

8th HSSC MEETING

Monaco, 14-18 November 2016

Paper for Consideration by HSSC

Proposals for Visualizing Uncertainty of Bathymetric Data in S-101 ENCs

- Submitted by:** Germany
- Executive Summary:** The submitting MS tasked Fraunhofer Institute for Computer Graphics Research IGD, Rostock to develop proposals for the visualisation of data quality according to the classification proposed by DQWG. The resulting study is contained as Annex. It presents a practical approach to a longstanding but still unsolved problem for the implementation in future S-101 ENCs.
- Related Documents:** HSSC8-8.1B_Annex1_INFx
HSSC7-5.6A
[HSSC8-05.6A]
S-57, S-52 in current versions
- Related Projects:** NA

Introduction / Background

The existing solution to visualise the quality of survey by interpretation of the CATZOC attribute as coded in ENCs and other decision trees based on the embedded ENC characteristics never gained acceptance of the practice. The patchy patterns of stars do undue cover the chart display and aren't intuitive for interpretation by the mariner. Any proposed attempts to improve the situation by the C&SWG, DIPWG, NIPWG and finally NCWG within the last twenty years did not gain acceptance either. In view of the compelling need for the upcoming S-101 Next Generation ENC to present a concept to display data quality information based on up to date knowledge in graphical visualisation on computers, DE tasked the Fraunhofer Institute for Computer Graphics Research IGD, Rostock to develop generic proposals for the visualisation of data quality based on the classification proposed by DQWG.

Analysis / Discussion

The Fraunhofer experts reviewed the current solution and earlier alternative proposals systematically. Based on the regulations as given by S-52 for the design and the colours of the overall display of ECDIS and the classification of data quality as presented by the DQWG at HSSC7, the resulting proposal matches with the full range of the conditions for the

different colour schemes and accepted geometries in symbolisation. Implementation should be easy and the visual impression provides intuitive access to the forwarded information.

Conclusions

The concept itself is generic by nature and could be adapted if the underlying classification would be again subject to change. This paper is annexed by an excerpt of the study. The full study will be made available for NCWG and the S-101 project team for further consideration if HSSC endorses this.

Beyond the issue of the visualization of survey quality as pattern overlay to the 2D chart presentation of ECDIS, the study presents two further ideas how data quality could be intuitively be presented along a pre-planned route in a 3D-Mode. The implementation of this concept could be of interest for future ECDIS solutions as added feature to support safe passage.

Action required from HSSC

The HSSC is invited to:

- a. Note the paper
- b. Provide any recommendations to the affected Working Group and Project Teams respectively to consider the proposals of the study for the further standardisation of this subject.