

Report from DQWG

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Executive Summary:	Report from DQWG
Related Documents:	NCWG2-08.6A, HSSC7-05.7A
Related Projects:	S-101

Introduction / Background

DQWG held its 10th meeting in July 2015 in Brest, France. The most important topic in the meeting was the data model for data quality in S-101 and the attribute describing the quality of bathymetric data.

Next meeting is held in May 10th-12th in Arlington (VA), USA.

Analysis/Discussion

The attribute QualityOfBathymetricData (QoBD) replaces the CATZOC attribute of S-57 in S-101. The biggest difference between the old and new attributes is the temporal aspect within QoBD. Another big difference is the possibility to assess the quality as Oceanic in cases where the HO considers the waters in question being adequately safe for navigation because of location far offshore even if the positional uncertainty, completeness or temporal conditions for are not met.

In DQWG10 the group rejected the idea of having just three classes of QoBD. The uncertainty range within each three classes would have been too wide to capture significant differences in quality, especially when the top quality class is wanted to be very strict for critical UKC instances.

The portrayal of CATZOC on ECDIS has been an issue for many years. The symbology used hasn't been well understood and it has been disliked and mostly been hidden from the view by the mariners. DQWG has previously discussed several portrayal methods which could be used. Sam Harper (UKHO) conducted a survey and also wrote a paper on the issue. Transparent colour overlay with traffic light colours was favoured at first, but later on it was realized that the method should be reserved for example for Under Keel Clearance (go-, slow go- and no go-areas).

The mariner should have the quality information readily available in intuitive manner especially in two use cases: First during the passage planning, (this might even include an automated check of vessel draft against the depth and related data quality), and secondly during a situation when the mariner must quickly deviate from planned route.

The paper NCWG2-08.6A discusses well about portrayal methods for QoBD with good reasoning. Of course the transition from 3+1 to 5+2 classes affects the available portrayal methods. Few comments on my personal behalf:

1. Ideas of corridor and magnifier class are refreshing and can reduce cluttering.
2. Coloured circles seem to work with 3+1 classes, no traffic lights though
3. Probably the one colour with transparency levels could take care of 5 classes, the other obvious option is to use gradual change from one colour to another if there are vacant non-traffic light colours
4. Pie chart examples clutter the display too much
5. Pie chart doesn't intuitively tell you if solid area within pie is good or bad.
6. Reverse density or reverse transparency is more intuitive: the clearer picture, the better quality
7. If QoBD areal meta feature is taken care of with this type of portrayal, can same or similar method be used with point or line features?

Conclusions

The portrayal of metadata such as data quality on nautical charts should be done in logical manner so that the mariner can intuitively perceive and understand the abstract concept of quality variation and use that understanding in decision making.

Recommendations

Action Required of NCWG

The NCWG is invited to:

- a. note the report
- b. discuss data quality visualisation aspects generally and in particular in the case of bathymetric data.
- c. liaise with DQWG in all matters regarding data quality in IHO standards.

The decision tree for the assessment of QualityOfBathymetricData
(uncertainty threshold values are to be determined in DQWG11)

