

Paper for Consideration by S-101PT

Proposal for an S-101 Educational Guidance document

Submitted by:	France, Australia, Germany, UKHO
Executive Summary:	It is proposed tasking the ENCWG to develop guidance documentation, enabling hydrographic offices to better understand the practical considerations of transitioning their S-57 Portfolio Schemes to S-101.
Related Documents:	S-101
Related Projects:	S-101

Introduction / Background

1. The first S-100 ECDIS should be available in 2026 and hydrographic offices (HOs) are preparing their transition to S-101.
2. S-101 brings major differences as compared to S-57 in terms of ENC scales, among which:
 - **Data Coverage** is a new concept introduced in S-101. S-101 Data Coverage will replace S-57 M_COVR (and M_CSCL);
 - **maximum display scale** and **minimum display scale** (Display scale range) will replace CSCL;
 - scale ranges that are limited to 6 intended usages in S-57 no longer exist in S-101.

These changes, in addition with the production of other S-100 products, potentially based on regular grids, lead all HOs to question and possibly revise their ENC portfolio: there is a need for a guidance document to help HOs analyse their ENC portfolio and make informed decisions regarding the conversion into S-101 and their future S-101 ENC production.

Analysis/Discussion

3. S-101 Product Specification already provides some information on S-101 dataset, **Data Coverage** and display scale range rules referring to the new scale concepts mentioned above. A specific clause also details the dataset loading and display on the ECDIS.
4. S-101 PS also provides guidance on how a dataset is compiled and how ENCs are displayed on the ECDIS, but not on how a complete ENC scheme can be developed.
5. Similarly, S-65 Annex B and future Annex C provide guidance on data conversion (S-57 \leftrightarrow S-101), but not on S-57 to S-101 scheme transition on a more global approach that would consider WEND principles.
6. Currently, some HOs have already started developing their future ENC schemes to incorporate S-101, and it does not appear to be straight forward, even for those that have been following the S-101 evolution from the start. Some questions linked to future ENC portfolio include:
 - How to determine S-101 display scale range considering S-57 Compilation scale?
 - How many (and which) display scale ranges in the S-101 ENC portfolio?
 - Use of multiple Data Coverages within an S-101 dataset?
 - Consideration of Optimum display scale within the display scale range.
7. As mentioned above, switching from 6 Intended Usages (INTUs) in S-57 to a non-standardized number of display scale ranges in S-101 is a major consideration for HOs. The question of setting Max and Min DS for each S-101 display scale range is fundamental, but not the only one. Having a different number of S-101 scale ranges than S-57 INTUs will also be a production issue: How to create and maintain both S-57 and S-101 ENCs from a unique database, whether in S-57 or S-101?
8. The timetable to produce the first S-101 ENCs is now very tight: to be in a position to produce their ENCs by 2026, the HOs need to start thinking about these issues now.

9. As an illustration, Shom has asked some HOs what are their plans in terms of future S-101 scale ranges (**maximum and minimum display scales**). The following table shows the answers received (the information provided by the HOs was informative only, as no definitive decision has been taken so far):

	MS1	MS2	MS3	MS4	MS5	MS6
Range	Max/Min DS	Max/Min DS	Max/Min DS	Max/Min DS	Max/Min DS	Max/Min DS
	IN RED: S-57 CSCL					
10 000 000						
3 500 000						
1 500 000	1 500 000					1 500 000
700 000				500 000		
350 000	350 000			499 999	500 000	350 000
180 000						
90 000	90 000				90 000	90 000
45 000					45 000	45 000
22 000	22 000				22 000	22 000
12 000					12 000	12 000
8 000	8 000					8 000
4 000					4 000	4 000
3 000						
2 000						
1 000						

10. The table shows that the HOs have different approaches, which is perfectly understandable as the portfolio are different in terms of scales and coverages.

11. HSSC15 (Action 15/54) has “tasked **NCWG** to work on S-11 Part A, Section 200 (to incorporate *S-101 Scheming Guidelines*) in liaison with **S-101PT**”. However, following the example of S-57 Scheming Guidelines in S-11, the addition of S-101 Scheming Guidelines in S-11 could remain very general.

Conclusion

It is proposed to task, as soon as possible, the ENCWG (Conversion Sub-Group) elaborate an educational guidance document (possibly as a new annex to S-65) to the attention of HOs, explaining the various concepts of scales and data coverage in S-101 and giving technical advice to convert its S-57 ENC portfolio in S-101, taking account of the Dual Fuel period.

Recommendations

The ENCWG is recommended to:

- Report to HSSC by correspondence that a need for an S-101 educational guidance document has been identified.
- Suggest tasking the ENCWG to develop this document as a new annex to S-65 as soon as possible.

Action Required of S-101PT

The ENCWG is invited to:

- a) Discuss this paper and its recommendations.