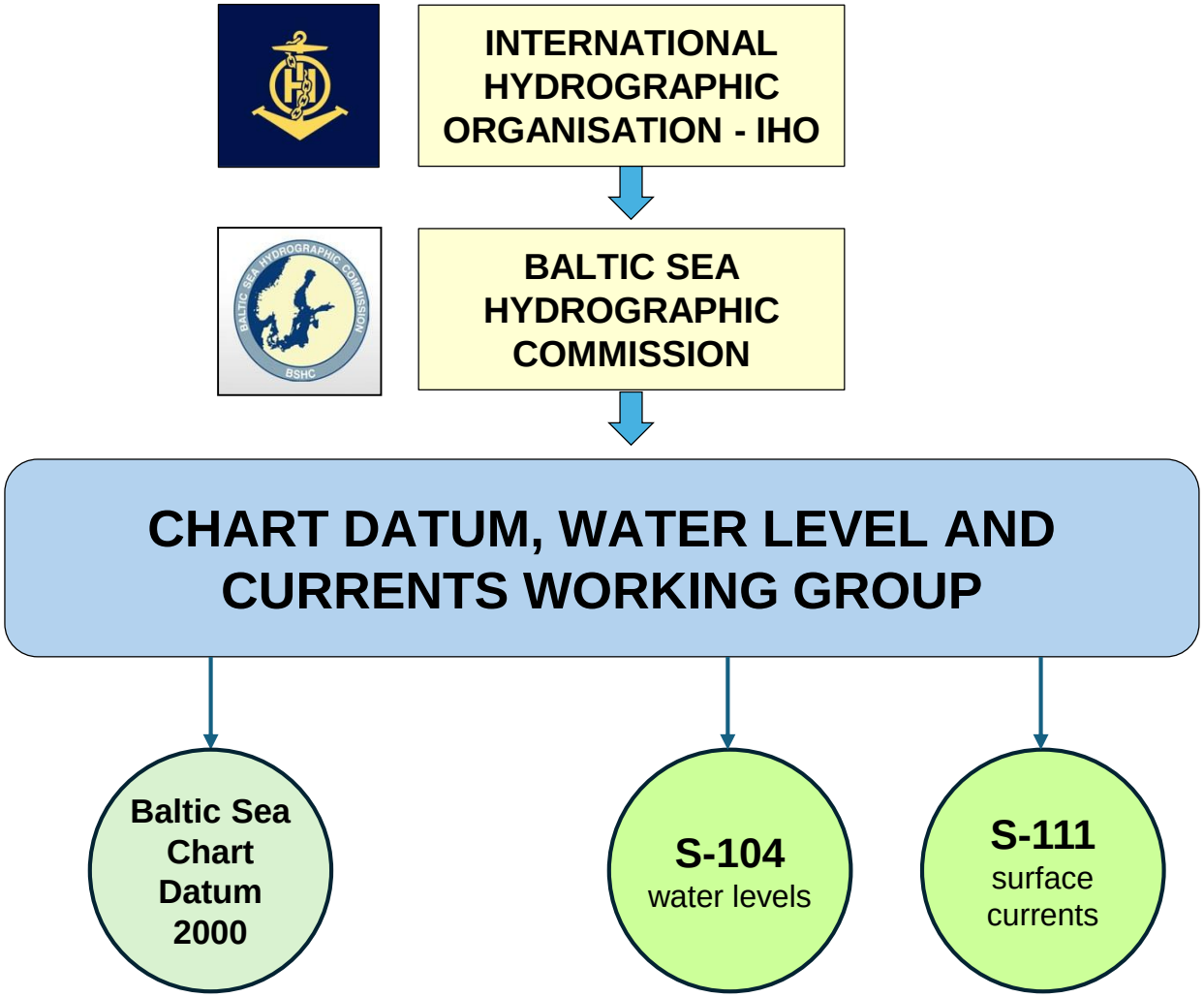
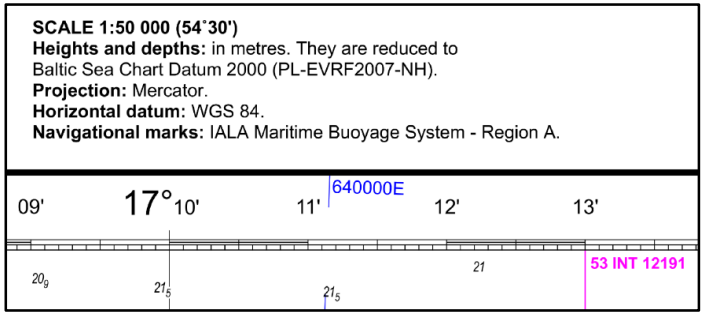
Baltic Sea Chart Datum 2000

