

Paper for Consideration by ENCWG5

Maximum accepted file sizes for ENC Base datasets and ENC Updates

Submitted by:	Australia (AHO)
Executive Summary:	In a dual-standard ECDIS scenario, the ENC service as a whole may benefit from allocating the same maximum permissible file sizes to base datasets and updates, irrespective of the standard used to produce them.
Related Documents:	S-57 Appendix B.1 – Product Specifications for ENC; S-57 Appendix B.1 Annex A UOC; S-58 ENC Validation Checks; S-101 ENC Product Specification.
Related Projects:	S-101PT

Introduction and Analysis

Although the overwhelming majority of the first S-101 datasets will be created by converting existing S-57 ENC products without further changes, some countries may decide using the opportunity and re-scheme some of their portfolio to better align the new products with the re-modelled S-101 'specificUsage' definitions. For example, HO's may decide to combine some overlapping NP4 - Approach and NP5 – Harbour data before migrating the data into a single S-101 'Port Entry' product.

This would not only better align the S-101 content with the new navigational purposes (specificUsage) definitions if not it will reduce data duplication and ENC maintenance times. The combination of two or more S-57 ENCs into one S-101 product will certainly increase the file size but this shouldn't be a problem considering that the maximum accepted ENC file has been increased from 5MB (S-57) to 10MB (S-101).

Those countries preferring not to amend their existing S-57 portfolio in preparation for the migration to S-101, will probably try to keep the S-57 extents and content as close as possible to its S-101 'twin'. This approach, although would facilitate their update and dual production, would end up unnecessary limiting the S-101 product file size to 5MB.

A similar way of thinking can be applied to ENC Updates' maximum file sizes.

The following paragraphs are extracts from the relevant charting standards:

S57 AppB1_ENC PS section 2.6Cells

The geographic extent of the cell must be chosen by the ENC producer to ensure that the resulting data set file contains no more than 5 Megabytes of data.

Note: It seems this PS requirement has been interpreted as a 'should' in S-58 because the associated validation check (# 502) has been categorised as an ERROR and not a CRITICAL ERROR.

S-57 Appendix B.1 Annex A UOC section 2.6 – Updating

- It has been reported that some ECDIS experience problems in loading large Update data sets. Therefore, as a guide, ENC Updates should not exceed 50 Kilobytes in size.

Note: No S-58 test exists to alert of non-compliances (WARNING).

S-101 ENC PS clause 4.5.4 Dataset size

Datasets must not exceed 10MB.

Update datasets should not normally be larger than 50kb and must not be larger than 200kb.

Conclusion

Increasing the maximum permissible file sizes of both, S-57 Base datasets and Updates, to match the figures proposed in the S-101 ENC PS would provide HO's more alternatives when planning their S-57 to S-101 migration, dual production and maintenance strategies.

Furthermore, having specific values (file sizes) included in the standards, positively contributes to the HOs decision making processes and workflows and removes 'grey areas' of interpretation when dealing with the RENCs.

Recommendations

- 1) The AHO is of the idea that, although S-57 PS cannot be amended without issuing a new MD, the proposed changes to ENC Base dataset file sizes should not have any negative impact on stakeholders (TBC by OEMs) and therefore they could be safely introduced and controlled by:
 - a) Adding the following paragraph at the end of **S-57 Appendix B.1 Annex A UOC section 2.1.7 – Cells**:
ENC Base datasets files should not be larger than 5 Megabytes and must not exceed 10 Megabytes.
 - b) Amending S-58 Validation checks as follows:

No	Check description	Check Message	Check solution	Conformity to:	Cat
502	If the cell file size is greater than 5 AND less than OR equal to 10 Megabytes.	The cell is larger than 5Mb but less than or equal to 10Mb in size.	Ensure that the cell is not larger than 5Mb.	Appendix B.1, Annex A (2.1.7)	E
502a	If the cell file size is greater than 10 Megabytes.	The cell is larger than 10Mb in size.	Ensure that the cell is not larger than 10Mb.	Appendix B.1, Annex A (2.1.7)	C

- 2) The proposed changes to ENC Updates file sizes can be implemented by:
 - a) Updating **S-57 Appendix B.1 Annex A UOC section 2.6 – Updating** as follows:
 - It has been reported that some ECDIS experience problems in loading large Update data sets. Therefore, ~~as a guide, ENC Updates should not normally be larger than 50kb and must not exceed 200kb.~~ **exceed 50 Kilobytes in size.**
 - b) Adding the following validation checks to S-58:

502b	If the ENC Update file size is greater than 50 AND less than OR equal to 200 Kilobytes.	The ENC Update is larger than 50Kb but less than or equal to 200Kb in size.	Ensure that the cell is not larger than 5Mb.	Appendix B.1, Annex A (2.6)	E
502c	If the ENC Update file size is greater than 200 Kilobytes.	The ENC Update is larger than 200Kb in size.	Ensure that the ENC Update is not larger than 200Kb.	Appendix B.1, Annex A (2.6)	C

Action Required of ENCWG

The ENCWG is invited to:

- a. discuss the relevance of the changes proposed by the AHO and
- b. incorporate changes into the next versions of S-57 Appendix B.1 Annex A UOC and S-58.