



National Oceanic and
Atmospheric Administration
U.S. Department of Commerce

IHO Geospatial Information Registry Proposals

NOAA S-104/S-111 team

7th Tides, Water Level and Currents Working Group (TWCWG7)

VTC

28 February – 2 March 2023



Overview



- DQWG pointed out a problem with the definition of the S-104 attribute *surfaceCurrentSpeed*. [TWCWG Action Requested – finalize a clarification.]



Domain	IHO Hydro
Name	Surface Current Speed
CamelCase	surfaceCurrentSpeed
Item Identifier	879 ?
Definition	Rate of motion. The terms speed and velocity are often used interchangeably, but speed is a scalar, having magnitude only, while velocity is a vector quantity, having both magnitude and direction. Speed may either be the ship's speed through water, or the speed made good over ground.
Data type	real



Domain	IHO Hydro
Name	Speed
CamelCase	speed
Item Identifier	252 ?
Definition	Rate of motion. The terms speed and velocity are often used interchangeably, but speed is a scalar, having magnitude only, while velocity is a vector quantity, having both magnitude and direction.
Data type	complex



- Request to add a time attribute to S-111 for non-uniform time interval data (analogous to S-104 *waterLevelTime*). [TWCWG A.R.: endorse proposal.]



«FeatureType» WaterLevel
+ waterLevelHeight: Real
+ waterLevelTrend: waterLevelTrend
+ waterLevelTime: DateTime [0..1]

«FeatureType» SurfaceCurrent
+ surfaceCurrentSpeed: Real
+ surfaceCurrentDirection: Real
+ surfaceCurrentTime: DateTime [0..1]



Attribute *surfaceCurrentSpeed*



- The IHO Registry Manager was consulted on the provenance of the existing definition and effects of change.
 - Probably copied from older version of GI Registry, further provenance unknown.
 - No reason not to revise it; apparently used only in S-111.
- Sources consulted
 - NOAA Tides and Currents glossary defines: "speed (of current)": The magnitude of velocity. Rate at which the current flows. Usually expressed in knots or centimeters per second.)
 - Hydrographic Dictionary (S-32 [1176]) defines "current: surface": A CURRENT that does not extend more than a few (2-3) METRES below the surface.
- Definition will be visible to developers, data production, and mariners on large commercial vessels as well as smaller recreational craft, if the latter choose to use S-111 datasets.





Attribute *surfaceCurrentSpeed* - 2



- A proposed revised definition was circulated to the project teams.
 - Feedback received from NOAA, NL, FR, AU
 - Existing definition: Rate of motion. (Etc. – slide 3).
 - Proposed definition 1: The magnitude of velocity of a current, measured or calculated at a standard depth close to the water surface.
 - Proposed definition 2: (Module?) of current velocity, measured or calculated at the water surface (surface : depth range is defined consistency with S-100 product **). Its units is a speed units: (knots in S-111 IHO-Product specification).
 - Proposed definition 3: (Module?) of current velocity, measured or calculated at the water surface (0 meter up to 3 meters depth). Its units is a speed units: (knots in S-111 IHO-Product specification).
- Considerations:
 - GI Registry may not agree to specifying a product in the definition.
 - Velocity is a vector quantity, speed a scalar quantity.
 - Minimize the chance for misinterpretation by mariners on both large commercial ships and small craft.



Attribute *surfaceCurrentSpeed* - 3



- Combining feedback – working draft for finalization by TWCWG (at this meeting, if possible).



Definition 1: **Magnitude¹ (or Value?) of current velocity at the water surface, measured or calculated at a depth (or range of depths) consistent with the data product.**



Definition 2: **Rate of flow of current, measured or calculated...etc.**



Remark: **Its units are the units of speed, for example knots.**



Source: **TWCWG**



¹ “Magnitude” is the correct word in English, but perhaps it gives the wrong impression to speakers of other languages?



- The revised definition will be submitted to the IHO GI Registry after TWCWG approval. S-100 WG approval is not needed, the Registry Manager and Domain Control Body will evaluate it.





Attribute *surfaceCurrentTime*



- The definition below was circulated to the Project Teams, and agreed to with one minor amendment (adding “Universal Time” in the Remark).



Definition: The time of the surface current data, expressed in ISO 8601 Date-time format.



Remark: Unit: Years, months, days, hours, minutes, seconds;
Resolution: 1 second. Example: 19850412T101530Z denotes 10 hours, 15 minutes, and 30 seconds Universal Time on 12 April 1985.



- In view of the registry processing time and the fact that this attribute does not exist at all (unlike *surfaceCurrentSpeed*), this definition has been submitted to the IHO GI Registry and is being processed.
- A proposal to clarify the Remark for *waterLevelTime* in the same way (insert “Universal Time”) has also been submitted.
- TWCWG endorsement is requested.

