Questionnaire to BSHC Member States on their implementation status of the transition to a Harmonised Vertical Reference, Baltic Sea Chart Datum 2000 (BSCD2000).

Member state	Poland
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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?
A written decision was issued by HOPN in July 2021 - Guidelines and timetable for the implementation of PL-EVRF2007-NH (BCD2000).

1.2. What are the national decisive organizations?
- Head Office of Geodesy and Cartography (Główny Urząd Geodezji i Kartografii),
- Hydrographic Office of the Polish Navy (Biuro Hydrograficzne Marynarki Wojennej).

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

2.1. What actions have already been done?
- corrections have been established between the local vertical datum (Amsterdam NN_{55}) and the EVRF for the costal water stations,
- bathymetric measurements collected in the bathymetric database were transferred to the vertical reference system PL-EVFR2007-NH,
- gravimetric measurements in Polish waters were completed,
- information campaign about a new chart datum was carried out in Notice to Mariners (September – November 2021).

2.2. What actions have been planned to be executed and what is the schedule?
- 2021 – 2024 new editions of all INT harbour and approach charts.

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, 2021. 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).
Charts converted in 2021/2022/2023 to PL-EVRF2007-NH (BSCD2000):
2021:
Chart No 41 (ENC PL4MAP41), correction: -6.3 cm,
Chart No 59 (no ENC equivalent), correction: -8.5.

2022:
Chart No 16 (ENC PL5GDYNA), correction: -8.7 cm (harbour band),
Chart No 19 (ENC PL5SWINO), correction: -8.5 cm (harbour band),
Chart no 42 (no ENC equivalent), correction: -6.3,
Chart No 45 (ENC PL4P3030), correction: -6.3 cm,

Chart No 46 (ENC PL4MAP36), correction: -8.5 cm,
Chart No 47 (ENC PL4MAP37), correction: -6.6 cm,
Chart No 48 (ENC PL4MAP38), correction: -1.8 cm,
Chart No 56 (ENC PL4MAP56), correction: -9.6 cm,
Chart No 57 (ENC PL4MAP57), correction: -9.8 cm.

2023:
Chart No 18 (ENC PL5SZCZE), correction: -1.8 cm (harbour band).

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

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?
Institute of Meteorology and Water Management (IMGW).

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?
Readings from the coastal water stations are presented in the local vertical reference system Amsterdam NN_{55}.
No current information about the IMGW plans.

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?
N/N

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?
Online, shared service would be very helpful after BSCD2000 implementation in all Baltic waters and definitely necessary for S-100 products (S-104, S-129).

3.5 Do we need to work together with the development of the IHO S-104 standard?
Exchange the experience would be helpful.

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?
Maritime Offices (Gdynia, Szczecin), Harbour Masters.

4.2 Are the relevant point of contacts known and contacts been made to them?
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?
Information on the new chart datum was published in 2021 in Notice to Mariners issued by HOPN.

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?
Currently, the only issue is the time necessary to prepare a new edition of a nautical chart.

5.2. What measures has been planned to avoid them?
Maintaining the time limits of the approved plan.

6. Connections to neighbouring countries.

6.1. Which are the relevant countries to cooperate?
No cooperation in that matter.

6.2. Are the needed points of contacts already known?
Not required.

6.3. What actions have been agreed with the relevant countries (e.g. synchronising plans and schedules)?
No actions.

7. Are there any needs for support from BSHC?

Not required.

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.).
Examples of GNSS services available on the Polish coast:
- ASG-EUPOS (free of charge GPS RTK),
- GPS RTK (Gulf of Gdańsk - local FM radio),
- SmartNet Poland (GPS RTK),
- TPI Netpro (GPS RTK),
- VRSNet (GPS RTK).

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.)
ETRS-89 (GRS-80h),
PL-EVRF2007-NH.

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?
Under current regulations, it is not required.

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)?
This topic is not discussed.

9.5 Has your HO assessed the need for dynamic geodetic reference systems (time-dependent transformation relationship) between primarily national and global reference frames?
This matter is not considered.

Annex

Currently, PL nautical charts are referred to Amsterdam NN_{55}. New editions of harbour, approach and coastal charts are issued in PL-EVRF2007-NH (BSCD2000) reference system. Pictures below presents the implementation schedule of the new reference system to the nautical charts (approach band only).