



## Questionnaire to BSHC Member States on the implementation status of Baltic Sea Chart Datum 2000 (BSCD2000), S-104 Water Level and S-111 Surface Currents

Please return to Thomas Hammarklint by email ([thomas.hammarklint@sjofartsverket.se](mailto:thomas.hammarklint@sjofartsverket.se)) at the latest by **15 March 2024**.

|                  |   |
|------------------|---|
| Member state     | Lithuania   |
| Date of reply    | 2024-03-04  |
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### 1. Are all the decisions done to implement the Baltic Sea Chart Datum 2000?

1.1. When the decisions have been done or planned to be done?

Officially LAS-07 has been introduced at 01 Jan 2016

1.2. What are the national decisive organizations?

Decree of director of National Land Service under Ministry of Agriculture of the Republic of Lithuania

### 2. What is the national status of implementation of chart datum?

2.1. What actions have already been done?

All geodetic surveys must be done in new LAS-07 height system, hydrographic data acquisition inland is done in LAS-07, nautical usually in BHS-77 as most of nautical data users are still working in BHS-77. S-101 official charts will be in LAS-07.

2.2. What actions have been planned to be executed and what is the schedule?

Bathymetric data are available in BHS-77 (all survey data) and LAS-07 (reduced amount (sorted data)). Expected that 2026 all data will be available in LAS-07.

2.3 Which ENC Approach have been updated with the new reference datum? If possible, attach a chart datum overview covering Your countries nautical charts, designed graphically or as a table, updated around January, 2023. Also, if possible, include an attribute to each named chart describing the CD difference to BSCD2000 in cm (CD minus BSCD2000). Example attached at the end of the Questionnaire (Annex).

Paper charts has a note on the chart how to calculate depth values from BHS-77 to LAS-07 and the difference is 0.13 m (shallower). ENC has additional text files, where it is stated how to recalculate the requested depth and height values.

2.4 If you implemented the attribute VERDAT in S-57 (ENC), are You using VERDAT=3 (Mean Sea Level)?

ENC cell has object M\_SDAT with attribute VERDAT = 3

### 3. Has Your country established the national realization of EVRS and are the water level stations connected to this new height system (BSCD2000)?



3.1 Which organization/-s is responsible for the water level stations/data in Your country?

All tide gauges are under responsibility of Lithuanian Hydro Meteorological Service.

3.2 Which reference are used today to present water level information? Does Your country planning to present water level information referring to BSCD2000? Doing it already today? Date decided for change the reference to BSCD2000?

All the tide gauge data are acquired and distributed to end users in BHS-77. The tide gauges have been levelled in new LAS-07, and BHS-77 height systems. The difference is known.

3.3 Are there any plans for digital service/-s intended for the users to have the option to choose MSL or BSCD2000 as the reference level for water level information?

All the acquired tide gauge data are acquired and distributed to end users in BHS-77.

3.4 GNSS supported UKC control/confirmation is probably the reality in a few years. We also need reliable water level predictions for carrying out optimal loading and real time water level data to check the GNSS data. Do we need a shared service in the Baltic Sea for water level information (predictions/real-time), which fulfils nautical needs and demands?

Preferable.

3.5 Do we need to work together with the development of the IHO S-104 standard?

Preferable for final data production/ generation.

#### **4. Are the relevant national contacts and interest groups defined for the change of chart datum and water level reference?**

4.1. What are the essential national interest groups in Your country?

For nautical application nautical data end users (scientific), mariners, navy, port authority.

4.2. Are the relevant point of contacts known and contacts been made to them?

Mainly yes.

4.3 Are You planning any information campaign about the change of chart datum and water level reference? If, yes have you published information about this somewhere?

Currently no such plans, identified possible means of information distribution: by Navigational warnings, NtMs, HO portal. Expected that we will need as campaign, when S101 charts will be available for distribution.

#### **5. Have You identified any obstacles or major issues concerning transition to the harmonized vertical reference?**

5.1. What are the major obstacles or issues?



Most users are used to operate in BHS-77, especially port authority pilots and other services. Meanwhile Tide data are only in BHS-77 height system.

5.2. What measures has been planned to avoid them?

Currently as the data are in BHS-77 no need to warn, but as the nautical data will be compiled and distributed in new LAS-07 special notice in data sets and labels on distribution media are planned.

## **6. Connections to neighbouring countries**

6.1. Which are the relevant countries to cooperate?  
Latvian HO, no contacts with Russian HO.

6.2. Are the needed points of contacts already known?  
Yes, point of contacts are known.

6.3. What actions have been agreed with the relevant countries (e.g. synchronising plans and schedules)?  
Oral agreement on exchange relevant data.

**7. Are there any needs for support from BSHC?**  
Yes preferable.

**8. Do you have any other proposals or guidance to the CDWCWG to help and foster the transition process?**  
Currently not.

**9. Are you using GNSS and GNSS augmentation services for referring to your (bathymetric) surveys to the chart datum?**

9.1 What GNSS augmentation service is used for hydrographic surveys? (If there are several augmentation services, list all of them.)  
Inland and near coastal surveys are using LITPOS system.

9.2 To which coordinate system, and vertical reference level/frame the GNSS augmentation service is referred to? (If there are several systems in use, list all of them.)  
The LITPOS system is referred to LAS-07 height reference system.

9.3 Does your HO require, in-house or procured, that Hydrographic survey system shall be prepared to be able to measuring the GNSS-height and refer the depth to the geoid?  
Yes.

