

Common reference datum in the Baltic Sea

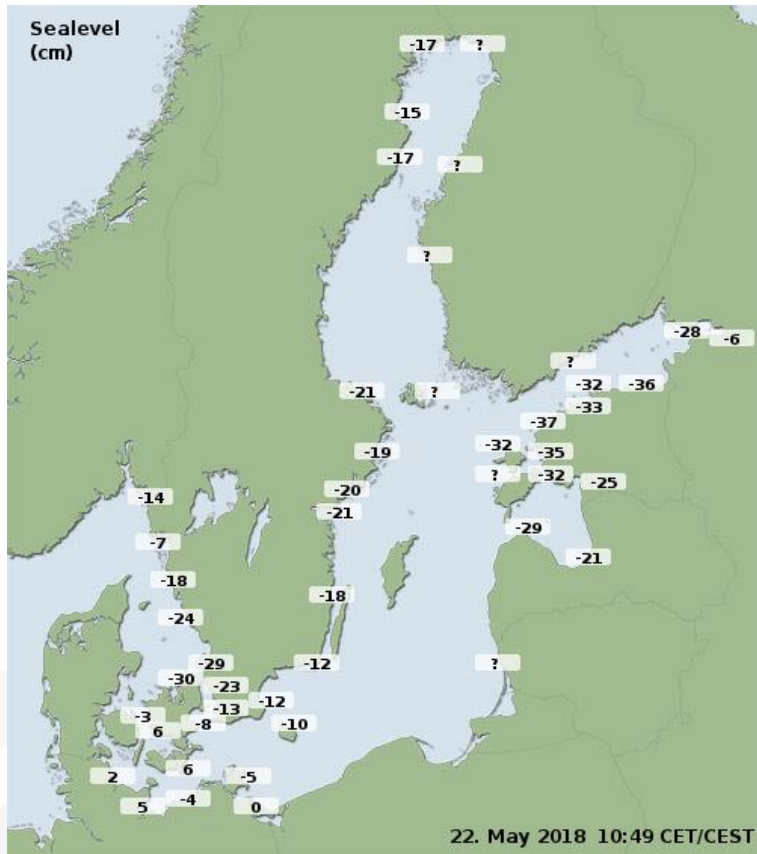
Baltic Sea Chart Datum 2000

BOOS Workshop on Coastal Operational Oceanography
Brussels 2018-05-22

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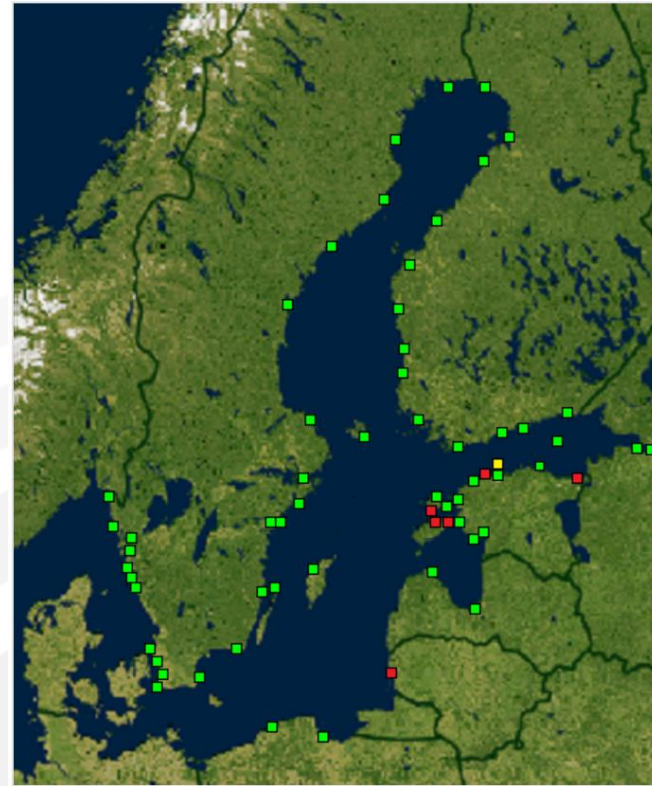
Sealevel data and information

www.boos.org (DMI)



www.boos.org (SMHI)

Sealevels BOOS



2018-05-22

Click on a station to get a diagram

Station:

