania's convenience.
- The report from the 2nd Assembly A2 and 4th Council C4, which agreed upon the approval of the Strategic Plan, the Work Programme and the Budget of the organisation for the next three-year period (see also agenda item B.1).
- Following A2, all regional hydrographic commissions are recommended to examine, and adapt to, IHO Resolution 2/1997 as amended by A2. With regard to BSHC, the Chair explained that this was already done and is part of the revised BSHC statutes (see agenda item E.1).
- The revised IHO Strategic Plan, which focuses on three goals, supporting standards, data and knowledge.

- Yearbook P-5 and Status report C-55 are regularly updated, but the secretariat stressed the importance of keeping these databases as updated as possible. The secretariat recommends updates continuously, or at least yearly, at any time of the year. Reporting no change is preferred to no update at all.
- The World Hydrography Day, *100 years of international cooperation*, was actively supported with contributions from 15 MS. Outreach through web and social media channels has been increasing.
- BSHC members are encouraged to submit papers for publication in the International Hydrographic Review (IHR). DE strongly supported this invitation and confirmed that the BSHC representative on the IHR Board, *Mr. Patrick Westfeld* (DE), is always looking forward to input for the journal.
- The IHO Centenary Celebrations, IHO-100, included several efforts to remember the achievements of the organisation and its members during the past 100 years. The celebrations and exhibition held in Monaco were supported by a visit of the Italian Navy tall ship *Amerigo Vespucci*.

The Chair thanked the IHO Director and confirmed that BSHC took note of the report.

ACTION 1: All MS to check entry in the Yearbook P-5 and in C-55 and to report any updates or report no change to the IHO Secretariat (continuously, permanent).

ACTION 2: All MS are encouraged to submit papers to IHR, and BSHC IHR representative to report back to BSHC (permanent), and DE to report back about published articles from BSHC (BSHC27).

B.3. National reports

B.3.1 National report of Denmark

Docs: [BSHC26_B3.1_National_Report_Denmark](#)

Denmark (*Mrs. Elizabeth Hagemann*) presented the highlights of the national report of Denmark, with emphasis on:

- The Danish HO was re-organised in order to harmonise production in waters around Denmark and Greenland, which are now handled by one common organisation. The work related to waters around the Faroe Islands is gradually being taken over by the Faroese Government.
- The HO now consists of two major departments. One department is responsible for the production, updating, policy and business development. The other department is responsible for the technical systems, data management, processes and quality control. The surveying field work is still carried out by the Royal Danish Navy.
- New 10 years strategy for the entire Danish Geodata Agency, with overarching goals also for the HO, focusing at its role as a data provider beyond the traditional purpose of “safe navigation”, as well as its digital transformation. The HO’s strategic goals are well-aligned with IHO’s strategic goals.

SE asked about DGA’s role as national coordinator of marine data. DK replied that their mandate is still somewhat unclear.

The Chair thanked Denmark for the report and the Commission took note of the report.

Information paper: [D9 New Chart Production System](#)

Denmark (*Mrs. Elizabeth Hagemann*) presented the work with implementing a new Chart Production System at the Danish Geodata Agency (DGA).

The procurement was started at the same time as DGA's re-location, which explains why the process took a long time. DGA has now implemented an ESRI based system for their entire production. The system has been operational since summer 2021. The system is data centric and covers all production needs for both Danish and Greenlandic waters. The system efficiency, especially regarding the workflows, can still be improved. DGA plans to produce their data in a base scale of 1:22 000. The same scale is used by other countries for approach ENC's, and was agreed upon for the Baltic Sea following a task from BSHC22. Furthermore, DK plans a strict ENC gridding scheme, no longer related to paper charts.

The cost of the project was about 48 MDKK, plus 26 MDKK for internal resources.

DGA was very open about their lessons learned and their internal challenges in the project. The new way of thinking, from product based to data based, is a challenge for the existing work force.

The Chair thanked Denmark for the interesting presentation and insight into the challenges related to such major system changes. The proposed points for discussion could preferably be handled in BSICCWG.

