

Report of the 19th meeting of the NSHC-TWG to the 31st NSHC Conference

1. Meetings and attendance

The 19th NSHC-TWG meeting was held at the Norwegian Hydrographic Service in Stavanger 4th-5th June 2013. Representatives from United Kingdom, Netherlands, Belgium, Germany, Denmark, Sweden and Norway attended the meeting.

2. Current actions

There are several ongoing actions within the NSHC-TWG:

- Developments in modern tide gauges
- Developments in digital tide tables and website predictions
- Tidal reduction methods

The main discussion was on establishing a common North Sea reference surface. Several countries have their own reference surface related to the ellipsoid, but there are discontinuities at the borders. Two solutions were discussed:

1. Develop a reference surface based on a common hydrodynamic model for the whole North Sea.
2. Combining existing national models.

The group found alternative no 2 to be the most realistic at the moment, and actions A19/01-05 (see Appendix B) will investigate this possibility further.

3. List of deliverables and timing

- Compare LAT surfaces. NLHO will send a copy of the LAT surface from TU Delft to the TWG to be compared to the national models.
- A paper “Establishment and maintenance of vertical reference frameworks for high resolution bathymetric surfaces” was sent from IHB and NSHC Chair to the 5th IHO-TWLWG meeting in May 2013. UKHO was responsible for composing an answer to this letter, and the matter was discussed at the TWG meeting (many of the delegates to the NSHC-TWG also attend the IHO_TWLWG).
- Make an overview of existing models, including metadata. Each member state sends the information to UKHO.
- Investigate implications of eventual smoothing at the open sea boundaries between countries. Depends on the differences observed in the reference levels at the boundaries.
- Maintenance of the common reference surfaces. Investigate what is required to update the existing LAT surface.

4. Recommendations to the 31st NSHC Conference

The 31st NSHC Conference is invited to approve and amend, if necessary:

- This report

- The work plan for NSHC-TWG, Annex A
- The actions items, Annex B

5. Next meeting of the group.

Under rotating chairmanship the 20th NSHC TWG is to be held in Netherlands.

ANNEX A: WORK PLAN NSHC-TWG to be approved by NSHC

Work plan NSHC Tidal Working Group: ([Feb 2012] - to be confirmed by NSHC)				
Item number (TWG/item)	objective (WHY/priority)	task description (WHAT/HOW)	HO involved	Status
WP 16 / 01	Better accommodate the different needs of both navigational purpose and coastal management	Common MSL in reference to the GRS80 ellipsoid	All, coordination NLHO	Closed, see WP18/01
WP 16 / 02		Common LAT in reference to the GRS80 ellipsoid	All, coordination NLHO	Closed, see WP18/01
WP 16 / 03		Common chart datum in reference to the GRS80 ellipsoid	All, coordination NLHO	Closed, see WP18/01
WP 16 / 04	Enable GNSS-based tidal reduction and the connection with the vertical datum on land	Follow developments on geoid, MSL and LAT computations for the North Sea area	All	Permanent, see also WP18/01
WP18/01	Improve North Sea wide realization of reference surfaces	Explain and reduce differences in reference surfaces at the international boundaries	All	Permanent
WP 18/02		Exchange between HO's on operational methodologies for GNSS based surveys	All	Permanent

ANNEX B: Action items for internal coordination within NSHC-TWG

Action items NSHC Tidal Working Group

Item number (TWG/item)	objective (WHY/priority)	task description (WHAT/HOW)	HO involved	status
A18/01	Explain differences in realizations of LAT	Exchange on bilateral basis between involved HO's to investigate further the origin of observed differences at the boundaries between national reference surfaces	All	Permanent
A18/02	Be a stakeholder of the BLAST WP3 project	Get feedback from BLAST project team and study the outputs of BLAST WP3	All, Coordination NLHO	Closed
A18/03	Be a stakeholder of the BLAST WP3 project	Examine the feasibility for MS of the NSHC to join the BLAST follow up	All, Coordination NLHO	Closed
A18/03	Better capitalize the work done by the NSHC TWG	Study the feasibility for setting up a web portal for NSHC TWG on the IHO website	UKHO	Autumn 2013
A18/04	Facilitate exchanges of tide data by developing a standard XML format for tide data exchanges	Publish harmonic constituents and tide prediction for use within IHO community; UKHO acts as coordinator and links with TWLWG	All, UKHO	Permanent
Action 18/05	Towards a common language both for tide constituents and tide predictions.	Automation of tide table production	All TWLWG	Closed
Action 19/01	Compare LAT surfaces	NLHO send a copy of the LAT surface from TU Delft to the TWG to be compared to the national models	NLHO, All	Summer 2013
Action 19/02	Prepare an answer to IHO	UKHO distributes an answer to the letter from IHO for comments	UKHO, All	Summer 2013
Action 19/03	Make an overview over existing models, including metadata	Each member state sends the information to UKHO	All, UKHO	Autumn 2013
Action 19/04	Investigate implications of eventual smoothing at the open sea boundaries between countries	Depends on the differences observed in the reference levels at the boundary layers.	All	Autumn 2013
Action 19/05	Maintenance of the common reference surfaces	Investigate what is required to update the existing LAT surface	NLHO	Autumn 2013