Time UTC	Sealevel cm
06:00	-
07:00	-
08:00	-
09:00	-

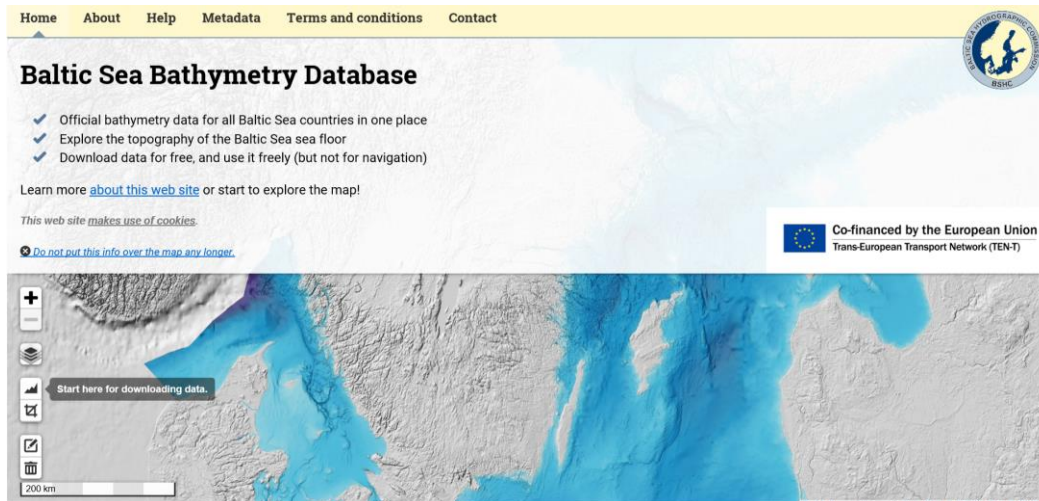
- Data missing

[Latest 24 hours of sealevels](#)

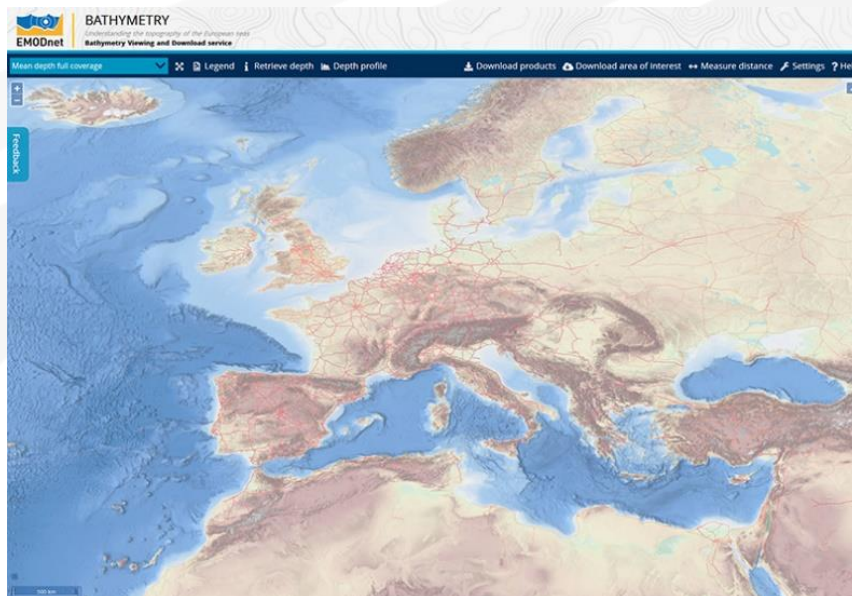
No common reference datum!

Bathymetry data and information

data.bshc.pro



www.emodnet-bathymetry.eu



500m digital terrain model (DTM)

Will be updated with a new DTM during 2018:

- based upon new surveys
- better resolution (~ 300m)
- statistics
- quality information

BSHC Chart Datum Working Group Website



BALTIC SEA HYDROGRAPHIC COMMISSION



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BSHC Chart Datum Working Group

"To implement a common reference level in the Baltic Sea"



Photo: Chart Datum Working Group 10th meeting, 7-8 February 2018, Arkö, Sweden

BSHC Chart Datum Working Group

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BSHC Chart Datum Working Group

Main objectives / Terms of reference

The BSHC18 (September 2013) decided to continue the CDWG work

The Working Group should

Continue the implementation of the European Vertical Reference System (EVRS)

Prepare the road map for transition, to establish a network of relevant bodies involved into the transition and efficiently communicate

