

## **Report of the 16<sup>th</sup> meeting of the NSHC-TWG to the 29<sup>th</sup> NSHC Conference**

### **1. Meetings and attendance**

After the 28<sup>th</sup> NSHC Conference had taken place in Elsinore, April 2008, the 16<sup>th</sup> NSHC-TWG meeting has held at the Hydrographic Service Royal Netherlands Navy in The Hague (30<sup>th</sup> -31<sup>st</sup> October 2008) and was attended by representatives from Belgium, Denmark, France, Germany, Netherlands, Norway and United Kingdom. The representatives made note of the report of the 28<sup>th</sup> NSHC.

### **2. Current actions**

There are a number of ongoing actions within the NSHC-TWG. These include monitoring developments in modern tide gauges, monitoring developments in digital tide tables and website predictions, monitoring tidal reduction methods (and GPS assisted tidal reduction) and on-going co-operation and data exchange between member states.

The TWG agreed on the next draft work plan enclosed as annex A. The main objective for this next work plan is to better accommodate the different needs of navigational purposes, especially the increasing need of precise offshore hydrographic surveying and coastal management in the North Sea region as well as to enhance model correlation of land/sea environment. From this objective the TWG derived the following work plan deliverables:

- Common and seamless MSL in reference to the GRS80 ellipsoid,
- Corresponding common surface for LAT,
- Corresponding common surface for navigational purposes (Chart Datum),
- Extension to a North Sea improved geoid to enhance modelling.

In line with the NL offerings in the past to coordinate for a common LAT Datum, the TWG agreed that NL drafts the outline how to approach the realisation of the above mentioned four deliverables. This includes a reconsideration of the detailed tasks and what to do per nation (SMART-description: specific, measurable, accepted, realistic, timeline) and how to organize the coordination and monitoring of the progress.

### **3. List of deliverables and timing**

Determination by 2010 of :

- a common seamless MSL in reference to the GRS80 ellipsoid
- a common LAT in reference to the GRS80 ellipsoid
- a common surface for navigational purpose (Chart Datum)

Determination by 2012 of a improved geoid

The TWG considers the former work plan items for “Update Co-Tidal Chart 5059” and “Unified European tidal prediction system” as obsolete (see also agenda items 13).

The co-tidal chart is no longer relevant because of the extensive use of the present equivalent models with even more sophisticated interactive applications. These presently available models do satisfy the need of both the hydrographic community and mariners as well as offshore industry, development and research.

The unified tidal prediction system has been ‘overtaken’ by several unilateral initiatives for digital tidal prediction systems like Total Tide (UK) and SHOMAR (FR) with a global coverage.

With regard to the NSHC request to look into the UK VORF presentation the TWG endorses the UK approach and FR approach to establish MSL and then define the other surfaces accordingly. This TWG endorsement is also reflected in the new work plan that basically has the same approach as presented in the VORF presentation at NSHC28, and as presented in the Bathyelli presentation at NSHC TWG.

#### **4. Terms of Reference for the group**

These are mentioned in annex B of the minutes of the 16<sup>th</sup> TWG meeting (annex C to the report of the 16<sup>th</sup> NSHC-TWG to the 29<sup>th</sup> NSHC Conference (28<sup>th</sup> – 29<sup>th</sup> September 2010)). According to the recommendation of the 28<sup>th</sup> report, the TOR is reviewed by the Tidal Working Group.

#### **5. Recommendations to the 29<sup>th</sup> NSHC Conference**

The current new actions of the workplan as described above require active international co-operation between member states. On this moment there are too many different methods to deliver a common and seamless MSL a corresponding common surface for LAT and a corresponding common surface for navigational purposes (Chart Datum). The NSHC should give guidance to the TWG to reach agreement.

The 29<sup>th</sup> NSHC Conference is invited to approve and amend, if necessary:

- this report
- the workplan TWG (annex A)
- the actions items (annex B)
- the proposed Terms of Reference (annex C)

#### **6. Presentation of the Report**

Under rotating chairmanship, the 17<sup>th</sup> NSHC-TWG (19<sup>th</sup> -20<sup>th</sup> May 2010) will be held in Copenhagen, under Danish chairmanship. The Danish representative will present the report on behalf of the NSHC-TWG.