B.3.2 National report of Estonia

Docs: [BSHC26 B3.2 National Report Estonia](#)

Estonia (*Mr. Olavi Heinlo*) presented the highlights of the national report of Estonia, with emphasis on:

- A reorganisation as per 1 January 2021, which merged the previous maritime, aviation and road administrations into a new national Transport Administration (*Transpordiamet*).
- As part of the reorganisation, also the internal organisation was changed. From 1 July, the former HO department and its duties have been scattered across several divisions. Most hydrographic knowledge is now organised under the Mobility Planning Division.
- National Hydrographer is *Mr. Olavi Heinlo*, since 1 July 2021.
- The transition to BSCD2000 and to scale 1 : 22 000 for approach ENC's is on-going. Berthing and most harbour ENC cells, as well as almost all harbour paper charts, are published in BSCD2000. Next, approach ENC's and charts will be transformed.
- Bar sweep equipment will be installed on survey vessel EVA-320.

The Chair thanked Estonia for the report and the Commission took note of the report.

B.3.3 National report of Finland

Docs: [BSHC26 B3.3 National Report Finland](#)

Finland (*Mr. Rainer Mustaniemi*) presented the highlights of the national report of Finland with emphasis on:

- No overall reorganisation since last year from HO perspective. New head of the Hydrography and Fairways department is *Mr. Jouni Lappalainen*. Most personnel is working in three production teams, with support by two systems and service teams.
- Procured surveys conducted in shallow, near-shore areas of the Gulf of Finland, using a combination of LiDAR and multibeam.
- A new Nautical Chart Production System (AHTI) has been taken in operational use at the beginning of June 2021 with the publication of some new editions of ENCs and corresponding printed charts.
- The Finnish HO has started to process additional, one-meter resolution depth contours and respective depth areas for approach and harbour ENCs. This depth information enriching is mostly applied along the important fairways.
- On-going work with chart production system and the transition to BSCD2000/N2000

The Chair thanked Finland for the report and the Commission took note of the report.

B.3.4 National report of Germany

Docs: [BSHC26 B3.4 National Report Germany](#)

Germany (*Mr. Thomas Dehling*) presented the highlights of the national report of Germany, with emphasis on:

- New vessel *RV Atair* commissioned September 2020 for survey, wreck search and research. The vessel was designed for work in Baltic Sea, North Sea and North Atlantic, and cost approx. 115 MEUR.
- Decision taken to replace the two vessels *Deneb* and *Wega*, which both are around 30 years old, within about 5 years. The replacement vessels are planned to be larger than the current ones, but not as large as *RV Atair*.

Sweden asked about what the crowd-sourced bathymetry data mentioned in the written report is used for. DE answered that CSBD will only be used for planning purposes, not for any navigational products.

The Chair, on behalf of the Commission, congratulated Germany to the new vessel and thanked for the report. The Commission took note of the report.

B.3.5 National report of Latvia

Docs: [BSHC26 B3.5 National Report Latvia](#)

Latvia (*Mr. Bruno Špēls*) presented the highlights of the national report of Latvia, with emphasis on:

- After a minor structural change, the Maritime Administration of Latvia has since 1 December 2020 been a state limited liability company under the supervision of the Ministry of Transport. The hydrographic service consists of three departments, dealing with hydrography, cartography and MSI/AtoN, respectively.
 - CAT I surveys finished, CAT II are planned to be finished 2023
 - No changes to survey fleet, consisting of catamaran vessel *Kristians Dals* and two smaller survey boats.
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- The transition to BSCD2000 has started.

The Chair thanked Latvia for the report and the Commission took note of the report.

B.3.6 National report of Lithuania

Docs: [BSHC26_B3.6_National_Report_Lithuania](#)

Lithuania (*Mr. Mindaugas Zakarauskas*) presented the highlights of the national report of Lithuania with emphasis on:

- The Hydrographic Division under the Maritime Department of the Lithuanian Transport Safety Administration is responsible for hydrographic activities in Lithuania.
- Hydrographic surveys are carried out following the HELCOM Re-Survey Plan CAT I and II.
- Lithuanian waters are currently covered by six ENC's and five paper charts.

The Chair raised the question if there were any news regarding a possible IHO membership for Lithuania. LT answered that there is no progress to be mentioned. The Chair stressed that BSHC and IHO are ready to support the HO, if help is needed.

The Chair thanked Lithuania for the report and the Commission took note of the report.

