

**13th Meeting of the IHO-Capacity Building Sub-Committee (CBSC13)
Mexico City, Mexico, 27-29 May 2015**

C-55 GIS Database Development with CATZOC Data

Submitted by:	IHB
Executive Summary:	The IHB is working towards expanding the information contained in the C-55 database to facilitate the determination of areas that are not adequately surveyed or charted and proposes that CATZOC information extracted from ENC's may be an important GIS layer to include in the C-55 GIS database.
Related Documents:	C-55
Related Projects:	

Introduction / Background

The purpose of IHO Publication C-55 is to provide base data for governments and supporting international organizations as they consider the best means by which to implement responsibilities set out in Chapter V, Regulation 9, of the Safety of Life at Sea (SOLAS) Convention. It also informs IHO input to the United Nations Global Maritime Assessment.

Analysis/Discussion/Conclusions

In order to improve the usefulness of C-55, the IHB have been working on expanding the information layers included in the C-55 databases. It is proposed that quality information extracted from ENC M_QUAL meta objects could provide useful information to supplement the current C-55 data. The CATZOC (Category of zone of confidence) attribute contain information which is intended to provide an assessment of the overall quality of bathymetric data. All areas of a cell containing depth data or bathymetry must be covered by one or more M_QUAL objects, which must not overlap.

The M_QUAL attribute "Category of Zone of Confidence" (CATZOC) contains the following quality values and seafloor coverage and typical survey characteristics.

- A1 - Full seafloor ensonification or sweep. All significant seafloor features detected and depths measured. (Controlled, systematic high accuracy Survey on WGS 84 datum; using DGPS or a minimum three lines of position (LOP) with multibeam, channel or mechanical sweep system).
- A2 - Full seafloor ensonification or sweep. All significant seafloor features detected and depths measured. (Controlled systematic survey to standard accuracy; using modern survey echosounder with sonar or mechanical sweep).
- B - Full seafloor coverage not achieved; uncharted features, hazardous to surface navigation are not expected but may exist. (Controlled, systematic survey to standard accuracy).
- C - Full seafloor coverage not achieved, depth anomalies may be expected. (Low accuracy survey or data collected on an opportunity basis such as soundings on passage).
- D - Full seafloor coverage not achieved, large depth anomalies may be expected. (Poor quality data or data that cannot be quality asses).
- U - Data not assessed

When CATZOC coverage data is used in conjunction with information (AIS, TSS, Ports, etc.), it constitutes a useful C-55 indicator. Figures 1, 2 and 3 below were generated using CATZOC information provided by the UKHO for test purposes.

Conclusion and Recommendation

It is proposed that CATZOC data could constitute a valuable C-55 GIS information layer, however full coverage data is required. It is therefore proposed that ENC producers should be invited to provide CATZOC data from their ENC's for use as a C-55 GIS resource.

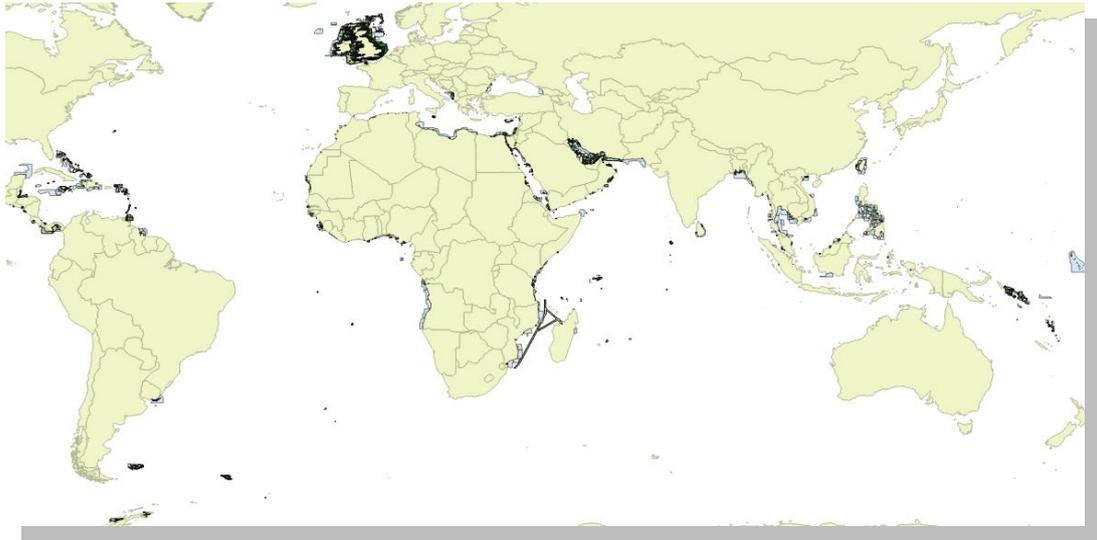


Figure 1 – Areas representing CATZOC values A1, A2, B, and C.

