

## S-111 Presentation – Kurt Hess

- Developers need to provide QA/QC and uncertainty data
  - o For S-111 Uncertainty for 5 variables: horizontal position, vertical position, time, speed, direction
  - o QA/QC: see S-111, Annex D
- Suggestions (from S-102) for chunking in HDF5
  - o <http://davis.lbl.gov/Manuals/HDF5>
- 1.8.7/Advanced/Chunking/Chunking\_Tutorial\_EOS13\_2009.pdf
  - Data compression (ZIP) and encryption are described in S-100 Part 15
  - o Files are compressed with ZIP, possibly using the DEFLATE option
  - o Encrypt after ZIP compression with an Advanced Encryption Standard (AES) method
- PS should have use cases for Alerts and Indications (S-126)
  - o Requires a new feature type
  - o Keyed to spatial (i.e., geographic region) and time (high water, flood/ebb) elements
  - o Needed data: current speeds, tidal amplitude
  - o Instructions to be added to Portrayal Catalog
- How to implement Marine Resource Names (MRN)
  - o Form for publications (URN=Uniform Resource Name):
  - o urn:mrn:iho:pub:<pub type>:<pub name/number:<ed\_number>:<correction>:<clarification>:<optional information>
  - o **Sample:** urn:mrn:iho:pub:spec:S111:1:0:0
- Should there be a standard value for 'missing value' or 'unknown value'?
  - o In S-111, for uncertainty use -1.0
  - o For missing value, user specified 'fill' value
  - o S-102 uses 1,000,000.0 for missing or unknown value
- Dataset naming convention (S-97, Part A)
  - o XXXCCCCnnnnnnnnnnnnnnnnnnnnnnnnnnnnnn
  - o -XXX = '111', CCCC = producer code, 'nn..' = user-defined characters.
- Uncertainty for entire dataset, or for each value (e.g., bathymetry)?
- HDF5: Regular Grid Spacing for reading and writing

- Continue developing & consulting on HDF5 file formats
- Clarify S-111 interpretation of specifications as needed

- Respond to requests arising from implementation
- by test bed creators and OEMs
- Review S-111 Ed. 1.0.1
- Develop XML Exchange Datasets
- Continue uncertainty estimations
  - o Revise definition of uncertainty
  - o Add uncertainty method to HDF5 attributes
  - o Review by TWCWG
- Develop software for data quality measures

## S-104 Presentation – Zarina Jayaswal

### Issues

- Gridded Hydroid name
  - o Propose changing name to ‘Datum Separation’
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- Uncertainty of need for ‘Areas of Influence’
  - o Simple boundary limiting to ENC Nav purpose 5 and 6 scale charts
  - o Co-tidal lines (height and time differences to a single station)
  - o How to handle multiple stations that occur on a single ENC?
    - TWCWG4 input : discussion on the nearest obs stations + validity and availability flag test OR the reference observations (following the use done for tide prediction using a tide gauge reference (advantage : long time series,-> better estimation of tidal harmonics ; or if no tide : better estimates of uncertainty on the ref. observations, + regular control on it, etc.)
- Definition of Water Level Trend
  - o Is 0.20m threshold applicable to areas with small and large water level range?
    - Criteria is probably a strong constraint.
      - TWCWG4+ : provide the criteria you’d propose for this purpose.
- Are definitions for “Water Level Height” & “Datum Difference Value” needed?
- Is there a need to portray of gridded water level data?
  - o see some example on derived product for S-102
- Resolve tidal zones for AIS messages
- How to deal with real-time observations under maintenance
- Unique name – S-100 WG raised if this should be in-line with Maritime Resource Name concept. Currently we define it at 12.4 as being published Port Name in tide tables and the unique identifier as the - port number as given in Tide Tables

====Feedback from members of TWCWG:

Raised concerns : The most fundamental concern is how to get version 1.0 completed this year. This leads to the next concern on [what the product is intended to look like](#). There are a number of different [graphic displays that need to be defined in detail](#). Additionally, [none of us see a methodology for allowing the chart bathymetry to change based on the gridded or point bases water level data](#). There is mention of a gridded hydroid product but we are not sure how that would work.

Is some test cases selected on IHO web + others examples on bathymetry + water level demonstrator could help to fix this point?

**Approach that we are laying out in S-104.** From NOAA's perspective, we think that a zoning scheme needs to be defined to allow bathymetry to change but while we have suggested adding it to the specifications that has not happened. [In version that will be updated.](#)

NOAA and S-100WG think there are some options on what can be included in version 1.0 but this needs the whole working group to be engaged.

⇒ S-104 use cases : ask for some volunteers : Dead line to declare himself volunteer to join S-104 volunteers team : **2019-04-30**.

S-104 use case definition:

Ex:

- TestBedReport.pdf [https://www.iho.int/mtg\\_docs/com\\_wg/S-100WG/S-100WG3/S-100WG3-8.5\\_S100\\_TestBedReport.pdf](https://www.iho.int/mtg_docs/com_wg/S-100WG/S-100WG3/S-100WG3-8.5_S100_TestBedReport.pdf) : interesting for the frame that gives a clear plan of what could be in a test cases definition.
- S-100 trail : <https://www.youtube.com/watch?v=Z8FhC2OUdXU>

**Surface current encoding test outputs:**

- NOAA Erin et al. : provide a synthetic view on the work that have been done on S-111 encoding test.
- Set of python packages  
Tool Thyme (open source python source)  
S100py package-S111.py.
- Japan provided their output HDF5 S-111 and presented their main steps of the encoding process.
- Luis Becker et al. (DE) presented HDF5 encoding on several surface current files. They developed a tool.

Tools issue: (1) Share same tool(s)( using our FTP temporary web site)

(2) Tools for S-104. TWCWG4 plan for S-104 tool : (One for TWCWG4? S-100WG input.)

**Briana Sullivan (UNH) S-126 update: S-126\_ S-111, S-104 :**

NIPWG and TWCWG main focus (scope of respective actions, + S-126 & S-101 issue)