B.3.7 National report of Poland

Docs: [BSHC26_B3.7_National_Report_Poland](#)

Poland (*Mr. Dariusz Kolator*) presented the highlights of the national report of Poland, with emphasis on:

- Surveying of CAT I areas has been finished for some time. Currently, the focus is on surveying CAT II and CAT III areas.
- Polish waters are completely covered by 64 ENC's, which are kept up-to-date on a weekly basis.
- Several updated paper charts have been published since the previous BSHC conference.
- Poland is about to start the implementation of BSCD2000, from October 2021 and onwards. The transition to BSCD2000 is planned to be completed by 2023.
- The implementation of the updated marine spatial plan for Polish waters also leads to a need of refining and updating the HELCOM Re-survey Plan.
- Gravimetry measurements have been conducted in Polish waters, contributing to the common BSHC efforts towards a better regional geoid model.
- Poland participated in the IHO-100 celebrations with an exhibition at the Gdansk Naval Museum.

The Chair asked PL and the MWG chair whether the new Polish marine spatial plan has been discussed in MWG and whether it has had an influence on the Polish parts of the HELCOM plan. PL answered that some changes will have to be made.

The Chair thanked Poland for the report and the Commission took note of the report.

B.3.8 National report of the Russian Federation

The Chair informed that the Russian Federation did not provide a national report.

B.3.9 National report of Sweden

Docs: [BSHC26 B3.9 National Report Sweden](#)

Sweden (*Mrs. Annika Kindeberg*) presented the highlights of the national report of Sweden, with emphasis on:

- No reorganisation, but *Magnus Wallhagen* is acting as deputy hydrographer, with additional international coordination duties. Two more personnel changes at management level in the HO.
- CAT I and II will be finalized next year. The HO has therefore been working with shifting focus towards shallow waters and CAT III. This necessitates some changes in the survey fleet from 2022, when the currently largest Swedish survey vessel, *Baltica*, will no longer be used for hydrographic surveying. The vessel will be replaced with a much smaller unit more suited for shallow water work.
- Sales record for leisure craft charts broken 2021 due to domestic tourism because of the pandemic.
- Tests of autonomous survey vessel (ASV) on-going.

Germany asked about the possibility to exchange knowledge about ASV experiments. The Chair proposed that Sweden arranges an online workshop for this purpose.

ACTION 3: All MS to express their possibility to contribute to ASV related knowledge exchange to MWG Chair, and Sweden in cooperation with MWG Chair to arrange a workshop.

The Chair thanked Sweden for the report and the Commission took note of the report.

B.4. IHO-EU Network Report

Docs: [BSHC26 B4 IHO-EU Network SE](#)

Sweden (*Mrs. Annika Kindeberg*), as BSHC's representative, presented the highlights of the work done in the IHO-EU network (IENWG), with focus on:

- BSHC meeting on PSI directive was held in November 2020, discussing e.g. the question of high value datasets.
- VTC meeting in December 2020, focusing on high value datasets and the Horizon 2020 Green Deal Call call for proposals within the "Digital Twin of the Ocean".
- A network meeting is planned 8-9 December 2021, as a VTC or on-site in Brest, FR. All MS are welcome to participate.

The Chair thanked Sweden for the report and the Commission took note of the report.

The Chair asked if any MS have specific news on the open data directive. DK answered that they are also waiting for more clarity, as the question of high value dataset could potentially be disruptive for the HOs. DE answered that nautical products probably will not fall under the high value datasets in Germany. FI answered that at the political level in Finland there seems to be an understanding of the differences between nautical products and the underlying data.

DK stressed the importance of having this collaboration group, to keep track on important EU developments and discuss related issues in the future. The Chair also mentioned public consultations as an influencing tool.

ACTION 4: SE as BSHC representative to distribute information about the up-coming IHO-EU network meeting to all MS.

C. IHO work program 2 – Hydrographic Services and Standards

C.1. Report of the Re-Survey Monitoring Working Group (MWG)

Docs: [BSHC26_C1_FI](#)

The MWG Chair (*Mrs. Maarit Mikkelsen*) presented the MWG report and gave an overview of the re-survey status. The WG Chair focused on:

- A MWG meeting has been held in April 2021.
- *Mr. Seppo Mäkinen* has been acting as WG secretary.
- The Baltic Sea Action Plan (BSAP) will be revised at the upcoming HELCOM Ministerial Meeting (20 October 2021). The revised BSHC-HELCOM Harmonized Re-Survey Scheme now also includes HELCOM CAT III areas with a set timetable, and is planned to be a part of the revised HELCOM BSAP 2021. In the revised BSAP two activities are proposed, which relate to the HELCOM Re-Survey Plan:
 - **SN01/SE03:** *Ensure the completion of the re-surveys for near shore areas and other areas used typically for safe boating, environmental protection, GIS data purposes and oil recovery contingency (also called CAT III areas), by the time specified in the revised BSHC HELCOM Re-Survey Scheme.*
 - **SE02:** *Take actions to ensure the completion of the re-surveys for Cat. I and II areas used by navigation by 2030 at the latest.*
- Statistics about re-survey status (see written report).
- Future work according to the Terms of Reference and Work Program, where the Chair particularly highlighted the importance of a revision of areas in the Southern Baltic Sea (see also agenda item B.3.7).