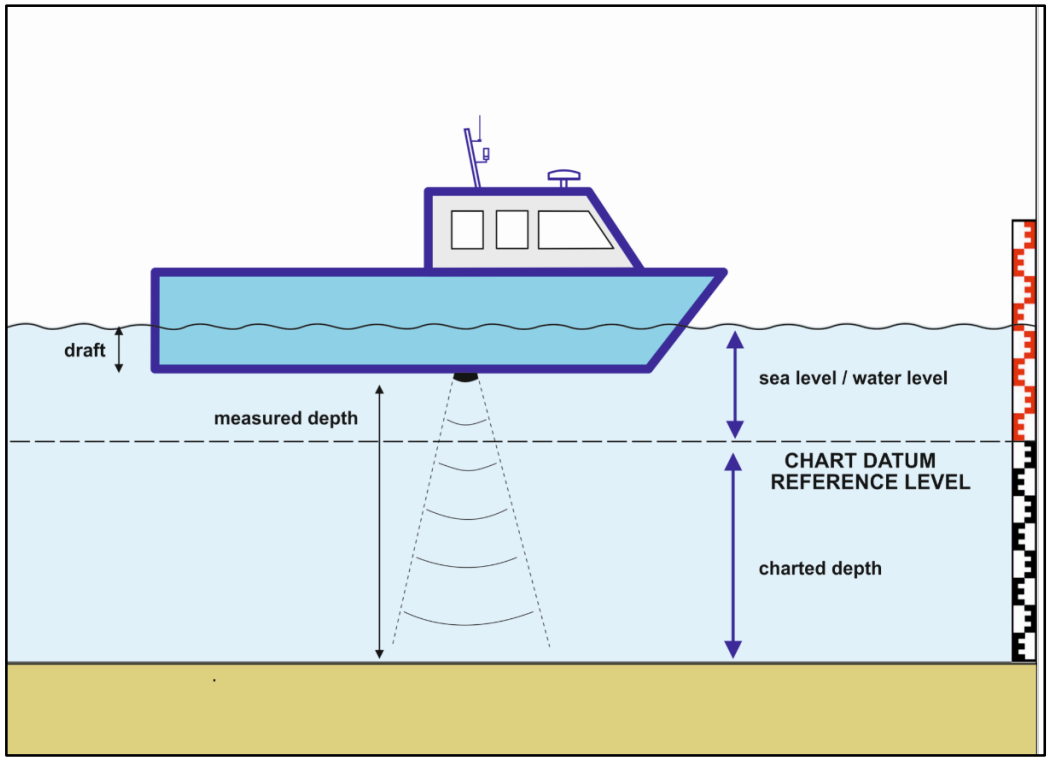
common vertical reference system in the Baltic Sea

Witold Stasiak
Hydrographic Office of the Polish Navy


INTERNATIONAL HYDROGRAPHIC ORGANISATION - IHO
BALTIC SEA HYDROGRAPHIC COMMISSION
CHART DATUM, WATER LEVEL AND CURRENTS WORKING GROUP
Baltic Sea Chart Datum 2000
S-104 water levels
S-111 surface currents

Why do we need a chart datum?





$$d_{charted} = d_{measured} + corrections$$

corrections:

