

**21st IHO-TSMAD Meeting
Vancouver, Canada, 29th November - 3rd December 2010**

Paper for Consideration by TSMAD

Inclusion of M_QUAL on Small Scale ENC's

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| Submitted by: | TSMAD Chair |
| Executive Summary: | This paper considers whether population of M_QUAL on small scale ENC's is required. |
| Related Documents: | 1. S-100 |
| Related Projects: | 1. S-101 |

Introduction / Background

1. Discussion at joint TSMAD 20 DIPWG 2 agreed that the application of CATZOC to small scale ENC's needed review. This would affect both existing S-57 data and feed into S-101 for Future ENC's.

Analysis/Discussion

2. The object M_QUAL is mandatory in S-57 and is used to indicate to the user the confidence which there is in depth information. Unfortunately as most ENC's are captured directly from paper charts it is a time consuming process to capture detailed information. Therefore many producers use a blanket value for CATZOC covering an entire cell. In time this situation should improve as producers revisit ENC's to include this information. However if this information could be made optional on small scale charts much effort would be saved.

3. On paper charts the sources diagram is the equivalent of M_QUAL and due to the complexity of information to depict paper charts do not usually include sources diagrams.

S-4 States:

B-292 SCALES OF CHARTS WHICH SHOULD HAVE SOURCE DIAGRAMS

B-292.1 Regional differences make it inappropriate to specify precisely which scales of charts should always have Source diagrams. They are most useful on relatively large scales, particularly those with potentially hazardous rocky seabed areas, which have not been surveyed to modern standards, or areas of mobile seabed that have not been surveyed recently.

B-292.2 Charts of scale 1: 500 000 and larger should be considered for Source diagrams, special attention being paid to the largest coastal scales and those which carry routing measures.

4. Following this policy for ENC's would mean that on usage band 1 and 2 cells M_QUAL would not be mandatory. The justification for this would be that areas not covered by larger scales do not contain significant dangers and are not likely to cover areas where under keel clearance would be critical. The advantage of this approach would be that producers would avoid the need to capture M_QUAL for these cells.

5. The disadvantages of this approach would be;

- Inconsistencies between ENC's of different usage bands. The mariner would not be able to identify a CATZOC value for every leg of the intended voyage.
- In areas of varying data quality the mariner would not be aware of the quality of data and would have not opportunity to choose a route taking advantage of better surveyed areas.
- The mariner has no indicator of data quality, although a small scale paper chart has no sources diagram the distribution of soundings indicate the quality of surveys this is less clear in an equivalent ENC.

Conclusion

6. Quality information is a key part of ENC's however it is clear that on small scale cells the effort of capturing and encoding such information is disproportionate to the benefit it brings. This paper does not recommend that M_QUAL become optional on small scale ENC's. Our prime consideration should be that of the users experience and the lack of information and inconsistency allowed by this approach would degrade that. Clearly due to the resource required for HO's fully populating CATZOC will take time but that does not mean we shouldn't, we should strive to ensure we provide the user the best data and go beyond the paper chart in certain cases.

Action Required of TSMAD

7. Consider whether the disadvantages of making M_QUAL optional on small scale ENC's is justified by the effort saving this would deliver for HO's.