Cooperate with relevant bodies on water level related issues

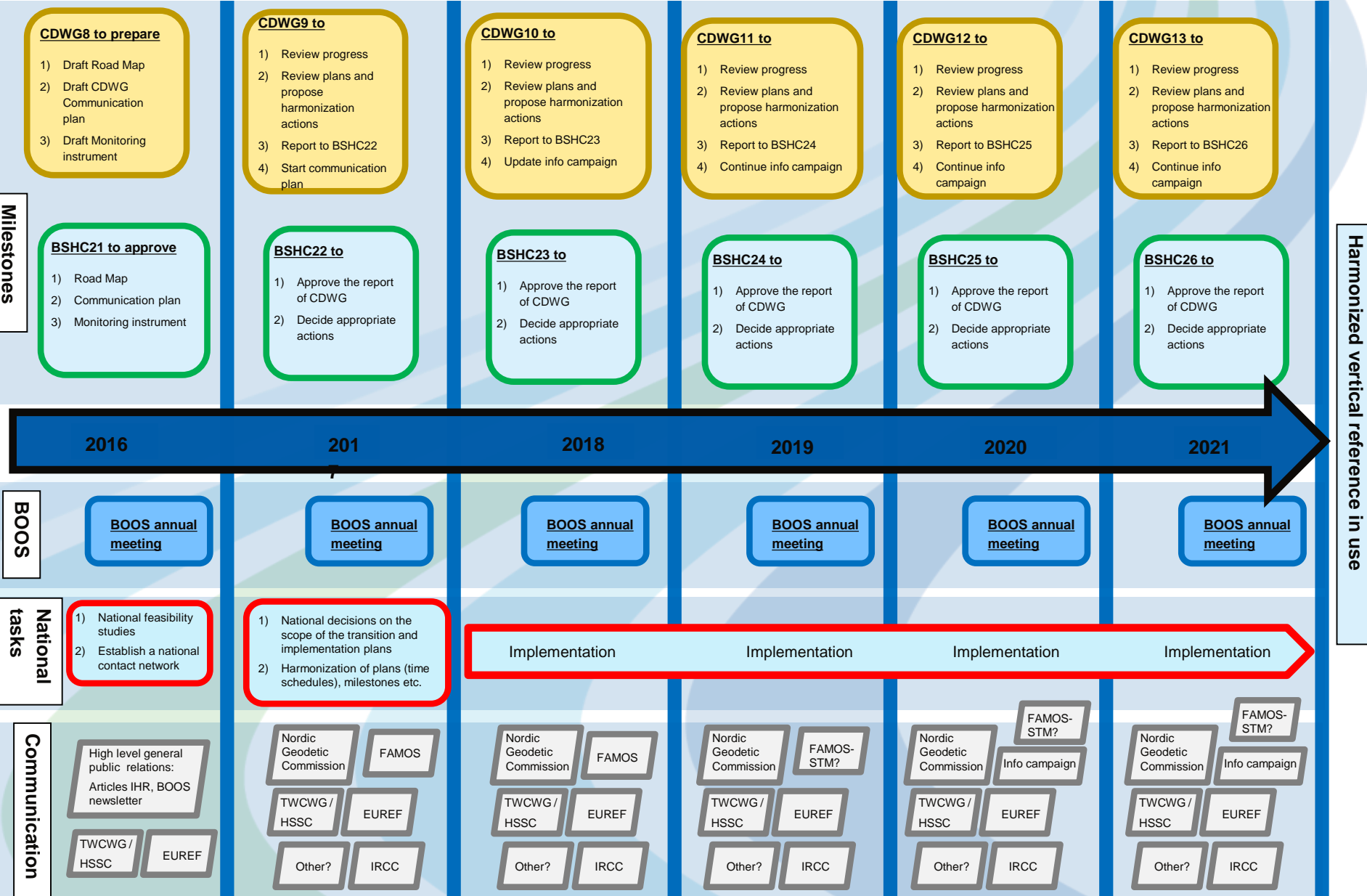
Further develop a common harmonized height reference, including further development of a common geoid model for the whole Baltic Sea area and supporting geoid and oceanographic studies relevant to these purposes.

Cooperate with BOOS and other relevant international bodies

Liaise with relevant IHO bodies

The Working Group should report to the BSHC Conferences

BSHC Chart Datum Working Group Roadmap



Agreement BSHC-BOOS signed in 2014

Memorandum of Understanding between BOOS and BSHC on transition to a harmonised vertical reference on the Baltic Sea

Noting that

- the IHO Baltic Sea Hydrographic Commission Conference (BSHCC19) has approved the goal to have a harmonised vertical reference on Baltic Sea for all water level and depth related information (e.g. tides, mareographs, interpolation and prediction of water levels, nautical charts). Chart datum Working Group was established to promote transition to the harmonised vertical reference which will be based on the European Vertical Reference System,
- the Baltic Oceanographic Observation System (BOOS) has a similar goal to have a harmonised vertical reference based on European Vertical Reference System on Baltic Sea,
- and both organisations expect that there will be many benefits with mutual co-operations and other relevant bodies

both organisations agree to co-operate on the transition to a common vertical reference for depth and water level information, with the aim to avoid duplication of work and to maximize mutual assistance.