- sea level
- draft
- squad
- calibration
- sound velocity
- refraction

Baltic Sea Chart Datum 2000

Brief History

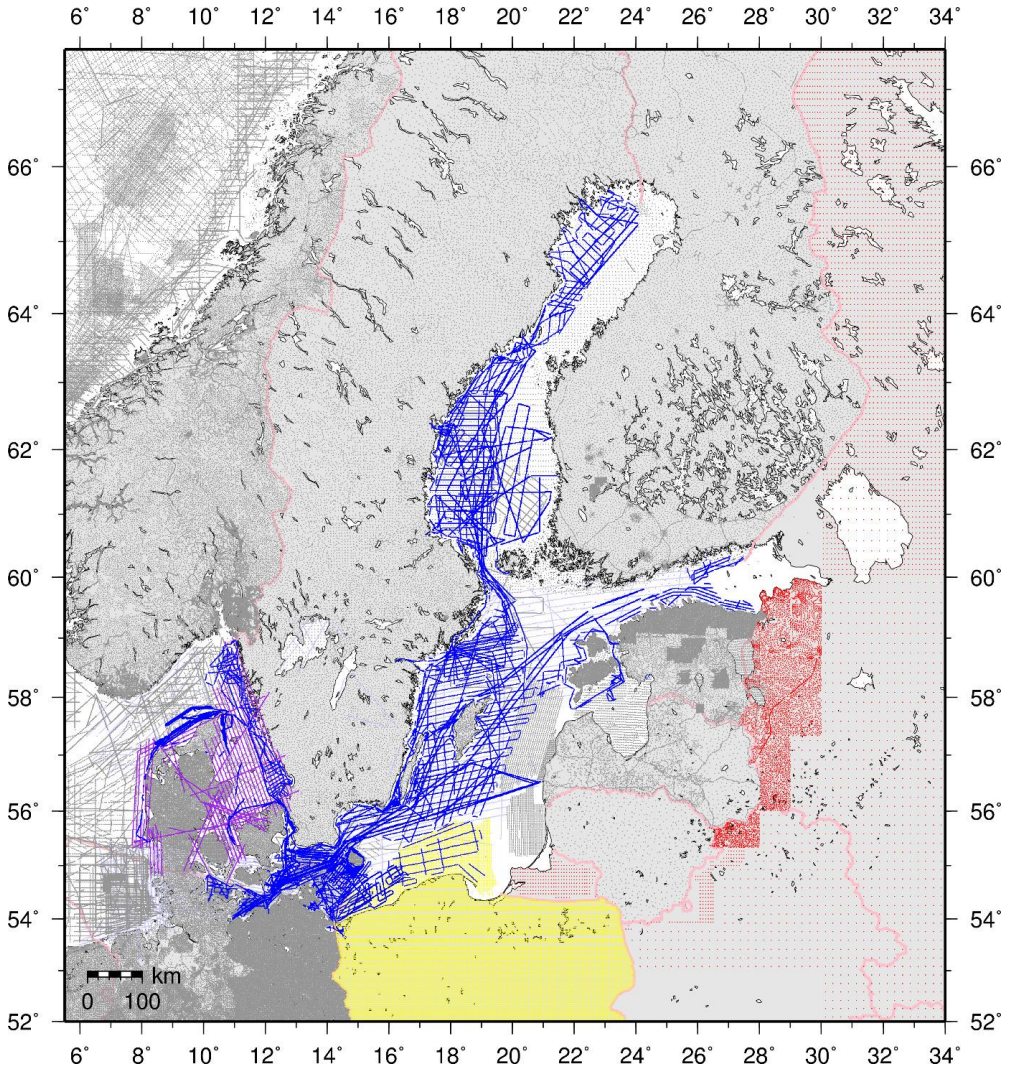
- **2005**: the Baltic Sea Hydrographic Commission (BSHC) recognized the issue of the incompatible chart datums in the Baltic Sea and established the Chart Datum Working Group (CDWG),
- **2013**: concept of the common reference vertical system based on EVRF was established, BSHC has approved the name and the adoption of the Baltic Sea Chart Datum 2000 and the abbreviation BSCD2000,
- **2020**: BSCD2000 has been registered as Chart Datum number 44 in the IHO Geospatial Information (GI) Registry and can therefore be used as a reference datum in all nautical products.

Baltic Sea Chart Datum 2000

Brief History

- ❑ gravimetric measurements
- ❑ geoid modelling

- ➢ co-financed by the EU
- ➢ Project FAMOS - Finalizing Surveys for the Baltic Motorways of the Sea

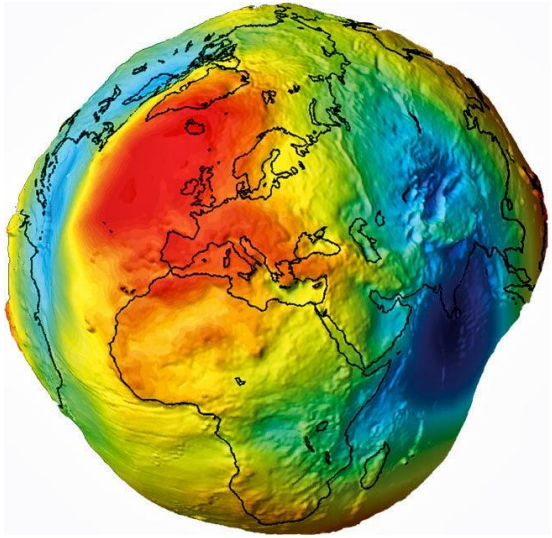


INVOLVED INSTITUTIONS

- DTU Space at the Technical University of Denmark
- BSHC – Baltic Sea Hydrographic Commission
- NKG – Nordic Geodetic Commission

Baltic Sea Chart Datum 2000

What is it?



source: Deepeartsince..com

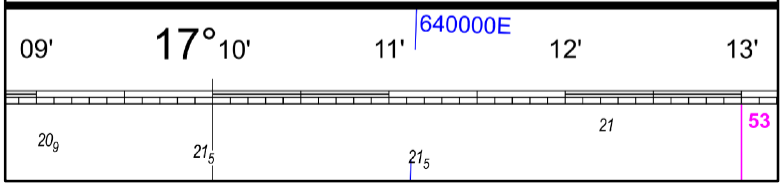
- geodetic reference system adopted for Baltic Sea hydrographic surveying, hydrographic engineering, nautical charts and publications,
- it is based on the definitions for the European Vertical Reference System (EVRS),
- the height reference surface of BSCD2000 is the equipotential surface of the Earth's gravity field,
- the zero level of BSCD2000 is in accordance with the Normaal Amsterdams Peil (NAP),

