

OPENING STATEMENT - Chair

Dear colleagues, IHO members, Department of Hydrography and Navigation of the Brazilian Navy, Mister Secretary of TWCWG, I would like to thank the Directorate of Hydrography and Navigation of the Brazilian Navy for hosting this meeting of the International Hydrographic Organization's Tides Water level and Currents Working Group here in Rio, Niterói.

Thank and welcome to a new member César Henrique de Oliveira Borba from Brazilian Navy. It's a pleasure to see all of you, participants to the meeting TWCWG-1.

Each year, this meeting offers the opportunity to review marine topics from their definition to their final recommendations and specifications created in an international framework. Each year, relevant questions on water dynamics are highlighted, as well as resolutions associated to it. Our work is in a process of hydrodynamics to be defined in some common international reference documents and to be refined.

In 2015, two big issues occupied us mainly.

- (1) We are actually merging 2 groups TWLWG and SCWG. Both groups can bring a lot thanks to their strong expertise in tidal and current analysis. In the continuity to what have been done before, I'd like to keep the same level of interactions and activities and to promote synergy between both groups of researchers involved in these issues.
- (2) The second major point on which we focused was to take forward the various Product Specification work packages and maintain the existing momentum. The teams of the Working Group project have important roles to play.

Progression:

It is pleasing to note the work being progressed across numerous levels since the two last meetings. The importance of the work being undertaken by groups has been brought into focus by the developments and their need for ECDIS related tidal and current products.

The work on [S-112](#), the dynamic water level data product specification, and S-111, surface current product specification, is reflected in the direct involvement of the S-100WG chair. TWLWG6 was an important step forward recognized by the identified Work Package teams created in Wollongong.

WP1 Product specification (Leader-Australia / Participants-All): Zarina Jayaswal;

WP2 Real time data transfer format (Leader-UK / Participants-All): Christopher Jones;

WP3 Gridded product (Leader-USA / Participant-All): Stephen Gill;

WP4: Surface tidal current (Leader-SCWG chair / Participants-All): Kurt Hess.

Last year, project teams met during Silver Spring meeting, to share the experience of a year with the WP organization. It offered an occasion to interact with other IHO WG, like S-100 WG, chaired by Julia Powell. So that, from 2014 and 2015, it is clear that communication with S-100 WG (Julia Powell contacts and WP leaders) intensified and a first step was done to consider the work needed for marine applications in future e-products for navigation. This action that is reinforced aims to anchor our specifications and remains a useful work fabric for marine applications in e-navigation.

The main things raised from WG teams include: grids, data contents keeping consistency in product, format exchange, current specifications S111 contribution. Two strands, which are common to both S-112 and S-111, are the data transfer standard standard (S-104) and the presentation/visualization, an area on which SCWG have been working with particular focus. It is appropriate and timely to develop a data format standard for tidal inputs into ECDIS. They will be presented and discussed in dedicated session, starting from this afternoon.

A call of interest was addressed to industry to get some of them involved in our process of specification of future dynamic water level data product specification. Four industrials expressed interest to contribute, giving feedback, identifying their needs.

- Jeppesen, Eivind Mong, that provided comments on SCWG S111 specifications.
- OMC International, Chris Hens,
- IIC Technologies Inc., Ed Kuwalek
- GEOMOD, P LeBihan

I prepared a draft document to sum-up some industry notes. I'd like to share it with you.

I submit for your consideration following questions that will be detailed in the document in the appropriate sessions, this week:

- Consistency between local bathymetry and vertical datum of the broadcast water levels. For each zone a definition of the local vertical datum will need to be defined and, quite possibly, also attached to the broadcast water levels.
- Constant or Spatial variation in vertical datum? If variable, then interpolation method used should be mentioned.
- What could we recommend in case of AIS message may or may not be received by the vessel depending on the level of congestion on the AIS network?
- If data for a particular zone along the planned route is not received, what will the ECDIS assume? Will it revert to the tide table predictions? ⇔ Provide recommendation for a backup solution.
- In case of multiple stations broadcasting in a single zone in ECDIS, what to do?

- Question of updated models (bathy, numerical model,) uploaded in e-navigation products and reality of the navigation.
- Essential other points: provide metadata hydrography, meteorology and forecast time series.

We've a chance that the S-100 WG meeting will provide the Exchange Catalogue metadata sorted out. Julia Powell, Kurt Hess and Louis Maltais contribute to the updates.

All these issues are of major significance for the future, they will impact on the work of this Working Group and its Project Teams over the next few years and will require significant input as they are developed and taken forward.

We managed to add enough information and experience to start to design products specifications, we now have to find the right balance of information not too much, not too few. That is a collective work not so easy. This is what will guarantee the specification efficiency and its use in the future e-navigation products.

After at least 2 years maturation, industry feedback can be now helpful for us, because needs are identified, and contacts are taken and activated. Work done by the group has progressed. That is why this year is a key point to succeed in our task for future product specification.

I suggest we could make a focus on the necessity to get a precision expected, associated with dynamics water level data, for these future products. It will be regionally dependent.

This year, we would like to suggest breakout session groups that will focus on each WP. Before, a common session will make a point on the state of the art in the 4 WP we have to push up. After it, breakout could be organised in order to treat specifically of one WP.

The common session will highlight Product Specification Presentations: (Monday afternoon up to 15 pm).

S-104: Tidal Information for Surface Navigation.

S-111: product specification for current.

S-112: dynamic water level specification for future e-[products](#).

Breakout session could start from Tuesday morning, up to 15:30 pm.

Outcomes of breakout session groups: Tuesday from 15:30 to 17pm (common session).

From Wednesday to Friday, other important topics will be discussed: review of tide gauges used by IHO Member States, training materials, exchange of Harmonic constants/predictions, determining ellipsoidal height of MSL, IHO resolutions, on-going actions on standard constituent list.

Capacity Building remains an important task of the IHO and the Tides, Water Level and Currents course is much in demand with its development into a more in depth content. TWCWG needs to develop a cadre of experienced instructors to spread the load and ensure a consistent level of content delivery. Friday morning, we could make a review on existing ongoing documents (contact South Africa, Ruth Farre).

We meet 5 days which is longer than the previous times. We have a great opportunity to bring together our experiences and efforts this week. I'd like to say let's bring a document that will be drafted thanks to the previous meetings outcomes and synergy between us, here, now during this week in Rio.

No doubt we bring together strong expertise on current and the tide, here. If we can seize this annual opportunity to write the second draft of the specifications' document, it would be a challenge to win for our WG. Concrete applications of our work in this meeting make our work challenging.

I thank David Wyatt for his efficiency. I'd like to thank again the Department of Hydrography and Navigation of the Brazilian Navy and people involved in organization of this meeting, particularly for welcoming us at Rio. I would like to welcome you all in this meeting and I wish fruitful deliberations on the various issues to be examined.

Muito obrigada

Gwenaële Jan