Signatures

Tallinn, 30 June 2014



Urmas Lips
BOOS Chair

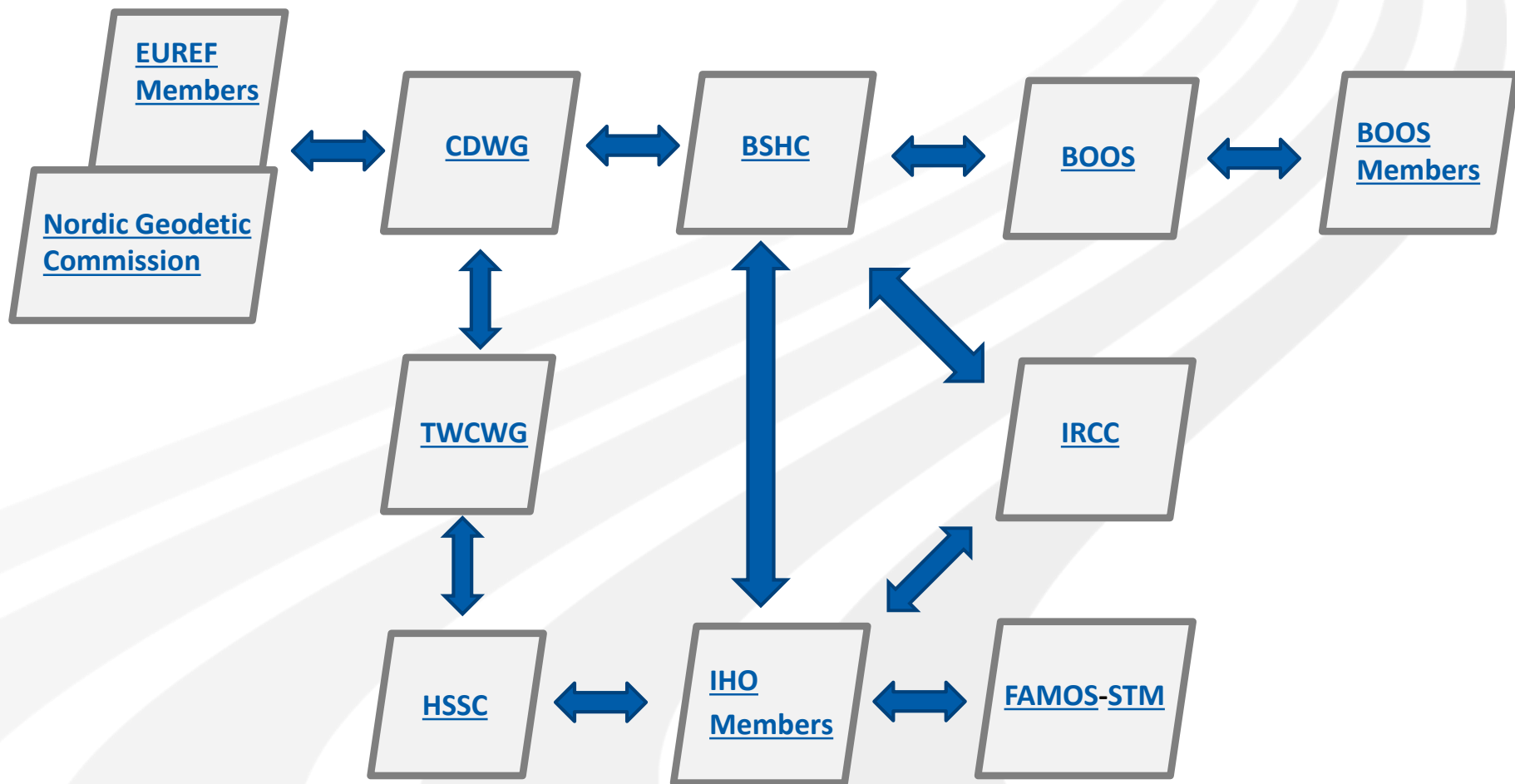
Riga, 12 June 2014



Taivo Kivimäe
BSHC Chair

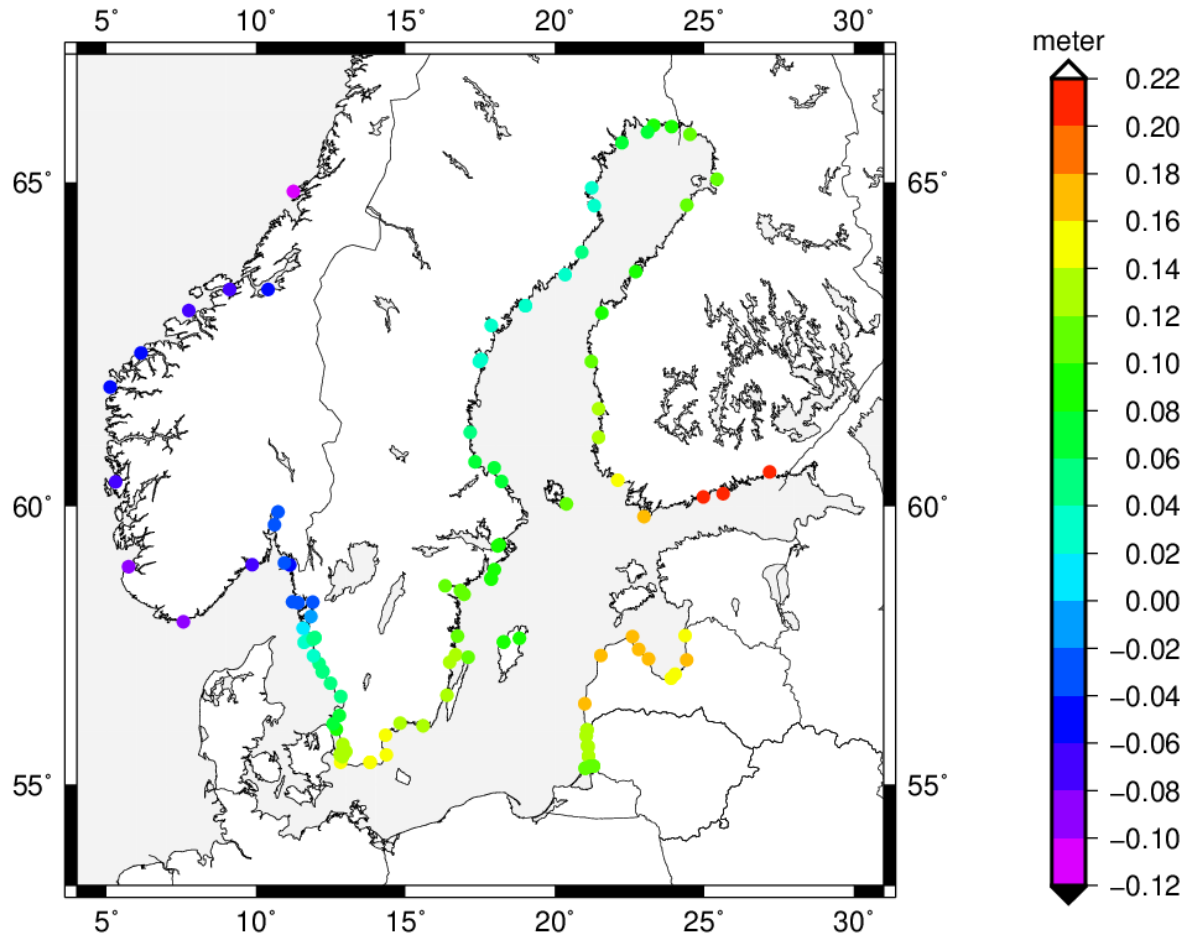
CDWG Implementation process

DRAFT



Difference between BSCD2000 and MSL