The BSHC took note of the report and approved the following action, re-phrased from two earlier Actions related to the MWG work:

ACTION 5: Continuously keep HELCOM Re-Survey Plan updated and perform surveys in accordance with the Re-Survey Plan (permanent).

Sweden informed the Conference about an up-coming workshop regarding the revised S-44 standard, scheduled for 5 October 2021, which is an initiative by Germany and Sweden.

C.2. Report of the Chart Datum Working Group (CDWG)

Docs: [BSHC26_C2_SE](#)

The CDWG Chair (*Mr. Thomas Hammarklint*) presented the report, summarizing:

- the activities of the WG, including a VTC meeting in September 2021;
- the implementation of the Baltic Sea Chart Datum (BSCD2000) in the different MS; and
- the continuation of gravity measurements and geoid computations within the FAMOS Finalisation project initiative.

The next CDWG meeting is planned in Gothenburg in April 2022.

An article about BSCD2000 was published in *International Hydrographic Review*³ and the work has been presented at several conferences.

Most BSHC member states are now in varying phases of BSCD2000 implementation. The BSCD2000 has also been registered in the IHO Geospatial Information Registry (as chart datum 44), and the WG chair showed an example of how information about the new chart datum can be conveyed as a Notice to Mariners.

The CDWG has active participants from all MS as well as a large number of observers and experts.

The Chair thanked the CDWG Chair for the presentation. The Commission took note of the report and continues to support gravity measurements.

The Conference was furthermore requested to:

- endorse CDWG TORs 2021-2022 (Annex 1 to the report)
- endorse CDWG Work Programme 2021-2022 (Annex 2 to the report)

Decision: BSHC endorsed the TOR's and work program as proposed from the WG. The Commission suggests for the future to update ToR and WP only when there is a need for changes.

Finland commented on the difficulties of conveying chart datum related information in ECDIS. Finland also would welcome further exchange of experiences between MS regarding the chart datum transition. The WG chair commented that they are well aware of the ECDIS related difficulties and that they are currently discussing how to deal with this.

ACTION 6: CDWG to contact ENCWG representatives in order to address ECDIS issues related to chart datum presentation.

The Chair asked Denmark about the progress of BSCD2000 implementation. DK answered that they will follow Sweden's transition in the bordering waters.

C.3. Report of the Baltic Sea Bathymetric Database Working Group (BSBDWG)

Docs: [BSHC26_C3_SE](#)

The BSBDWG Chair (*Mr. Hans Öiås*) presented the report. He informed that the BSBDWG has not

³ J. Schwabe, J. Ågren, G. Liebsch, P. Westfeld, T. Hammarklint, J. Mononen and O. B. Andersen (2020). The Baltic Sea Chart Datum 2000 (BSCD2000) – Implementation of a common reference level in the Baltic Sea, *International Hydrographic Review*, 23, pp 63-83.
https://iho.int/uploads/user/pubs/ihreview_P1/IHR_May2020.pdf

had any meeting since last year. The web portal currently has some technical issues with downloading subsets of the data. The BSHC websites have been offline for a period during summer 2021. The number of visitors is slowly increasing, as well as the number of scientific references to the database.

A new bathymetry model (500m and 200m resolution versions) is ready for publication, pending technical improvements of the portal.

The BSBD data is also used as input for EMODnet Bathymetry, where Sweden coordinates the Baltic Sea region. EMODnet Bathymetry portal is planned to be updated 2022, with a data provider deadline around the end of this year.

The Chair thanked the chair of BSBDWG for the presentation. The Commission took note of the report.

Denmark asked about any plans to release a 100-meter model, with the background of the on-going GEBCO Seabed 2030 project (see agenda item D.7). The WG Chair answered that the original purpose of BSBD was to provide a homogeneous model at one resolution only. As long as most areas are not covered by high-resolution data, it is not feasible to go forward with a higher resolution than today, 200 to 500m.