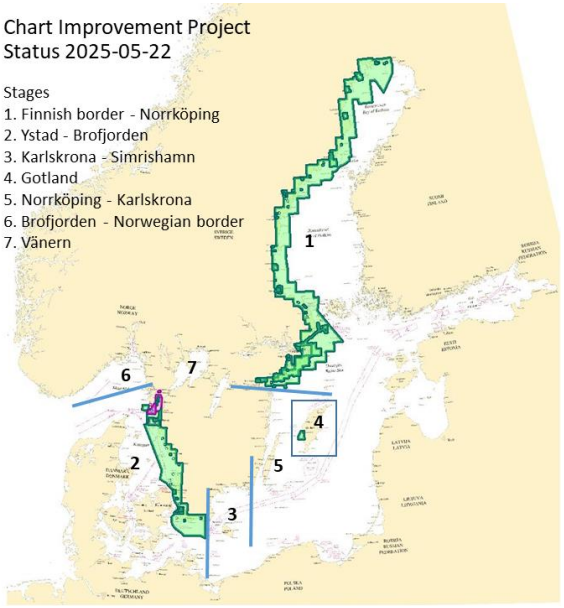
Sopot, 2025 June 3rd
Baltic Operational Oceanographic System

Baltic Sea Chart Datum 2000

National Implementation

SCALE 1:50 000 (54˚30')
Heights and depths: in metres. They are reduced to Baltic Sea Chart Datum 2000 (PL-EVRF2007-NH).
Projection: Mercator.
Horizontal datum: WGS 84.
Navigational marks: IALA Maritime Buoyage System - Region A.



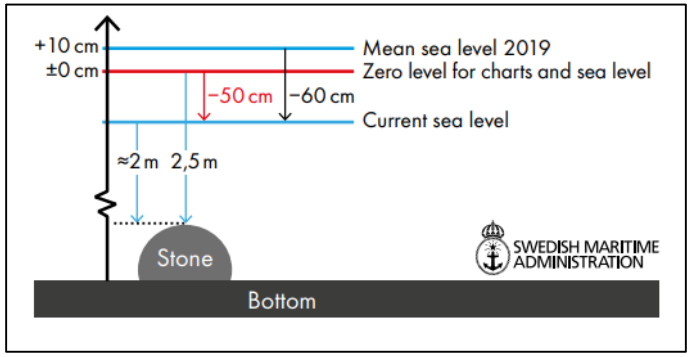


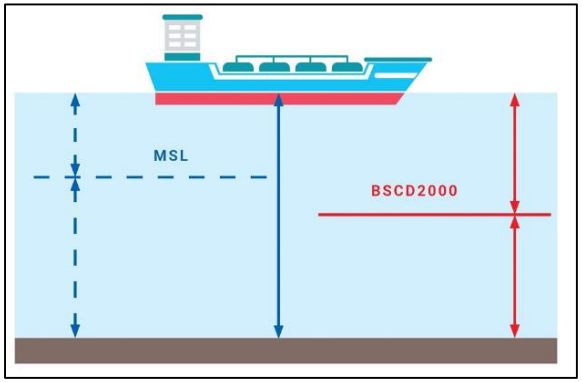
No.	MS	national realization of the BSCD2000
1.	Denmark	DVR90
2.	Estonia	EH2000
3.	Finland	N2000
4.	Lithuania	LAS07
5.	Latvia	LAS2000
6.	Germany	DHHN2016
7.	Poland	PL-EVRF2007-NH
8.	Sweden	RH2000

