Paper for Consideration by DQWG

Removing the contradictory encoding in Swept Areas and Deep Water Routes by replacing depth range minimum value with new attributes.

Submitted by:	USA
Executive Summary:	Possible new attributes for Swept areas and Deep Water Route
Related Documents:	S-101PT / S-101WG2-11.1D MAR 17 Clean.pdf
Related Projects:	S-101, IHO registry

Introduction / Background

At DQWG 11 there was a discussion about swept areas and deep water routes having to be encoded with a sacked quality of bathymetric data objects. This was a source of confusion and mostly because the attribute depth range minimum value must be encoded for both objects and be equal. An action to create replacement attributes for the depth attributes of swept areas and deep water routes was taken to remove the encoding confusion.

Analysis/Discussion

Options:
1. Do nothing and retain current encoding with current attributes.
2. Create the new attributes
   a. Swept depth for Swept Areas
   b. Deep Water Depth for Deep Water Route Parts and Deep Water Route Centrelines.
3. Create a new complex attribute called Depth Range that would include the following sub attributes: Depth range maximum value, Depth range minimum value, Swept Depth, and Deep Water Depth

Options 2 and 3 would require changes to S-101 and the DCEG. The changes would need the approval of the DQWG and S-100WG. Guidelines for the use of these attributes in the DCEG would need to be created by DQWG and forwarded to S-100WG.

Possible wording for DCEG for new attributes.

xx.x Swept Depth

> **Swept Depth:** IHO Definition: The determined, by sweeping least depth in an area or to insure that a given area is free from navigational dangers to a certain depth (kind of from S-32).
>
> **swept depth** defines the depth of a sweep area. (definition needed).
>
> Unit: Defined in the AXUM subfield of the CSAX record: metre (m)
>
> Resolution: 0·1m
>
> Format: sxxxxx.x
> s: sign, negative values only (is negative needed?)
>
> Example: **10** for a swept depth of 100 metres
>
> Remarks:
>   Where the area dries, the value is negative or zero (0). (Is this needed is there are no negative number?)

xx.x Deep water route depth

Deep Water Route Depth: IHO Definition: The minimum indicated depth of water of a designated area within defined limits which has been accurately surveyed for clearance of sea bottom and submerged obstacles. (S-32).

deep water route depth defines the safe depth of a deep water route.   (definition needed).

Unit: Defined in the AXUM subfield of the CSAX record: metre (m)

Resolution: 0·1m

Format: sxxxxx.x
s: sign, negative values only (is negative needed?)

Example: **10** for a swept depth of 100 metres

Remarks:
  Where the area dries, the value is negative or zero (0). (Is this needed is there are no negative number?)

Possible wording for DCEG for new complex attribute.

xx.x Depth Range.

Depth Range: IHO Definition: The range of vertical range of depth.

Indication:
Sub-attributes: **depth range maximum value** see clause X.X
                        depth range minimum value see clause X.X
                        swept depth see clause X.X
                        deep water depth see clause X.X
Remarks:
  No remarks.

Note that creating a complex attribute, depth range would affect many other objects that would require rewriting of the DCEG and S-101.

Conclusions
This is a draft to prompt a dissuasion for a conclusion.

Recommendations
Tentative recommendation is to move forward on option 2.

Action Required of DQWG
The DQWG is invited to:

- note and discuss on this paper
- agree with the recommendations
- prepare proposals for next S100WG