DK proposed to address IRCC13 / Recommendation 14, regarding encouraging MS to actively contribute to GEBCO, by including this in the BSBDWG Terms of Reference. The conference agreed upon the following action:

ACTION 7: To update BSBDWG ToR, in order to include encouraging contributions to GEBCO, and have them approved by BSHC-CL. Responsible: Chair, vice chair, BSBDWG Chair.

C.4. Report of the Baltic Sea North Sea Marine Spatial Data Infrastructure Working Group (BS-NSMSDIWG).

Docs: [BSHC26_C4_DK](#)

The BS-NSMSDIWG Chair (*Mr. Jens Peter Hartmann*) presented the report from the BS-NSMSDIWG. The WG Chair informed about main topics discussed during last meeting of working group (9th online meeting 1-2 September 2021):

- MSP Data ESG
- S-122 (Marine Protected Areas)
- OGC API standards
- Possibilities to collaborate with the Singapore Innovation Tech Lab

The WG will continue with frequent online meetings on specific topics, as a complement to physical meetings. There are plenty of focus topics to discuss in this format.

The EU MSP Technical Expert Group on Data is interested in collaborating with the BS-NSMSDIWG, for instance around the use of S-100 product specifications.

The Danish Geodata Agency has agreed with OGC to participate in an S-122 pilot project, which will focus on the following topics (not a comprehensive list):

- The challenge of relying on external data providers from a MSDI perspective;
 - Collaboration with OGC in order to investigate interoperability between the new OGC API and
-

IHO S-100 standards, where the S-122 specification is a good use case for such investigations. OGC have sent out a Federated MSDI related request for information, which also includes a detailed project description.

The Commission noted the report. The Chair kindly asked the WG Chair to re-send the OGC inquiry with the project description. The Commission encourages MS to consider participation in the S-122 pilot project.

ACTION 8: BS-NSMSDIWG Chair to re-send the OGC questionnaire to all MS, which also includes the S-122 project description, and all MS to consider contributing to, or participating in, the S-122 pilot project.

C.5. Report of the Baltic Sea MSI Working Group (BSMSIWG)

Docs: [BSHC25 C5 BSMSIWG Report](#)

The BSMSIWG Chair (*Mr. Johan von Bültzingslöwen*) presented the report with emphasis on:

- Conducted and planned (virtual) meetings;
- Welcome to new members from Finland, and thanks to the retired WG member from Germany;
- That the Russian Federation is more than welcome to join the WG, but has currently no appointed members;
- The increasing number of Navtex warnings, with over 800 messages in 2020;
- Regarding the validity and expiration date of navigational warnings it is important to communicate with *Sweden Traffic*, the Navarea coordinator for the Baltic Sea sub-area, who operate the transmissions.
- Uneven workload on the Navtex transmitters, especially heavy workload on the *Gislövshammar* transmitter.
- Signal interference between the Baltic Sea (*Gislövshammar*) and the Black Sea (*Varna*). A similar problem with the *Tallinn* transmitter was solved a few years ago by changing transmission times. This time the issue is more difficult to solve.
- *Iridium* is now a recognized satellite system and Navarea coordinators shall use all recognized systems. This could potentially lead to increasing costs for IMO member states, due to the GMDSS approval of additional satellite systems providing MSI. This is an important issue to resolve.
- Progress in the S-124 Project Team: On-going development of S-124 (Navigational Warnings) specification, as well as categorization work done to increase the usability of S-124. Unsolved issues still include multi language support and secure communication.

The WG Chair informed about a new routine established regarding potentially obsolete messages without a preset end date. The new routine was put into force because of the extremely high load on the *Gislövshammar* transmitter, after a dialog with relevant stakeholders. The routine is as follows:

Sweden Traffic will inquire by e-mail about the continued validity of warnings every four weeks. If no response is received, the warning will be cancelled after another two weeks (i.e. in total six weeks from inquiry). If a response is received, the warning can be prolonged with another four weeks, after which a new enquiry will be sent out.

The Chair thanked the BSMSIWG Chair for the presentation and the Commission took note of the Report. MS were encouraged to follow the discussions regarding cost for promulgation of MSI.

The chair of BSMSIWG asked for assistance from the BSHC in reaching out to the Russian Federation to ask for contact details to their National MSI coordinator.

ACTION 9: BSMSIWG Chair to follow-up on the new routine regarding obsolete NAVAREA warnings at next BSMSIWG meeting, and report back to BSHC27.

