



United Kingdom
Hydrographic Office

IHO TWCWG1 Meeting

DHN, Niteroi, Brazil, 25 – 29 April 2016

***S-112 Real Time Tidal Data Transfer
Presentation***

Chris Jones, UKHO



Introduction

- For many years there has been the wish to apply automatic tide / water level adjustment in an ECDIS
- The S-52 presentation library currently prohibits this (no change to soundings)
- IMO's "e-Navigation" concept.....
.....the harmonized collection, integration, exchange, presentation and analysis of marine information onboard and ashore by electronic means to enhance berth to berth navigation and related services for safety and security at sea and protection of the marine environment.



Background

- Initial Action for Real Time data transfer format relates to **HSSC5/54**
- “TSMAD” [now S-100 WG] to assist the “TWLWG” [now TWCWG] to develop a product specification for transfer of tidal [water level] data (heights).
- Potential to be used for generating dynamic water level as a “navigational surface” in ECDIS



Background

- UKHO S-100 representative developed a first draft Product Specification (PS)
- Looked at the **MPA (Singapore)** existing sample string using **Automatic Identification System (AIS)** messages.
- Developed to using the IMO-approved ***Meteorological and Hydrographic Data AIS Application Specific Message***
- DRAFT PS presented last year at TWLWG7 – 4.2.3



Meteorological and Hydrographic Data AIS Application Specific Message (ASM)

- AIS is mandated under International Convention SOLAS
- 2010 - AIS-specific messages are recommended in Guidance published by the MSC and IMO (**SN. 1/Circ. 289**)
- Of relevance here under the Meteorological and Hydrographic data are details of the Dynamic water level (and potentially Currents (surface and depth)).



Application Schema

- Feature
 - MetHydroDataAISMessage
- Requires further development
 - see draft PS page 11

«FeatureType» MetHydroDataAISMessage
+ messageID: text + repeatIndicator: real + sourceID: text + spare: text + IA1: IA1 + longitude: int + latitude: int + positionalAccuracy: real + timeStamp: TimeStamp + averageWindSpeed: real + windGust: real + windDirection: real + windGustDirection: real + airTemperature: real + relativeHumidity: real + dewPoint: real + airPressure: real + airPressureTendency: airPressureTendency + horizontalVisibility: real + waterLevelNoTide: real + waterLevelTrend: waterLevelTrend + surfaceCurrentSpeedNoTide: real + surfaceCurrentDirection: real + currentSpeed2: real + currentDirection2: real + currentMeasuringLevel2: real + currentSpeed3: real + currentDirection3: real + currentMeasuringLevel3: real + significantWaveHeight: real + wavePeriod: real + waveDirection: real + swellHeight: real + swellPeriod: real + swellDirection: real + seaState: seaState + waterTemperature: real + precipitationType: precipitationType + salinity: real + ice: ice + spareEndOfMessage: text

«Enumeration» airPressureTendency
steady decreasing increasing not available

«Enumeration» waterLevelTrend
steady decreasing increasing not available

«Enumeration» seaState
calm light air light breeze gentle breeze moderate breeze fresh breeze strong breeze near gale gale strong gale storm violent storm hurricane notAvailable reserved reserved for future use

«Enumeration» precipitationType
reserved rain thunderstorm freezing rain mixed/ice snow reserved for future use not available

«ComplexAttributeType» IA1
+ DAC: text + FI: text

«ComplexAttributeType» TimeStamp
+ UTCDay: real + UTCHour: real + UTCMinute: real

«Enumeration» ice
no yes reserved for future use not available



Areas of the PS that require discussion / further development

- 4.3.1 Feature Catalogue Introduction – Feature Attributes - draft PS pages 12-20
- 4.3.1 Feature Types – ‘Geographic’ (4.3.2.1) - *MetHydroDataAISMessage* could be subdivided into further feature types – draft PS page 21
- 4.6 Geometry – simple attribute *waterLevellncTide* – draft PS page 22



Areas of the PS that require discussion / further development

- 5 - Coordinate reference systems – draft PS page 23
- 6 – Data Quality – draft PS page 23
- 7 – Data Capture and Classification – draft PS page 23
- 8 – Maintenance – draft PS page 23
- 9 – Portrayal – draft PS page 24
- 11.2.2 – Dataset file naming – draft PS page 25



Areas of the PS that require discussion / further development

- 11.3 – Support Files – draft PS page 26
- Annex B - Informative Implementation Guidance and General Notes – draft PS page 32



Next Steps

- Worthy of note is Julia Powell's paper (NOAA, Chair S-100 WG)
"Interoperability of S-100 Product Specifications (S100WG-10.2A)"
- States that S-112 is one of the product specifications to be used in the interoperability model, the aim is "to determine how they will interoperate within a single system".

http://www.iho.int/mtg_docs/com_wg/S-100WG/S-100WG1/S100WG01-10.2A%20%20Interoperability%20Specification.pdf



Paper concludes with....

- *“As a result of a joint project between the Republic of Korea and NOAA a funding has been secured to contract out the initial drafting of this specification based on the above requirements.*
- *It is expected that a draft will be available for the September S-100 Test Strategy meeting for the working group to review and provide comments”.*



- At the last S-100WG meeting (March 2016) S-112 was only mentioned as part of the interoperability specification.
- Therefore there is a likely requirement for an S-112 Project Team under the S-100WG to progress the draft version of the product specification
- Resolve the “tbc”, “To be developed”, and “To be Discussed” etc.
- Likely to also be the case with other product specifications such as S-101, etc.
- S-112 PT would need to be approved at HSSC8 (?)