MSL(2018) in BSCD2000



[Table showing the difference at BOOS Sealevel stations](#)

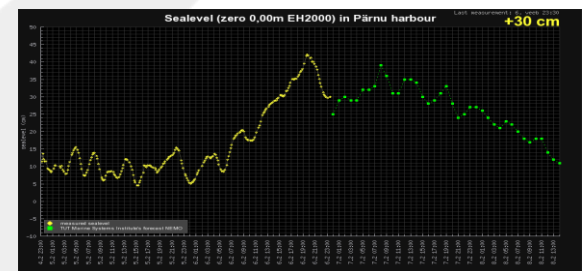
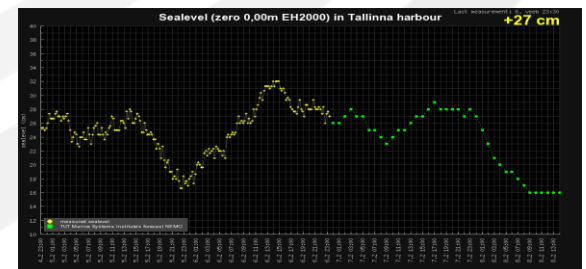
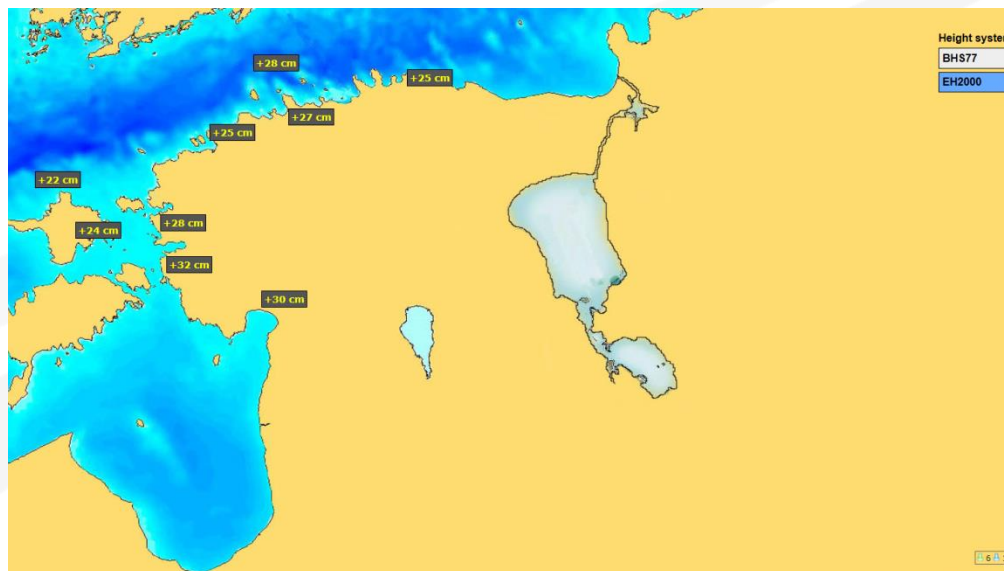
Implementation of BSCD2000 Estonia EH2000