Baltic Sea Chart Datum 2000

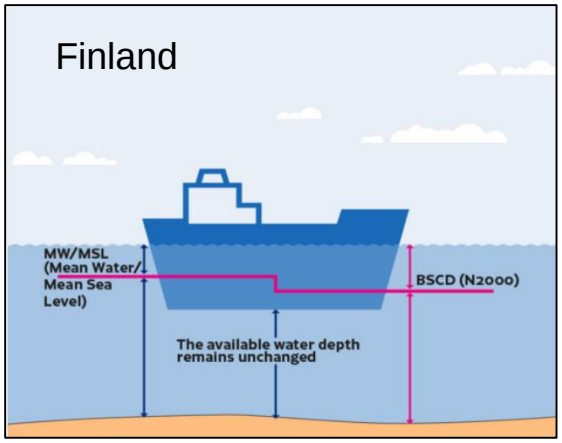
National Implementation

Sweden

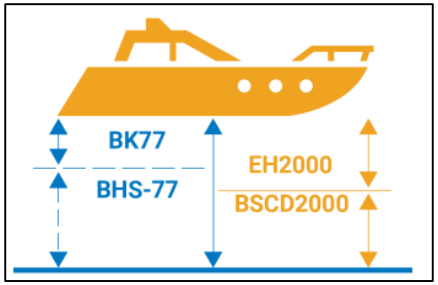




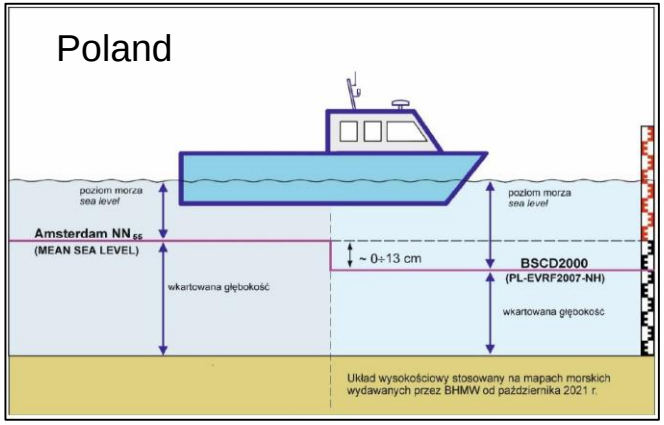
Finland



Estonia

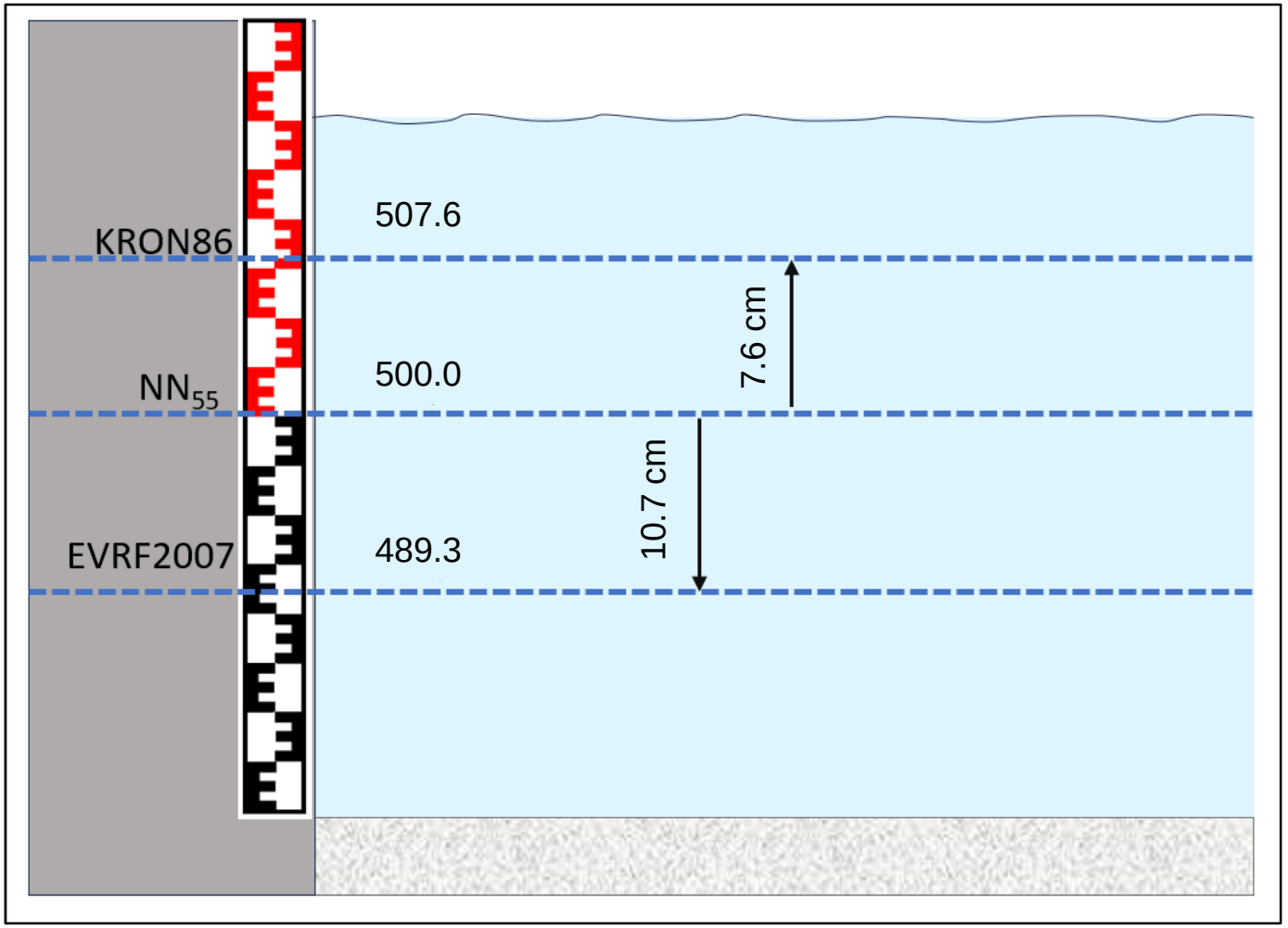


Poland



Gdynia Tide Gauge

Vertical systems relationship



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Baltic Operational Oceanographic System

