

# BSHC23\_C2\_CDWG\_Presentation-SE



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## Objectives

1. Answer to BSHC22, Action #22 and a proposal for a new action
2. Status of CDWG work: Meeting 2018 / Implementation status
3. Member list of CDWG
4. Proposed CDWG TORs 2018-2019
5. Proposed CDWG Work Programme 2018-2019
6. How member states benefits best of CDWG
7. Actions requested from the BSHC23 Conference

# 1. Answer to BSHC22, Action #22 and a proposal for a new action

## Action number 22 stated in Action list of the 22<sup>nd</sup> BSHC Conference:

*To summarize the decisions made in BSHC Conferences regarding the vertical reference level Baltic Sea Chart Datum 2000:*

- how the chart datum name should be shown in paper charts*
- how the chart datum should be shown in [S-57](#) ENC's, attribute VERDAT*
- the abbreviation used for Baltic Sea Chart Datum 2000.*

## A brief summary, since 2015:

Meeting	Summary of CDWG proposals and BSHC decisions
CDWG7 2015	S-57 ENC: VERDAT = 3 Paper charts: Mean Sea Level (Baltic Sea Chart Datum 2000 <sup>national realization name</sup> )
BSHC20 2015	S-57 ENC: VERDAT = 3 Paper charts: Baltic Sea Chart Datum 2000 or Baltic Sea Chart Datum 2000 <sup>(national realization name)</sup>
CDWG8 2016	S-57 ENC: VERDAT = 3 Paper charts: Mean Sea Level (Baltic Sea Chart Datum 2000 <sup>national realization name</sup> ) or Mean Sea Level (Baltic Sea Chart Datum 2000)
BSHC21 2016	No decisions mentioned in the minutes.
CDWG9 2017	Abbreviation of Baltic Sea Chart Datum 2000: BSCD2000
BSHC22 2017	Approved the abbreviation BSCD2000

**A proposal to an answer to the BSHC 23<sup>rd</sup> Conference was presented by the Chairman and formalized at the CDWG10 meeting:**

[S-57](#) ENC's: VERDAT = 3

Paper charts: Mean Sea Level (Baltic Sea Chart Datum 2000<sup>national realization name</sup>) or Mean Sea Level (Baltic Sea Chart Datum 2000)

When sufficient, the following abbreviation of Baltic Sea Chart Datum 2000 should be used: BSCD2000

**Proposal for a new action, from CDWG10 to BSHC23, to be reported at BSHC24:**

Include [BSCD2000](#) in [S-100](#): Proposal should be sent to IHO Registry by SE (SMA)

Justification and description for the proposal needs to be determined:

“The Baltic Sea is an international shallow, non-tidal area in the northern part of Europe with dense traffic. IHO BSHC has approved the name and the adoption of the Baltic Sea Chart Datum 2000. The datum refers to each Baltic country’s realization of the European Vertical Reference System (EVRS) with land-uplift epoch 2000, which is connected to the Normaal Amsterdams Peil (NAP).”

The submitting organization needs to be registered as Submitting Organization.

## 2. Status of CDWG work: Meeting 2018 / Implementation status

Since the BSHC 22<sup>nd</sup> Conference, *Mr Thomas Hammarklint* has acted as a new Chair

The communication within the CDWG has been done by e-mail correspondence and the CDWG10 meeting. The meeting was held on 7-8 April 2018 in Arkö, Sweden. 13 delegates attended the meeting. The meeting were very appreciated by the attendees.

The main objectives of the CDWG 10<sup>th</sup> meeting was to update the TORs, Work programme, [list of actions](#), national implementation status and plans of the Baltic Sea Chart Datum 2000, coordinate our work and propose an answer to the BSHC22, Action #22 etc.

The CDWG work have been presented at the following meetings and conferences in 2018:

BOOS Annual Meeting, 22-23 May 2018, Brussels, Belgium [[Presentation](#)]

TWCWG3, 16-20 April 2018, Vinã del Mar, Chile [[Presentation](#)]

GLOSS Sea Level Workshop, 13-15 March 2018, Moscow, Russia [[Presentation](#)]