D. IHO work program 3 – Inter Regional Coordination and Support

D.1.1 Information about the NHC strategic work

Docs: [BSHC26_D1_DK](#)

Denmark informed BSHC about the strategic work in the Nordic Hydrographic Commission. Based on questionnaires, NHC have analysed the situation of the Nordic countries' HOs regarding hydrographic data ownership, distribution and use. Their report gave a solid insight in the common challenges faced in the larger region.

The Commission noted the report, and welcomed it as input to BSHC's own strategic work.

D.1.2 BSHC response on the IHO Strategic Plan 2021

Docs: [BSHC26_D1.2_SE](#)

The Chair presented a paper submitted by Sweden as BSHC's representative at the Council and BSHC Chair. Council C4 has tasked all RHCs to analyse their work with regard to the revised IHO strategic plan. Even if BSHC's on-going work more or less supports all three IHO goals, with the current shift to S-100, as well as increasing interest in maritime geodata from other stakeholders, a re-evaluation of BSHC's own strategic work is considered very relevant.

Sweden therefore proposed to establish a correspondence group to draft a strategic plan for BSHC. A draft proposal, including considerations of the form of such a document, could be delivered to BSHC27.

Sweden asked MS for interest in taking on the chairing roll in such a correspondence group, and offered to chair the group, if preferred by the BSHC.

The Commission was asked to:

- a. Note the paper
- b. Establish a correspondence group to draft a strategic plan for BSHC, using the IHO Strategic Plan as a foundation.
- c. Take any further action as deemed appropriate.

Germany strongly supported the proposal, in order to analyse what the special needs for the region are with regard to achieving the IHO strategic goals.

Denmark proposed to task the strategic correspondence group also with looking over the different WG's ToR. The Chair proposed a two-step approach, where this could be looked at after the strategy is approved. Germany suggested to ask the WGs for their input in the correspondence group work.

Finland asked about what specific goals that are already pointed out now, e.g. S-100 implementation, or if the entire Strategic Plan should be addressed. The Chair answered that clarity regarding S-100 implementation regionally is very relevant, but that the strategic correspondence group should base its work on the entire IHO Strategic Plan, where S-100 implementation of course is a major part.

IHO Council Chair *Mrs. Geneviève Béchard* asked Denmark about their analysis of the different user groups' needs, and the BSHC how the strategic work could take external stakeholders' needs into consideration. The Chair answered that this indeed is a very relevant question, with no easy answer, and there is a need to reach out to end users in order to better understand their needs.

DECISION: The BSHC 26th Conference decided to establish a correspondence group to draft a strategic plan for BSHC, using the IHO Strategic Plan as a foundation. Sweden offered to chair the group.

ACTION 10: Sweden and Finland to draft Terms of Reference for strategy correspondence group and invite all MS to nominate national representatives (deadline 31 October)

Denmark offered help in the drafting of the ToR.

ACTION 11: Denmark to follow up on the strategic work in NHC and report back at BSHC27.

D.2. Report of BSHC representative to WENDWG

Docs: [BSHC26_D2_FI](#)

The BSHC representative in the WENDWG (*Mr. Jarmo Mäkinen*) presented the report and highlighted the outcome of the 11th WENDWG VTC meeting 17-18 February 2021, focusing on:

- The development and on-going approval process of the WEND-100 Principles, which are proposed to become a new IHO Resolution;
- Drafting of S-101 ENC Scheming Guidelines, with the possible recommendation to use grid-based schemes;
- Drafting of S-1xx Implementation Guidelines for additional products beyond S-101 (S-102, S-104, S-111, S-128 and S-129);
- Amending the Roadmap for the S-100 Implementation Decade, in order to include the mentioned documents as an Annex 3 to the document.

In conclusion, *Mr. Jarmo Mäkinen* described future plans and challenges for WENDWG.

The Chair thanked the WENDWG representative for the presentation and the Commission took note of the report.

The Chair raised the question of S-101 scheming for the Baltic Sea, and whether this could be tasked to BSICCWG. The BSICCWG Chair answered that the WG could look at the coordination aspects of S-101 ENC scheming.

ACTION 12: To task BSICCWG to coordinate the work with an S-101 scheme for the Baltic Sea.

D.3. The need for regional coordination of S-100 implementation

Time wise, agenda item D.3 was dealt with after D.1 and before D.2.

Docs: [BSHC26_D3_FI](#)

Finland presented a paper highlighting the need for S-100 implementation coordination at national, regional and global level. Finland has already established coordination between national data providers and authorities regarding S-100 governance and data production. Finland proposes that the regional coordination level could very well take place within the BSHC.