Notices to mariners (2017-12-01):

http://adam.vta.ee/teenused/tm/2017/TM_No.12-2017.pdf

Sea level information:

<http://on-line.msi.ttu.ee/meretase/?en>



Implementation of BSCD2000

Sweden RH2000

Sealevel data and information

- Meta data, vocabularies...
- Observations
 - [SMHI.se](#)
 - [ViVa-display](#)
 - [BOOS](#)
 - [CMEMS](#) / [EMODNET-Physics](#)
- Forecasts
 - [SMHI.se](#)
 - [BOOS](#)
 - [CMEMS](#)

Bathymetry data and information

- Nautical charts (Chart improvement project)
- Baltic Sea Depth Database ([data.bshc.pro](#))
- EMODNET Bathymetry ([www.emodnet-bathymetry.eu](#))

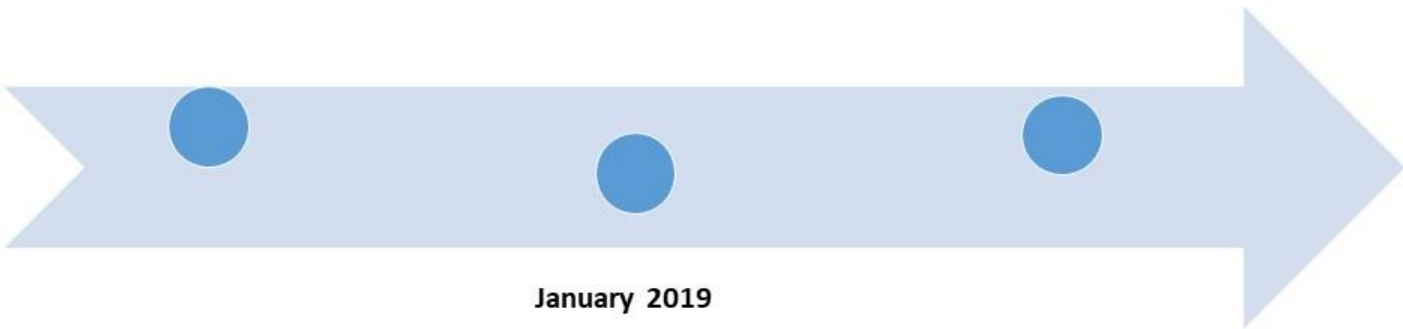
Timeline transition to BSCD2000/RH2000

November 2018

SMHI will present test sites
for observations relative
mean sea level and RH2000
(parallel)

June 2019

SMHI forecast and warning
service will use RH2000 as
the official height system



January 2019

The SHIP project will be
finished. Information
campaign. SMA and SMHI
will inform the user about
the transition.

Meta data definition of Baltic Sea Chart Datum 2000

BODC/SeaDataNet Vocabularies, [L11](#):

D33 Baltic Sea Chart Datum 2000 BSCD2000

” The elevation of the zero metres contour in the Baltic Sea as approved by the IHO Baltic Sea Hydrographic Commission as the common chart datum for the Baltic Sea. The datum refers to each Baltic country’s realization of the European Vertical Reference System (EVRS), which is connected to the Normaal Amsterdams Peil (NAP)”

