

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

Last three questions (9 - 11) concerns GNSS-augmentation/correction services used in member states.

Please return to Mr. Jyrki Mononen by email (jyrki.mononen@liikennevirasto.fi) at the latest by **26 January 2018**.

Member state	FINLAND
Date of reply	29.1.2018
Point of Contact	Jyrki Mononen (jyrki.mononen@fta.fi)

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?

2007 and 2015 decisions for adoption of the new chart datum were made. Implementation project kick-off was held on 2 March 2017.

1.2. What are the national decisive organizations?

- Finnish Transport Agency (FTA) including Hydrographic Office (HO) concerning nautical charts and navigational publications.
- National Land Survey (NLS) concerning the Finnish national height system, which already is N2000 as a realization of EVRS.
- Finnish Meteorological Institute (FMI) concerning water level information on sea areas.
- Finnish Environment Institute (SYKE) concerning water level stations and information in inland waters.

2. What is the national status of implementation?

2.1. When the first BSCD2000 products are planned to be published?

Earliest in 2019 starting from the north part of the Bay of Bothnia. The plan is to publish products in around nine adjacent geographical sea areas starting from the northern part of The Bay of Bothnia. This is due to fact that all charts can't be transformed to BSCD2000 and published at the same time.



2.2. What is the planned time-span of the implementation? When to start and when all the products are published in BSCD2000?

Timespan for the transition period is anticipated to last several years, at this moment the estimation is 5-8 years. The time span depends heavily on the recourses and the decisions how much chart and bathymetric information will be enhanced at the same time.

Data transformation will be started 2018. At this moment exact year when all the products are published in BSCD2000 can't be said, but most probably it will not happen before 2025.

Information for mariners and other users is provided by FTA-web pages:
In Finnish:

<https://www.liikennevirasto.fi/ammattimerenkulku/merikartat/korkeusjarjestelma-n2000>

In Swedish:

<https://www.liikennevirasto.fi/web/sv/yrkessjofart/sjokort/hojdsystemet-n2000>

In English:

<https://www.liikennevirasto.fi/web/en/merchant-shipping/paper-charts/baltic-sea-chart-datum-2000>

3. Are the relevant national contacts and interest groups defined?

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

- Finnish Transport Agency (FTA) including Hydrographic Office (HO), fairways, winter navigation, VTS
- Finnish Meteorological Institute (FMI)
- Finnpilot
- Finnish Port Association
- Major shipping companies
- Finnish National Land Survey (NLS)
- Finnish Environment Institute (SYKE)

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

- FTA: Jyrki Mononen, Janina Tapia Cotrino (the lead of implementation project)
- FMI: contact persons are nominated (first meetings kept)
- Finnpilot: contact persons known (a meeting kept)
- Finnish Port Association: not yet
- NLS: Mirjam Bilker-Koivula
- SYKE: contact person known

3.3. How is the water level information planned to be provided to mariners and other users in BSCD2000?



Finnish Maritime Institute (FMI) is responsible of mareographs on sea areas and will provide the information in N2000, which is Finnish realization of BSCD2000. It has not yet been defined how the water level information will be provided to mariners in BSCD2000, but first meetings has been kept how to solve this matter. Based on the meetings it is clear that FMI needs several months to prepare systems and procedures to provide the data in a feasible way to users.

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

4.1. What are the major obstacles or issues?

- Lack of resources: at the same time renewal of bathymetric data management system and chart production system (essential for the transition)
- Informing and education of the users. If the users don't understand the new reference system then the benefits will not be reached.
- During the transition period the synchronization of chart publishing and providing water level information in both datums has to be done in a way that users are not confused.

4.2. What measures has been planned to avoid them?

- Resources to be planned and work to be prioritized. Relevant concrete milestones and project plan will be done.
- Outsourcing as many tasks as feasible.
- Information plan with relevant stakeholders.
- Starting the implementation in synchronization with systems renewal projects. Basically it means that actual implementation will start after new systems has been taken in to use.

5. Connections to neighbouring countries

5.1. Which are the relevant countries to cooperate?

All the neighbouring countries, Sweden, Estonia and Russian Federation. Especially Sweden and Estonia because both countries are starting the implementation and Sweden has already published charts.

5.2. Are the needed points of contacts already known?

All the relevant contact points are known.

5.3. What actions have been agreed with the relevant countries (e.g. synchronising plans and schedules)?



Finnish Transport Agency
Hydrographic Office
Helsinki, 8 December 2017

Not any specific agreements have done with neighbouring countries. Finland will follow the time schedules agreed within BSHC/CDWG as far as feasible.

In bilateral meeting between Sweden and Finland (October 2014) Sweden reviewed their schedule for transition to RH2000 in Swedish nautical charts.

Meetings has been kept with Sweden and planned to kept with Esonia.

6. Are there any needs for support from BSHC?

All the measures to help member states to communicate and execute the transition in synchronized manner are valuable.

7. Do you have any other proposals or guidance to the CDWG to help and foster the transition process?

All member states to commit to adoption of the Baltic Sea Chart Datum 2000 and inform the implementation status.

Common information and promotion of the Baltic Sea Chart Datum 2000.

Co-operate with FAMOS-project.

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

Not in vertical referencing at this moment, except some specific surveys (Saimaa-canal 2015-16). In horizontal positioning contractors uses commercial services.

9. What GNSS augmentation service is used for hydrographic surveys? (If there are several augmentation services, list all of them.)

E.g. Fugro Marinestar, Trimnet (Geotrim Oy), @Fokus (Indagon Oy)

10. To which coordinate system, and vertical reference level/frame the augmentation service is referred to? (If there are several systems in use, list all of them.)

ITRS, EUREF-FIN (ETRS89 realization in Finland) -> coordinate system ETRS-TM n (n is the central meridian).