Questionnaire to BSHC Member States on their implementation status of the transition to a Harmonised Vertical Reference, Baltic Sea Chart Datum 2000.

Please return to Thomas Hammarklint by email (thomas.hammarklint@sjofartsverket.se) at the latest by **25 January 2019***.*

Member state	LATVIA
Date of reply	2019-01-24
Point of Contact	Krists Dzenis, MAL, Krists.dzenis@lhd.lv

1. Are all the decisions done to implement the Baltic Sea Chart Datum 2000?

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

All decisions will be made after clarifying the Baltic Sea geoid.

1.2. What are the national decisive organizations?

Latvian Geospatial Information Agency,
Maritime Administration of Latvia,
Ministry of Defence,
Latvian Environment, Geology and Meteorology Centre

What is the national status of implementation of chart datum?

2.1. What actions have already been done?

Decision will be made after clarifying the Baltic Sea geoid.

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

Decision will be made after clarifying the Baltic Sea geoid.

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, 2019. 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).

Cartographic products are produced in BAS-77. Details regarding depth conversion to BSCD2000 are given in chart notes:

Depths and heights: in metres, referred to Mean Sea Level (BHS-77).
For depths in Baltic Sea Chart Datum (BSCD 2000) within territory of Latvia (LHS-2000,5),
values on chart have to be reduced by 16 cm.
Values for reduction are taken from BOOS Sealevel stations 2018 data sheet.

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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?

"Latvian Environment, Geology and Meteorology Centre"
https://www.meteo.lv/en/lapas/about-centre?&id=1473

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?

LAS-2000,5 (EVRF2007 epoch 2000,0). and BAS-77

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?
Information about each water level station zero values are given in both reference systems that are used today.

NS Andrejosta

Darbība uzsākta: 14.01.1930.
Ūdenstilpe: Daugava
Baseins: Daugavas
Koordinātas:
Platums 56°57'39"Z

Garums 24°05'38"A
Stacijas nulles atzīme: -1.26 m LAS-2000,5 (-1.41 m BAS-77)
Attālums no upes grīvas: 13 km

Hidroloģiskie novērojumi:
Automātiskie
Ūdens līmenis

Papildinformācija:
• Hidroloģisko režīmu ietekmē Rīgas HES darbība un Rīgas līcis;
• Novērojumu datus izmanto hidroloģiskā režīma izpētē, hidroloģisko prognožu sastādīšanā.

3.4 GNSS supported UKC control/confirmation is probably the reality in a few years. But 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), that fulfils nautical needs and demands?
Yes, in our opinion such service would be necessary

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

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?
Marine related organizations (ports, etc.)

4.2. Are the relevant point of contacts known and contacts been made to them?
We assume, they are aware of Baltic Sea Chart Datum 2000.

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?
Mariners will be informed via products and publications such as charts and Notices to Mariners.

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?
No reliable geoid model for Baltic see territory of Latvia
Data transformation takes time
Information to the users about the transition to the chart datum Baltic
Sea Chart Datum 2000 (BSCD2000) is a major challenge and creates misunderstandings.

5.2. What measures has been planned to avoid them?
Investigate for best possible geoid models for Baltic see territory of Latvia
To keep end users informed about transition

6. Connections to neighbouring countries

6.1. Which are the relevant countries to cooperate?
Estonia, Lithuania, Sweden.

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

6.3. What actions have been agreed with the relevant countries (e.g. synchronising plans and schedules)?
Not yet.

7. Are there any needs for support from BSHC?
Support not needed yet, only to continue information exchange between members about updates of the implementation.

8. Do you have any other proposals or guidance to the CDWG to help and foster the transition process?
No.

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.)
EGNOS, TRIMBLE VRS

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.)
WGS84 Most surveys are made in UTM34N. We use Mean Sea Level (BHS-77) height reference system now. Any other transformations, if necessary, usually are done during post processing.