FAMOS Odin meeting, 7-9 March 2018, Malmö, Sweden

Skagerrak-meeting DK-NO-SE, 6 February 2018, Norrköping, Sweden

SONEL/TGTT, 29-30 January 2018, Brussels, Belgium

Next meeting (CDWG11) will be held 5-6 February 2019, Ålborg, Denmark

The [CDWG website](#) have been updated with a lot of new information

# Summary of implementation status 2018:

Country	Status	Other remarks
Denmark	Chart datum in practice close to EVRS-based chart datum.	Will follow the Swedish approach and implement BSCD2000 when Sweden do in waters close to Denmark
Estonia	Used in charts and water level information from 2018-01-01. <a href="#">Notices to Mariners 2017-12-01.</a>	Levelling for national height system has been finalized. Data in depth database will be transformed. New charts with the new reference will be produced continuously, the first charts will be produced in 2018
Finland	Ongoing. Earliest in 2019 starting from the north part of the Bay of Bothnia. <a href="#">Notices to Mariners 2018-04-12.</a>	Pre-study done: methods and estimation of resources. The plan is to publish products in around nine adjacent geographical sea areas starting from the northern part of The Bay of Bothnia.
Germany	EVRS realization in use in practice. The vertical chart datum of BSCD2000 is close to the national height system of Germany (DHHN). All published products always refer to this datum.	Almost all vertical positioning based on GNSS and geoid. The database refers to national height system.
Latvia	BAS77 still used. New national height system (EVRS-based) into use in 2015. Further decisions on implementation will be made after clarifying the Baltic Sea geoid.	Differences between BAS77 and Baltic Sea Chart Datum 2000 known and can be accessed by web-application and info in all nautical charts how to transform depths to EVRS.
Lithuania	BHS77 still used. From year 2017 expected to change to LAS07 (EVRS-based).	National height system is LAS07 (EVRS based), into use in 2016.
Poland	Ongoing. Currently - mean sea level. From the beginning of 2020 all depths at nautical charts should be referred to PL-EVRF2007-NH (Amsterdam).	Poland have an legal act about datum, which allows to use both PL-KRON86-NH (Kronstadt 86) and PL-EVRF2007-NH (Amsterdam) at Polish waters until the end of 2019.
Russian Federation	Actions and plans are dependent on the implementation of new state coordinate system.	Decisions of the transition will not be done earlier than 2020. A new State Coordinate System 2011 (GSK-2011) for consumers, navigation, geodesy and cartography implemented 1 January 2017.
Sweden	Ongoing. Many charts already published. Water level information will be related to BSCD2000 in 2019.	Implementation is a part of the "Chart Improvement Project", to be concluded on time at the latest in 2021.

### 3. CDWG Member list

#### Members of CDWG:

Denmark	PhD Joanna Gerlings
Denmark	Mr Philip Sigaard Christiansen
Estonia	Mrs Gabriela Kotsulim
Finland	Mr Jyrki Mononen
Germany	Dr Patrik Westfeld
Latvia	Mr Armands Murans
Lithuania	Mr Mindaugas Zakarauskas
Poland	Cdr Sławomir Lipiński
Poland	Lt Cdr Marcin Banaszak
Russia	Capt S. Travin
Russia	Mr Leonid Shalnov
Russia	Dr Sergey V. Reshetniak
Sweden	Mr Thomas Hammarklint
Sweden	Mr Lars Jakobsson
Sweden	Mr Henrik Tengbert

#### Representative of BOOS:

Sweden            Mr Thomas Hammarklint

#### Observers:

Finland            Mrs Mirjam Bilker-Koivula  
Finland            Katri Leinonen  
Sweden            Dr Jonas Ågren  
Sweden            Dr Per-Anders Olsson  
Sweden            Mr Mikael Stenström  
Norway            Mr Aksel Voldsund  
Germany           Dr Gunter Liebsch



# 4. Proposed CDWG TORs 2018-2019 (changes in red)

BSHC Chart Datum Working Group  
Terms of Reference 2018-2019  
8 February 2018

To be approved by the BSHC 23<sup>rd</sup> Conference, August 2018

The BSHC18 (September 2013) decided to continue CDWG work and wished the harmonized Baltic Sea vertical reference to be implemented.

## The Working Group should

1. To continue implementation of the **Baltic Sea Chart Datum 2000 (EVRS with land-uplift epoch 2000)**.
2. To prepare the road map for transition, including e.g:
  - to establish a network of relevant bodies involved into the transition and efficiently communicate and give guidance within this network
  - to invite relevant bodies to inform the users
  - to review of progress of national plans and actions
  - to propose harmonization actions.
3. To cooperate with relevant bodies on water level related issues e.g:
  - to promote studies on the validation, status and distribution of water level information, and to promote studies on interpolation and prediction of water levels
  - to promote studies on displaying schemes for joint Baltic Sea water level information
  - to promote studies on recommendations to IHO **bodies** how the sea level and its variations should be shown on nautical paper and ENC charts and publications, and conveying water level information to mariners [ref. IHO Technical Resolutions].
4. To further development of a common harmonized height reference, including further development of a common geoid model for the whole Baltic Sea area and supporting geoid and oceanographic studies relevant to these purposes.
5. To cooperate with relevant international bodies, **for example organizations responsible for delivering water level information (e.g. BOOS and NOOS) and geodetic infrastructure (e.g. EUREF and NKG)**.
6. To liaise with relevant IHO bodies **and study relevant IHO resolutions and specifications**.