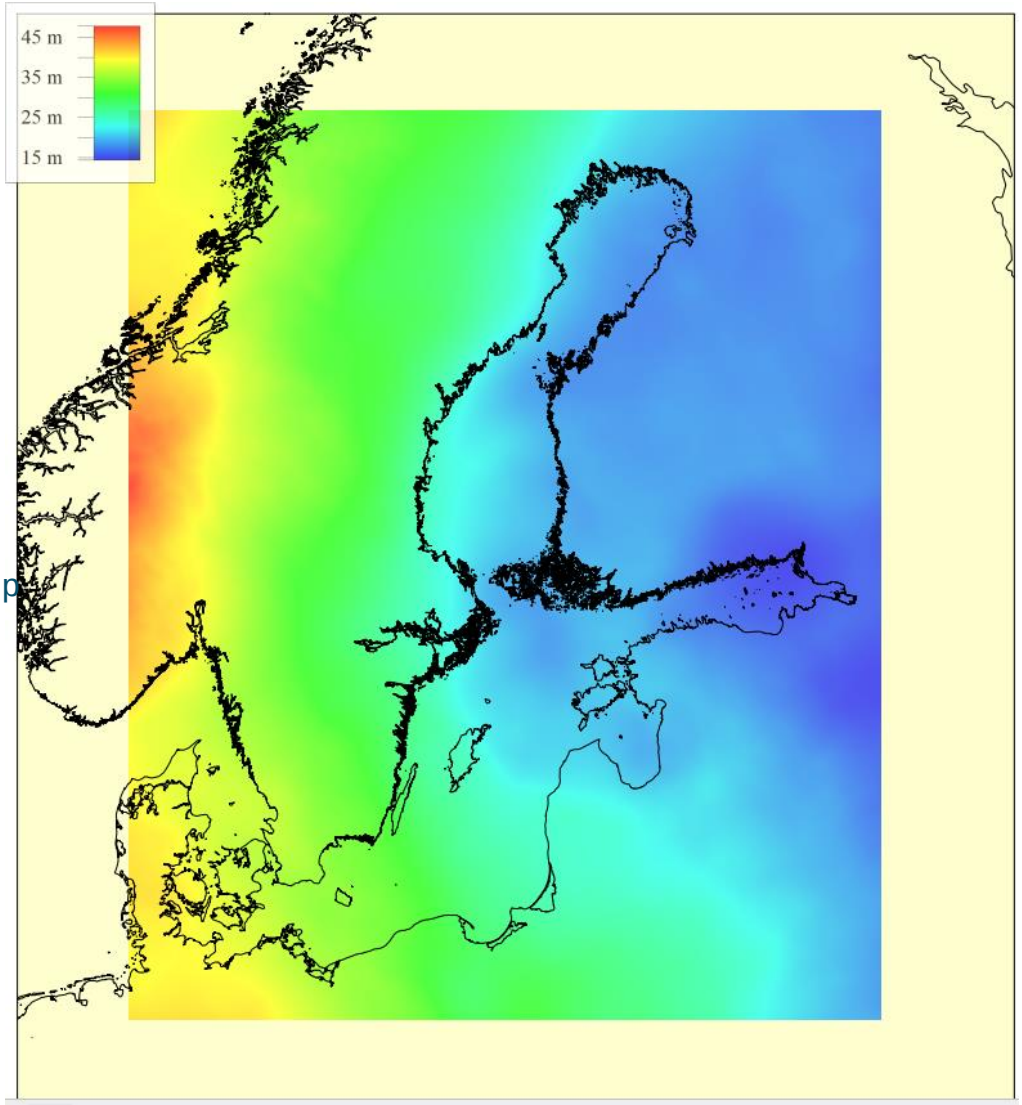
Baltic Sea Chart Datum 2000

What is it?

download link:
https://www.bshc.pro/wp-content/uploads/BSCD2000_v1_2023.zip

52.700000	18.050000	31.478
52.700000	18.060000	31.459
52.700000	18.070000	31.441
52.700000	18.080000	31.423
52.700000	18.090000	31.405
52.700000	18.100000	31.387
52.700000	18.110000	31.370
52.700000	18.120000	31.353