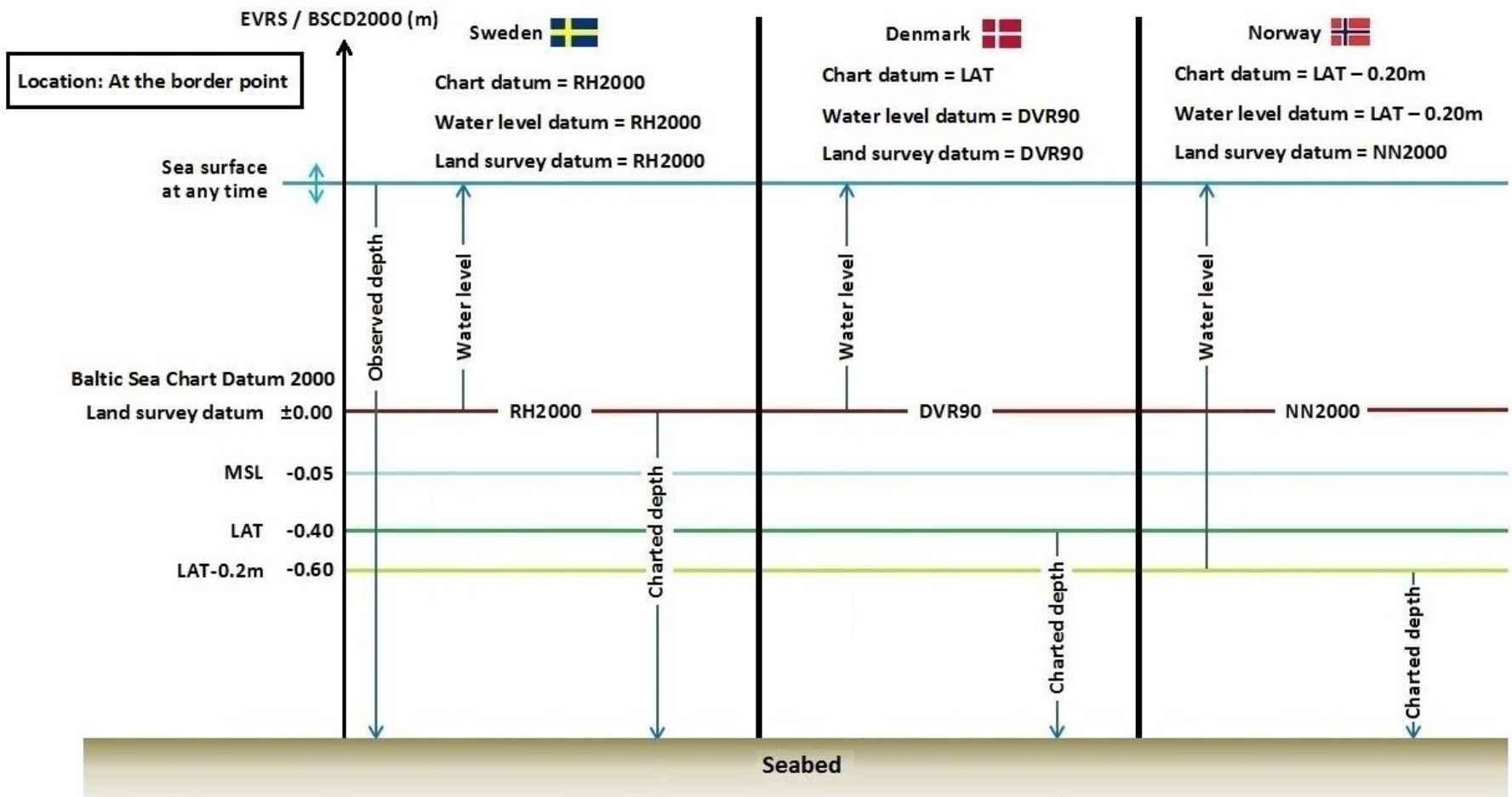
IHO Registry (S-100):

“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).”

Chart datums in the Skagerrak area



Reference datum SE, DK and NO



Datum = Reference level

BSCD2000 = Baltic Sea Chart Datum 2000

BSCD2000 is the national realisation of EVRS
(European Vertical Reference System)