The regional coordination work could in practice happen within the existing WGs, e.g. BSICCWG and BSMSIWG.

Denmark agreed with Finland that there is a need for coordination, at different levels: On the level of specific S-1xx products, as well as an overarching level regarding the entire S-100 framework.

Mr Thomas Dehling (Germany), also in his capacity as the IRCC Chair, highlighted the strong history of coordination within BSHC, and the fact that the Baltic Sea is very suitable as an S-100 testbed. BSHC should make use of the existing WGs to identify the most relevant aspects for coordination.

The BSICCWG Chair *Mr Jarmo Mäkinen* confirmed that the issue already has been touched upon in recent WG meetings.

Denmark highlighted the need of adjusting the BSICCWG ToR, in case the coordination responsibility should be placed in this WG.

DECISION: The Conference decided that BSICCWG ToR should be updated, to include S-100 coordination.

The Chair suggested that the newly established strategic correspondence group, with consultation of the BSICCWG Chair, also could get the task to look further into how the Commission should organize regional S-100 coordination. Regarding some specific product specifications, BSICCWG, BSMSIWG and CDWG could be tasked with coordinating S-101, S-102, S-124, S-104 and S-111.

ACTION 13: To task BSMSIWG to work specifically with S-124 implementation coordination.

ACTION 14: To task CDWG to work specifically with S-104 and S-111 implementation coordination.

ACTION 15: To task BSICCWG to work specifically with S-101 and S-102 coordination.

ACTION 16: To suggest updates to BSICCWG ToR, in order for the WG to include overarching S-100 coordination for the Baltic Sea. Responsible: Strategic Correspondence Group.

The Commission further discussed regional knowledge exchange regarding S-100 implementation and encourages all MS to actively participate e.g. in training offered by the RENCs. MS were also encouraged to arrange, and participate in, collaborative projects regarding S-100 implementation.

D.4. Report of Baltic Sea INT Chart Coordination Working Group (BSICCWG).

Docs: [BSHC26_D4_FI](#)

The BSICCWG Chair (*Mr. Jarmo Mäkinen*) presented the report with emphasis on what was discussed at the 7th BSICCWG meeting, held 19-20 May 2021 as a video conference:

- The Baltic Sea INT chart scheme;
- ENC Gaps and overlaps analysis;
- List of Ports- status in the Baltic Sea;
- Preparations to adopt INTtoGIS III;
- The status of ENC coverage in the Baltic Sea and the MS' ENC schemes;
- The draft of the WEND-100 Principles, the S-100 Roadmap and the schedule for S-101 production;
- The MS' experiences with their respective database management and chart production systems.

The Chair thanked the BSICCWG Chair for the presentation and the Commission took note of the report.

Sweden, Denmark and Germany discussed bilateral meetings on the future of the INT1201 and INT1303 charts.

ACTION 17: DE-SE and DE-DK bilaterally to agree upon timeline for continued publishing of INT1201 and INT1303, respectively. Responsibility: DE

Germany asked about the need for the INT120 chart (overview of the Baltic Sea), as the sales of this paper chart are very low. Germany fears that there is no longer much need for this chart. Denmark answered that they provide an online version of the overview chart, based on Germany's chart. Germany will raise this issue at the BSICCWG.

D.5. IHO Capacity Building Sub-Committee Issues Review (CBSC)

Germany (*Mr. Thomas Dehling*) reported on the CBSC work. The Sub-Committee is now chaired by Norway. The Chair encouraged the importance to actively contribute to the capacity building programme.

The Commission noted the report.

The Council Chair (*Mrs. Geneviève Béchard*) reminded of the IHO project *Empowering Women in Hydrography*⁴ and its up-coming kick-off meeting.

D.6. BSHC Website

Docs: [BSHC26_D6_SE](#)

Website: <http://www.bshc.pro>

Sweden (*Mr. Hans Öiås*) reported on coordination, operation and maintenance of the BSHC website. The website has been running continuously except for an outage due to DNS issues during Summer

⁴ Project website: <https://iho.int/en/basic-cbcs-ewh>

2021. There has been a 40% increase of the number of users since last year, with users from Sweden, China and the United States accounting for about one-third of all visits.

Sweden reminded the MS to send website content update requests to sma@sjofartsverket.se.

Denmark commented that the web site structure makes it hard to navigate for users other than BSHC members. The Chair answered that Sweden is well aware of such problems, but currently lacks resources for a major overhaul of the website where they could be addressed.

