Paper for Consideration by TSMAD

Use of M_CSCL in S-101

Submitted by:	S-101 Work Item Leader
Executive Summary:	To consider the future use of M_CSCL in S-101
Related Documents:	S-101 Discussion Summary
Related Projects:	N/A

Introduction / Background

1. In S-57 the meta feature M_CSCL is used to represent data that is collected at a higher display scale within the same usage band. However, with the elimination of traditional usage bands and the restructuring of S-101 data along 12 optimum display scales, it has been questioned if there is a continued need for M_CSCL in S-101. This paper is intended to promote discussion on this topic and to come to a clear consensus on the use or disuse of M_CSCL and the way forward in the converting M_CSCL data in the S-57 converter.

Analysis/Discussion

2. In the initial drafts of S-101, M_CSCL has been omitted, however, in a discussion regarding display scale it was brought up by the chair of TSMAD that the working group has never discussed the future of this feature. As the concept of navigation purpose has changed and it was agreed to implement the standard radar ranges as both the optimum display scale of the ENC there has not been an apparent need to retain M_CSCL.

3. However, it was brought up that many Hydrographic Offices have a large amount of data that includes M_CSCL and that if it would be eliminated there needs to be a way of accommodating this data in S-101, without the cumbersome burden of re-scheming their entire suite of ENCs.

4. As a counter-point it was also brought up that currently, ECDIS has issues with handling the existing M_CSLS and whatever the decision is that this needs to be improved in S-101. For example the following points were raised by HSA.

    *   It's use can lead to data sets that perform very inefficiently in an ECDIS, e.g.
        when you have a very small scale cell that contains many high density large scale M_CSCLs.
    *   They lead to inconsistencies in the ECDIS display. An ECDIS will ordinarily turn off the display of a small scale chart when the view scale is at a large scale. This is not the case when an M_CSCL is encoded. To be able to view the M_CSCL at the compilation scale of the M_CSCL, the small scale data needs to be displayed as well, often leading to a grossly overscale display.
    *   The M_CSCL areas can be created as separate cells, making the ECDIS display more efficient and consistent.
    *   This doesn't mean that the smaller scale data need to contain holes. The holes can be filled with a generalised form of the large scale data that would otherwise have formed the M_CSCLs.

5. It also should be noted that the proposal is to remove the meta-feature, which would not affect the data contained within the feature. It would create a denser area of data where the application of SCAMIN would reduce the density on the ECDIS, therefore it would not affect data converted from S-57 to S-101 using the converter.

6. Recognizing that with the elimination of usage bands and the introduction of radar ranges, HO's will have to eventually issue a S-101 ENC that properly aligns to the standard, which would include setting both the optimum display scale and minimum display scale of the data and resolving the issue of existing M_CSCL data by either:

a. pulling the data out of the dataset and creating a new ENC and/or filling the hole in with generalized data

b. Leaving the denser data in the data set and setting SCAMIN to properly display.

Conclusions

7. It appears that leaving M_CSCL in S-101 would still carry over legacy issues that moving to the new range of display scales is supposed to resolve, but one can argue that there is so much legacy data that it would be worthwhile to leave M_CSCL alone. Noting that there will be a transition period to S-101, during that time, HO's will have to adjust their existing data to meet the new display scale parameter set in S-101, it does not make sense to retain a legacy feature that does nothing to improve the usability of data for the mariner.

8. The other consideration is that the S-101 converter will need to have instructions on how to convert existing M_CSCL data in order for it to display properly in and S-101 ECDIS.

Recommendations

9. It is recommended to eliminate M_CSCL for S-101 and to create business rules for data that will be at a higher density than the surrounding data as a result transition.

Action Required of [HSSC] [Relevant HSSC WG]

The TSMAD is invited to:

b. agree to the removal of M_CSCL for S-101

c. note the need for the S-101 converter to handle legacy M_CSCL data.