9.4 Do you discuss within your HO the need of an altimetric measured Mean Sea Surface (MSS)? (For example, in order to support hydrodynamic models, shipping and / or adjust existing depth data)?  
Do not have such plans yet.

9.5 Has your HO assessed the need for dynamic geodetic reference systems (time-dependent transformation relationship) between primarily



national and global reference frames?  
Do not have such plans yet.

## **10. What is the national status of the implementation of IHO S-104 Water Level and S-111 Surface Currents?**

10.1 What actions have already been done?

Data owners identified. Information on data supply need and requirements regarding hydrography, provided.

10.2 What actions have been planned to be executed and what is the schedule?

No information on this item has been received from the data owners yet.

10.3 Are all the decisions done to implement S-104 and S-111?

No information on this item has been received from the data owners yet.

10.4 When the decisions have been done or planned to be done?

Information regarding the need for such data service has been provided to data owner. No information regarding the service in operation has been received.

10.5 Which organization/-s is responsible for observed and modelled/ forecasted water level (Refer to 3.1) and currents in Your country?

All tide gauges are under responsibility of Lithuanian Hydro Meteorological Service.

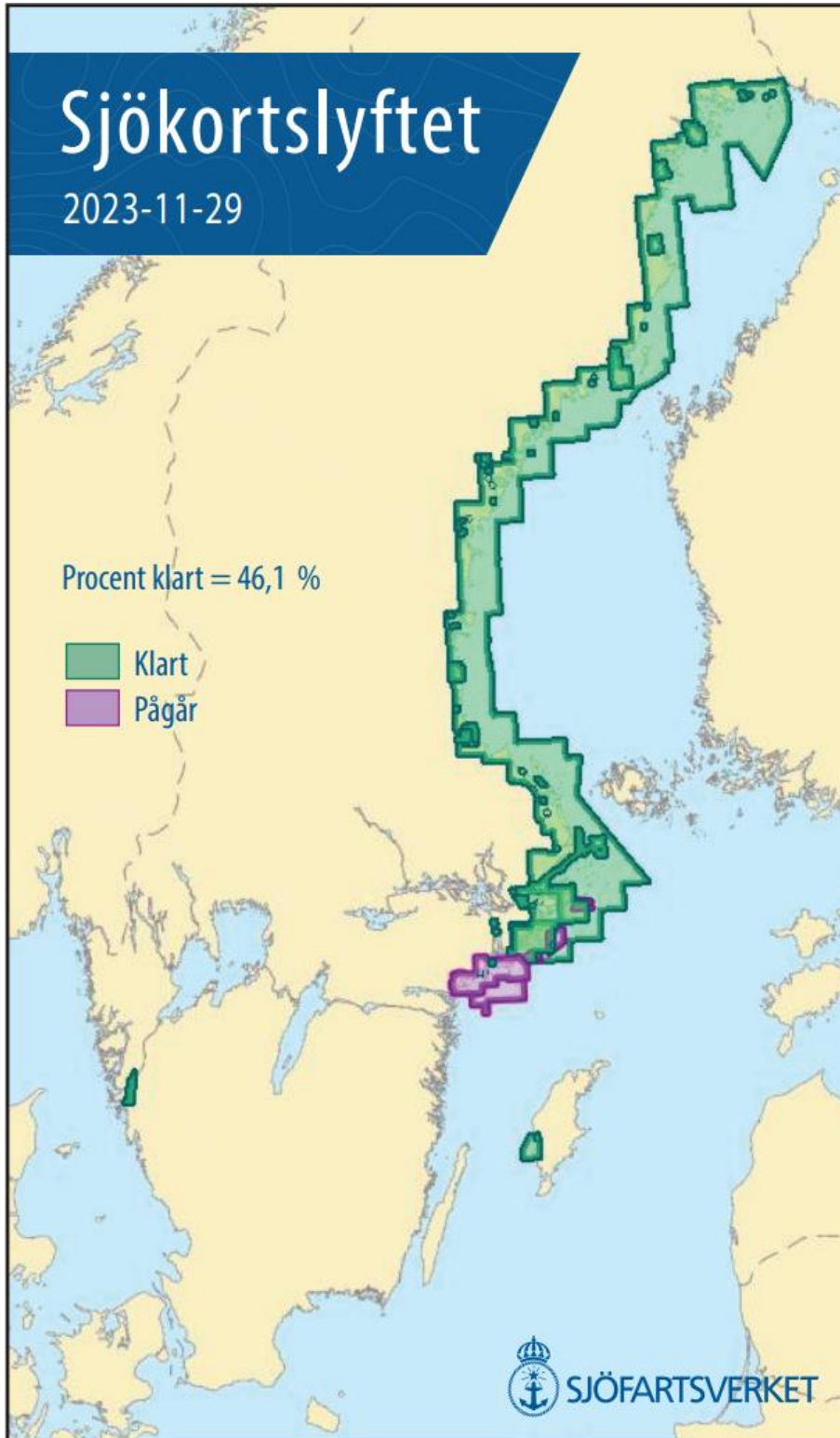
Klaipeda University has a model on the surface currents, and model is in validation. No official service for data distribution set yet.

10.6 How is Your country represented in the IHO Tides, Water Level and Currents Working Group (TWCWG)?

Our country is not a member of IHO yet, so we do not have representatives at indicated WG.



Annex



Example of ENC Approach from Sweden (updated 2023-11-29): Green cells are referring to the new chart datum BSCD2000, purple cells are ongoing adjustments to BSCD2000 and the rest of the cells refer to various Mean Sea Level.