

## Paper for Consideration by ENCWG VTC 2022 Proposed Revision of S-58

<b>Submitted by:</b>	ENCWG S-58SubWG
<b>Executive Summary:</b>	This paper seeks approval of S-58 Draft Edition 7.0.0 for submission to HSSC.
<b>Related Documents:</b>	S-58 edition 6.1.0,S-58 Edition 7.0.0(redline), S-58 Edition 7.0.0 (clean) ENCWG6-9a ENCWG_VTC1-5.A
<b>Related Projects:</b>	-

### Introduction / Background

At ENCWG6 S-58 Edition 7.0.0 was provisional approved for submission to HSSC. Following ENCWG6 a mistake was identified with proposed checks 555a and 555b which has been corrected and included in the final draft and redline versions.

There are still a number of outstanding issues currently on the IHO ENCWG-S58 GitHub, 2 of which are listed below inclusion in this edition.

### Summary of Changes

1. Editorial changes to checks 555a and 555b

555a	If the order of the data in a base or update file is not correct, except for when: 1. Isolated nodes (SG2D) are listed before isolated nodes (SG3D) OR 2. Connected nodes are listed before isolated nodes (SG3D) OR 3. Connected nodes are listed before isolated nodes (SG2D) OR 4. <del>Meta</del> Geo features are listed before <del>geo</del> Meta features.	Incorrect data order.	Amend data order.	6.1.1	C
------	--	-----------------------	-------------------	-------	---

555b	If the order of the data in a base or update file is such that: 1. Isolated nodes (SG2D) are listed before isolated nodes (SG3D) OR 2. Connected nodes are listed before isolated nodes (SG3D) OR 3. Connected nodes are listed before isolated nodes (SG2D) OR 4. <b>GeoMeta</b> features are listed before <b>Metagee</b> features.	Incorrect data order.	Amend data order.	6.1.1	E
------	---	-----------------------	-------------------	-------	---

2. Proposed changes resulting from outstanding open GitHub issues:-

a. Modification of check 77 (ENCWG\_VTC1-5.A)

77	For each DEPCNT feature object which CROSSES another DEPCNT feature object. <i>Instances where the point of intersection is an intermediate vertex or node, and where one DEPCNT does not cross to the other side of the other DEPCNT, are excluded.</i>	DEPCNT objects cross.	Amend DEPCNT objects so they do not cross.	Logical consistency	C
----	--	-----------------------	--	---------------------	---

b. New check to identify records that exceed 99,999 bytes (ENCWG4-05.9)

It has been identified that ENC's containing features that reference > than 12499 spatial components do not load in some ECDIS. Whilst S-57 does not contain a limit to the number of spatial references within ISO 8211 the record length subfield is restricted to a length of 5. In reality, limits should be considered as follows; for sounding VRID records a limit of 8250 3D coordinates, 12375 2D coordinates for edge VRID records and 12375 for FRID records referencing edges.

The following generic check was originally proposed:-

xxxx	For each record check the DDR record length is not exceeded.	This record has more than the permitted number of references.	Reduce the number of references either through splitting the object or optimising the geometry	Part 3 (2.7)	C
------	--	---	--	--------------	---

Or alternatively the following specific checks could be considered :-

xxxx	For SG3D that contains > 8250 3D coordinates	Sounding bundle contains more than 8250 individual depths	Split sounding bundle	Part 3 (2.7)	E
xxxx	For SG2D that contains > 12375 2D coordinates	Edge contains more than 12375 coordinates	Split or optimise geometry	Part 3 (2.7)	E
xxxx	For FSPT that references > 12375 VRID records	FSPT record contains references to more than 12375 spatial records	Optimise geometry, merging referenced edges where possible	Part 3 (2.7)	E

## Conclusions

The inclusion of the proposed changes to S-58 will improve the clarity of the document.

## Recommendation

It is recommended that ENCWG approve the proposed changes in principal and task the ENCWG S-58SubWG to finalise the check wording for items 2a and 2b for submission to HSSC by 28<sup>th</sup> March 2022.

## Action Required of ENC WG

The ENCWG is invited to:

- a) Discuss and approve the proposed revisions and additional checks for inclusion in S-58.
- b) Endorse the submission of S-58 ENC Validation Checks Edition 7.0.0 for publication.
- c) Acknowledge the input from IC-ENC with regard to updating the S-58 Test Datasets