SOPOT:
54.45111897 18.56246429 29.201



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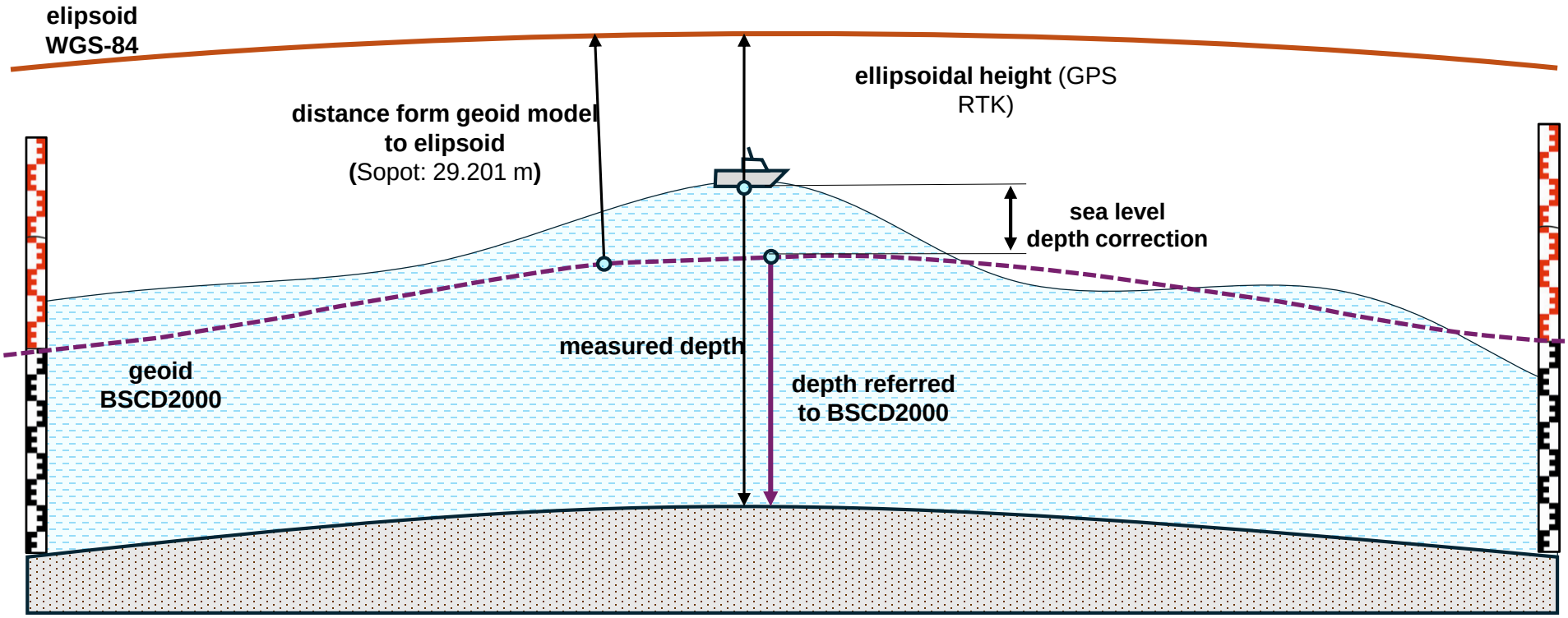
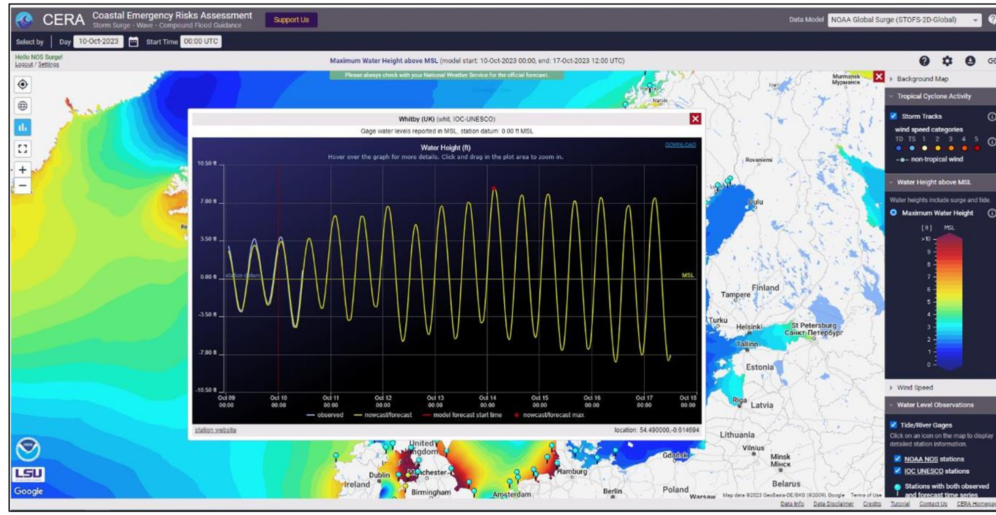
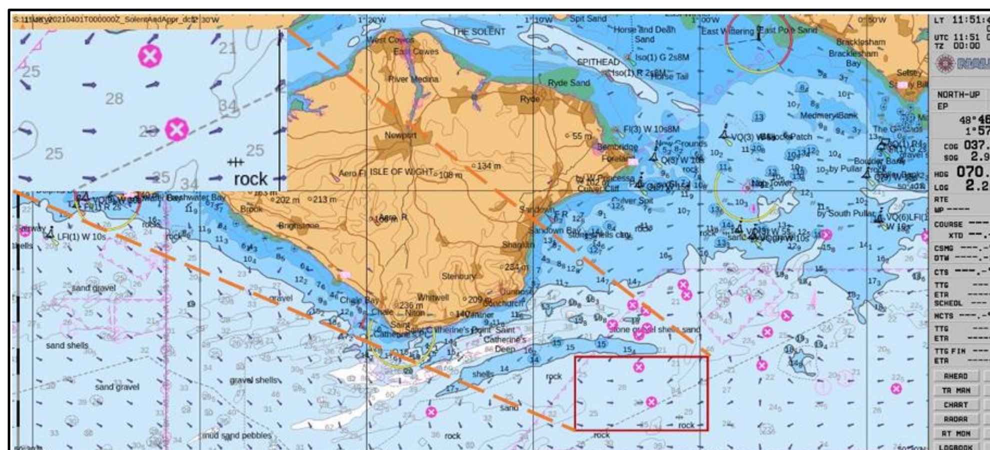