D.7. Seabed 2030

Website: https://seabed2030.gebco.net/get_involved/

Prof. Martin Jakobsson, Stockholm University was invited to the Conference to present *the Nippon Foundation-GEBCO Seabed 2030 Project*. He gave an overview of this project, aimed at inspiring the maritime community to collaborate with the goal of completely mapping the world's ocean by 2030 and compile the bathymetric data into a freely available ocean map.

Prof. Jakobsson explained the governance structure of the project, the on-going work with ingesting existing data, identifying any gaps and the ultimate challenge of mapping them. The latter also includes looking at innovative technology, such as autonomous units or crowd-sourcing. Furthermore, he focused on the technical considerations involved as well as the data processing infrastructure needed. According to the way the project measures mapping coverage, only about one-fifth of the world's ocean is currently mapped, most of the area with multibeam technology. *Prof. Jakobsson* also highlighted some of the challenges and possibilities specific for the Baltic Sea.

The project relates very well to several of the UN sustainability goals and climate change related research.

The Chair thanked *Prof. Jakobsson*, on behalf of the Commission, for the inspiring presentation.

D.8. CSBWG Report

Denmark (*Mr. Jens Peter Weiss Hartmann*) informed the conference about the IHO Crowd Sourced Bathymetry (CSB) initiative, focusing on:

- The value of CSB data, with low cost but often uncertain quality, for identifying uncharted features or for planning purposes.
- The IHO CL 11/2019 issued by the WG, which was answered by SE, DK and DE in the Baltic Sea region. The CL was followed-up by IHO CL 21/2020 and IRCC CL 01/2020, asking more specifically on the process of including CSB data in the IHO DCDB. More countries replied from the region.
- The CSBWG11 meeting held 14-16 September 2021

The Commission thanked for, and noted the report.

The Conference was asked to:

- Approve *Mr. Hans Öiås* (Sweden) as the new BSHC CSB Coordinator

DECISION: The Commission approved *Mr. Hans Öiås* (Sweden) as the Commission's CSB coordinator.

The Commission discussed how BSHC MS can contribute to CSB and benefit from CSB data from a national and regional perspective and tasked the MWG to report back at the next Conference:

ACTION 18: BSHC MWG to consider the possible use of CSB data in the Baltic Sea region, and report back (deadline BSHC27)

Denmark reminded the Commission about the possibility to answer questions related to CSB, which were sent out by IHO CL 21/2020.

ACTION 19: All MS to respond to the CSB questionnaire

E. Any other business

E.1. Amended BSHC Statutes

Docs: [BSHC26 E1 SE](#)

At BSHC25, it was proposed to amend the BSHC statutes regarding the combination of the position of the BSHC Chair with the role of hosting the BSHC Conference and the possibility to arrange the BSHC Conference as a VTC. Between BSHC25 and BSHC26, the idea was developed further by correspondence and received support by all MS.

Decision: The Commission [approved](#) the amended statutes.

The Chair suggested that the formal signing ceremony will take place at the next face-to-face BSHC Conference. This fills only a ceremonial purpose. The revised status have obtained legal force already by the decision taken at BSHC26.

F. Election of new Chair and Vice Chair

Decision: The BSHC Conference [elected](#) *Mr. Magnus Wallhagen* (Sweden) unanimously as Chair of the BSHC, and [elected](#) *Mr. Rainer Mustaniemi* (Finland) unanimously as Vice-Chair of the Commission.

G. Place and date of next Conference

According to the agreements regarding combining the position of the Chair and host, Sweden confirmed its willingness to organise the next face-to-face BSHC Conference. *Mr. Magnus Wallhagen* (Sweden) announced that the date of the BSHC27 meeting will be held 20-22 September 2022 in Stockholm.

H. Review of BSHC26 List of Actions

The Conference reviewed the Draft List of Actions of the BSHC 26th Conference.

ACTION: The BSHC26 Chair to circulate the Draft List of Actions and Draft Meeting Minutes for final adjustments and approval.

I. Closing ceremony

The Chair (*Mr. Magnus Wallhagen*) expressed his thanks for delegates for participating in BSHC26 Conference and maintaining the time limits proposed in the agenda. He expressed the expectation, that the next Conference will be arranged in Stockholm face-to-face and hoped that the situation related to Covid 19 would not affect the activities of the hydrographic offices.

The Chair then declared the Conference closed.