Future navigation – ideal solution

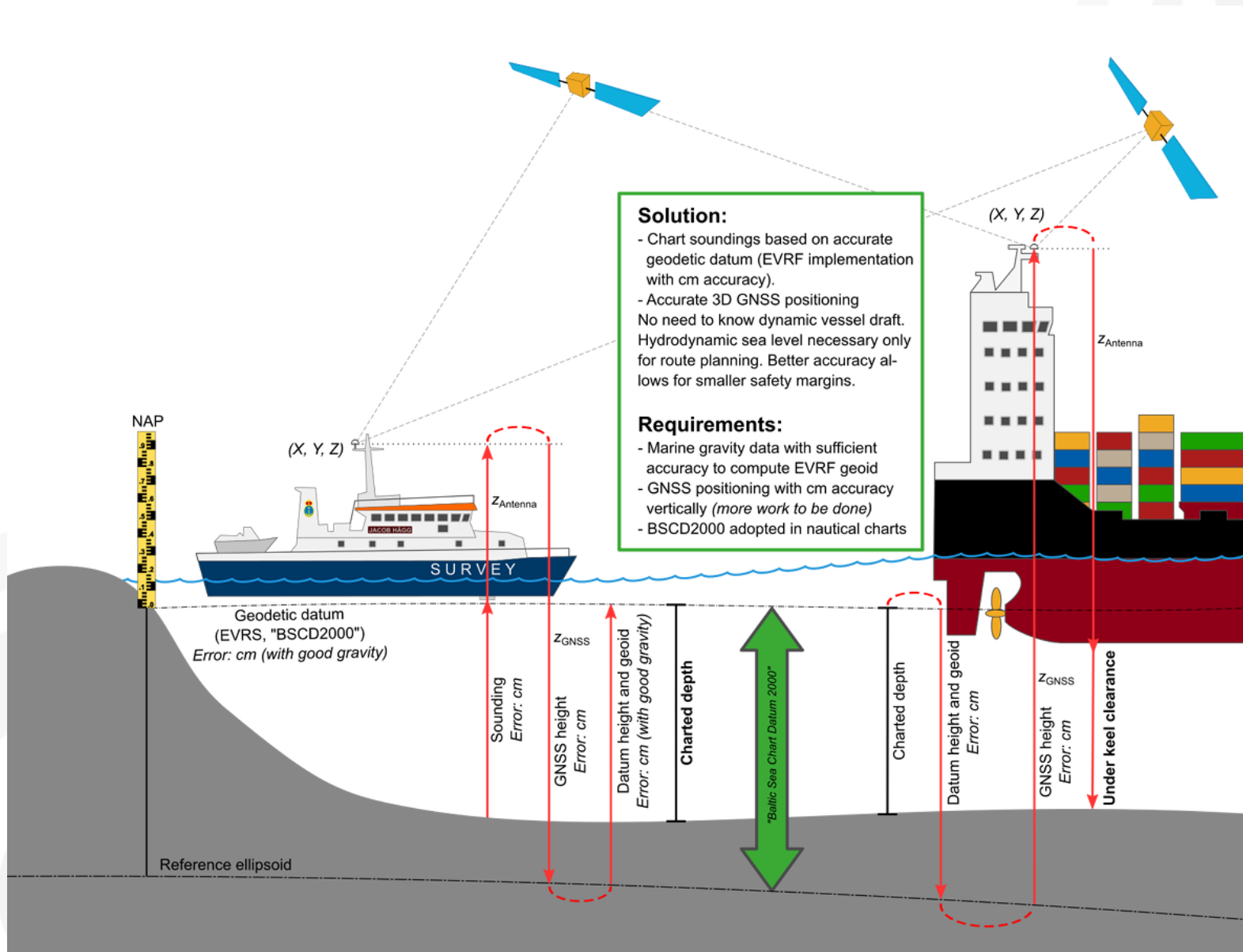


Chart improvement project - will be finalized in 2021

Old



New



BOOS Data Portal



■ 20 Fixed platforms (FP)



■ 200 Tide gauges (TG)



■ 20 Moored buoys (MB)

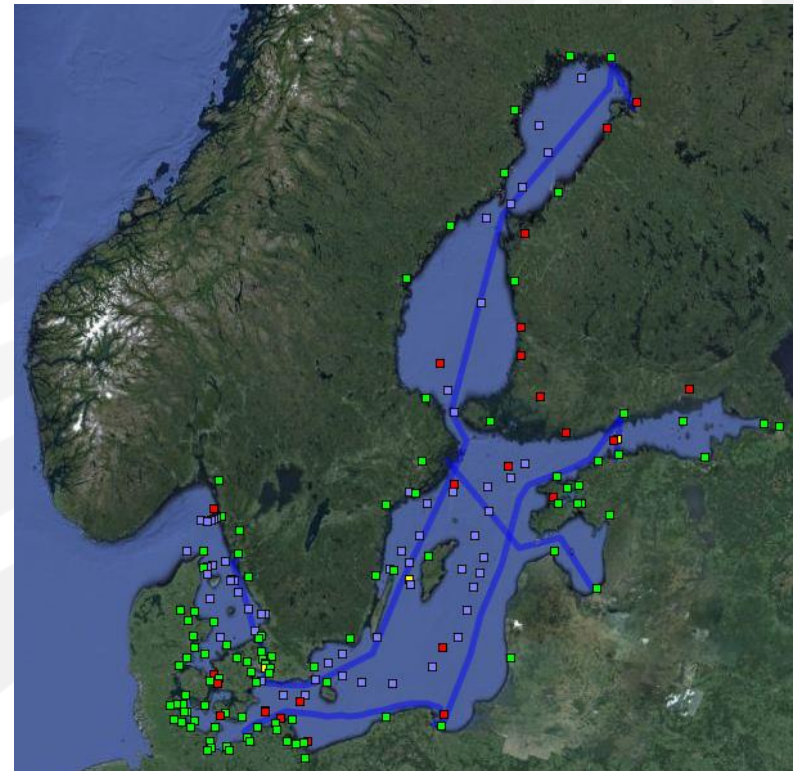


>20 Ferryboxes (FB)

5 Ice-breakers (FB)



>1000 Monitoring stations (CT)



<http://www.boos.org/boos-stations>

Thanks for your attention!



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