CHART DATUM, WATER LEVEL AND CURRENTS WORKING GROUP

S-104 water level

S-111 surface currents





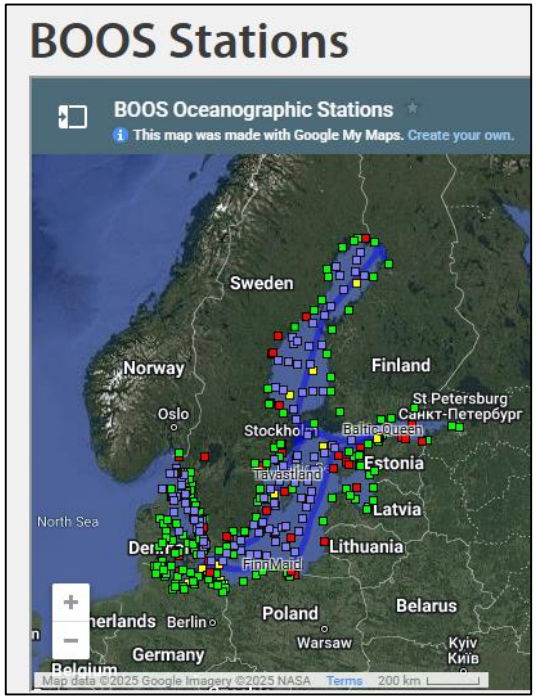
WATER LEVEL

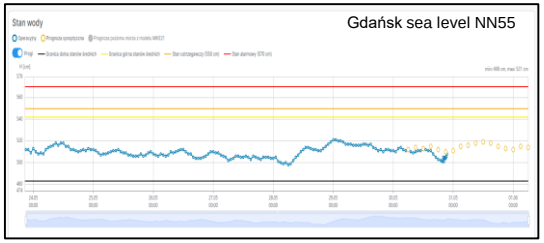
- live data?
- model 6h?

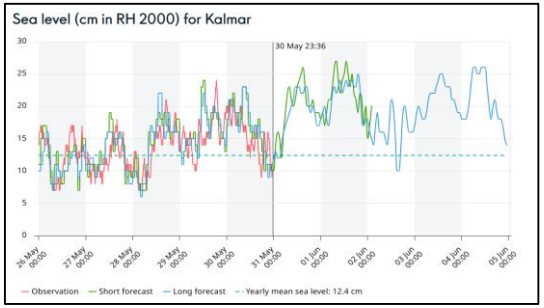
CURRENTS

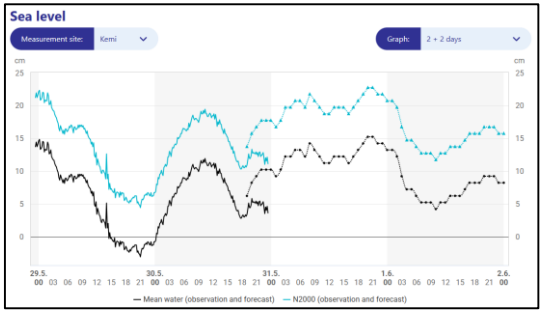
- model 6h/12h/24h?

One vertical reference level for all Oceanographic Projects









Thank You!