The Working Group should report to the BSHC Conferences.

# 5. Proposed CDWG Work Programme 2018-2019 (changes in red)

Proposed BSHC Chart Datum Working Group  
Work Programme 2018-2019  
8 February 2018

To be approved by the BSHC 23<sup>rd</sup> Conference, August 2018

Note: This Work Programme includes those Tasks which were identified as the priority issues and which are expected to be fostered during 2018 - 2019 bearing in mind the resources the BSHC members have.

Tasks:

1. Guide the implementation process of vertical reference within the Baltic Sea region.
  - a. To monitor and follow up the status of the relevant actions identified.
  - b. To ensure efficient communication with relevant bodies.
  - c. To propagate and explain the idea of harmonized chart datum.
  - d. To foster national efforts for realization of S-104 in the Baltic Sea.
2. Review of progress of national plans and actions.
3. Propose harmonization actions.
4. Promote studies and further development of a common geoid model and dynamic topography for the whole Baltic Sea, mainly by supporting and collaborating with relevant projects, e.g. organizing ship time for gravity measurements.
5. Promote improvement of precise real-time GNSS navigation for the future.
6. Cooperate with BOOS and other relevant institutes and organizations.
7. Support other IHO working groups and European projects in issues concerning vertical references.

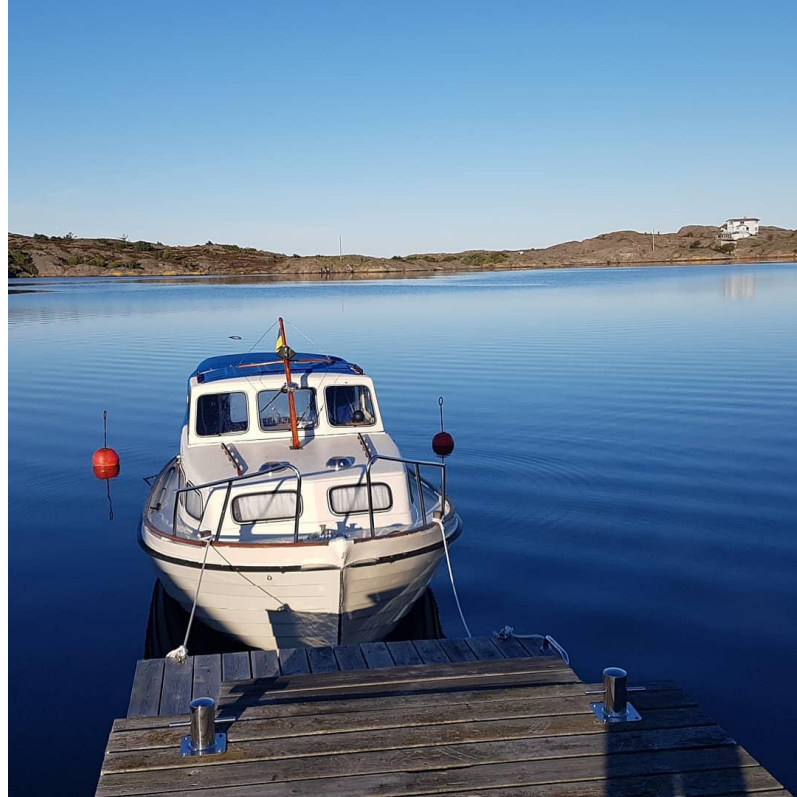
## **6. How member states benefits best of CDWG**

- Sending representatives to meetings
- Answering to questionnaires – helps coordination of implementation
- Fostering national transition to the Baltic Sea Chart Datum 2000
- Supporting complementary gravity surveys in the Baltic Sea – e.g participating FAMOS until 2020
- Supporting common geoid model calculation – e.g. participating FAMOS until 2020

## **7. Actions requested from BSHC 23<sup>rd</sup> Conference**

1. Note this report
2. Support gravity measurements and geoid computation independent of future EU co-financing
3. Endorse the proposed CDWG TORs 2018-2019
4. Endorse the proposed CDWG Work Programme 2018-2019
5. Approve the answer to BSHC22, Action #22
6. Approve the new action: to include BSCD2000 in S-100
7. Give further guidance to CDWG, as seen appropriate
8. Decide on continuation of CDWG work

**Thank you for your attention!**



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