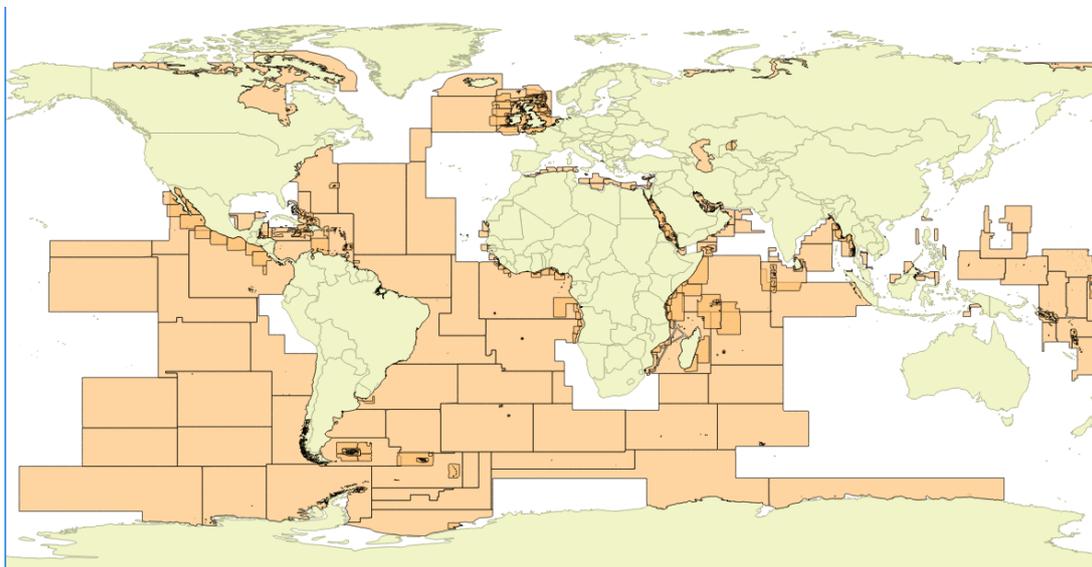


Figure 2 – Areas representing CATZOC value D.

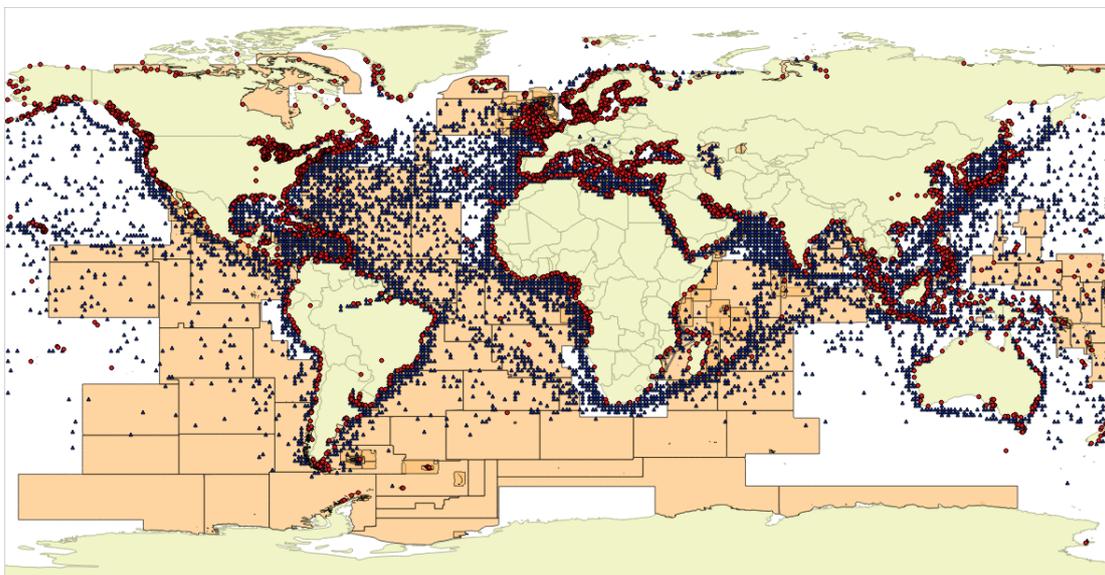


Figure 3 – Areas representing CATZOC values, tanker routes and port information.

Actions requested of CBSC:

1. **Note** this report
2. **Consider** the use of CATZOCs as a C-55 component
3. **Take** any other action as appropriate