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

<b>Workplan NSHC Tidal Working Group: ([Sept 2010] - to be confirmed by NSHC)</b>				
<b>Item number (TWG/item)</b>	<b>objective (WHY/priority)</b>	<b>task description (WHAT/HOW)</b>	<b>HO involved</b>	<b>status</b>
WP 16 / 01	Better accommodate the different needs of both navigational purpose and coastal management	Common Seamless MSL in reference to the <a href="#">GRS80</a> ellipsoid	All	[by 2010]
WP 16 / 02		Common Seamless LAT in reference to the <a href="#">GRS80</a> ellipsoid	All (coordination NLHO)	
WP 16 / 03		Corresponding common seamless surface for navigational purpose (Chart Datum)	All	[by 2010]
WP 16 / 04	To enhance model correlation land/sea use of geoid as reference	Extention to a North Sea improved geoid	All	[by 2012]
WP 15 / 02		Update Co-Tidal Chart 5059	DE/UK	[obsolete]
WP 15 / 03		Unified (European) tidal prediction system	FR/UK	[obsolete]

## ANNEX B: Actions for internal coordination within TWG

<b>Action items NSHC Tidal Working Group</b>				
<b>Item number (TWG/item)</b>	<b>objective (WHY/priority)</b>	<b>task description (WHAT/HOW)</b>	<b>HO involved</b>	<b>status</b>
A 16 / 01	Better understanding of dependancies between LAT, CD and database references for future exchange of data and expertise between HO's	Each HO to describe methods and procedures for LAT, CD and database reference (re)calculations	All	
		Each HO to describe rationale for their choices for the respective subjects	All	
		Deliver present LAT surfaces to NLHO for further processing	All	
A 16 / 02		Publish harmonic constituents for use within IHO community; UKHO acts as coordinator and translation to XML (see also UKHO presentation)	All and TSMAD	
WP 15 / 02		Update Co-Tidal Chart 5059	DE/UK	[obsolete]
WP 15 / 03		Unified (European) tidal prediction system	FR/UK	[obsolete]

# **ANNEX C: Terms of Reference for the North Sea Hydrographic Commission Tidal Working Group**

**As amended by NSHC 28 and commented on by TWG-16th**

## **1. Objective**

To provide technical advice and promote co-ordination on tidal issues especially within the North Sea Hydrographic Commission (NSHC).

## **2. Authority**

The Tidal Working Group (TWG) is a subsidiary of the NSHC and its work plan is subject to NSHC approval. The TWG acknowledges the IHO Tidal and Sea Level Working Group (TSLWG) as a subsidiary of the Data Acquisition and Transfer Standards Subcommittee (DATS) of the Hydrographic Services and Standards Committee (HSCC). Subject to approval by NSHC the TWG is especially involved with the regional interpretation and implementation of tidal issues as identified by DATS/TSLWG. If applicable the TWG can also give advice to DATS and NSHC for further consideration.

## **3. Procedures**

a. The TWG should:

1. work according to the agreed NSHC work plan;
2. monitor and report the progress of the work plan;
3. propose new work plan items for consideration by the NSHC.

To support the identification of new work plan items deemed relevant for the NSHC, the TWG should:

4. liaise with especially DATS/TSLWG for any emerging development;
5. exchange views and experiences concerning tidal issues like unifying vertical datums, analysis, modelling and related issues like sea level rise and surge.

b. The TWG will conduct its business mainly by correspondence. Meetings and workshops should be scheduled as deemed necessary for the accomplishment of the work plan.

## **4. Composition and Chairmanship**

1. The TWG shall comprise representatives of the NSHC Member State and expert contributors if applicable.
2. Decisions should generally be made by consensus, if a majority is required each Member State has one vote.
3. External contributors can contribute to the work plan but are not entitled to vote.
4. The Chair and secretarial support will be from the Member State hosting the meeting.
5. The Chair should monitor and report on the work plan to the NSHC.