

Paper for Consideration by the < Transfer Standard Maintenance and Applications Development Working Group (TSMAD) and/or Digital Information Portrayal Working Group (DIPWG) >

S58 Edition 5.1.0

Submitted by:	TSMAD S-58 Sub WG
Executive Summary:	Proposed new edition 5.1.0 to accommodate changes to S-58
Related Documents:	http://www.iho.int/iho_pubs/draft_pubs/S-58_e5.0.0/Draft S-58_ENC_Validation_Checks_e5.0.0.pdf
Related Projects:	

Introduction / Background

A number of requests for correction to and clarification of the S58 5.0.0 checks have been received. These go beyond editorial changes and it is proposed that they form the basis of the next revision of S-58 (edition 5.1.0)

Analysis/Discussion/Conclusions

TSMAD S58 sub WG has proposed the following new test :-

98	For each object which is a master in a master/slave relationship AND references a slave object which does not exist.	Object references a slave that does not exist	Remove reference to non-existent slave	Logical consistency.	E
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In addition the UKHO has identified the following issues with the existing checks in the draft edition 5.0.0 of S-58.

1. T0052

From the definition of COINCIDENT a point feature cannot be coincident with a linear feature. Propose splitting into 2 tests one for linear features and one for point features,

2. T0057

The wording and logic of this test is ambiguous We propose splitting into to in order to clarify the intent.

57A Check that a COALNE is coincident with a LNDARE boundary or is WITHIN a LNDARE object of type area or is COINCIDENT with LNDARE objects on both sides.

57B Check that when COALNE is coincident with the boundary of a SLCONS object that the SLCONS has CONDTN=1 or 3 or 5.

3. T0076

Proposed to change wording from “For each DEPCNT object WITHIN a FLODOC, HULKES, LNDARE or PONTON object of type Area.” To “For each DEPCNT object that CROSSES a FLODOC, HULKES, LNDARE or PONTON object of type Area.

4. T0503 vs T0560A & B - duplication?

5. T0517e vs T1763 - duplication?

6. T0520C vs T0572 & T0573

UKHO proposes that T0520C is deleted and a new Test (T0574) is created that contains the wording:

Check Description – For all objects where NTXTDS is ‘notNull’ AND TXTDSC is ‘Null’ OR not present.

Check Message – Textual description in national language is populated without Textual Description.

Check Solution – Populate TXTDSC and include relevant Text file

7. We propose that T1502 should read:

For each object, except M_HOPA, or geometric primitive where the attribute HORDAT is present

Instead of:

For each feature object except M_HOPA where the attribute HORDAT is present

8. T1505 (ERROR, ref 2.1.2) and T1802 WARNING, Logical Consistency) are identical, if not in wording.

T1505 For each M_VDAT object where VERDAT is equal to the value of VDAT (Vertical Datum subfield) of the DSPM (Data Set Parameter field)

T1802 For each M_VDAT meta object where VERDAT is notNull AND equal to the value of VERDAT in the Vertical Datum subfield (VDAT) of the Data Set Parameter field (DSPM)

9. T1522a & T1523a – What are these checking for? Is it for compliance to ISO 8601:1998 or something else? Reference should also include Appendix B.1 5.7

10. T1653 What is this test checking for ?

11. T1672 This test does not make sense

Why would there be a LNDARE within another with the same attributes? WRECKS or OBSTRN - Yes

12. T1789 is a multiple object test for ORIENT errors:

For each object of type DWRTCL, NAVLNE, RECTRC and RCRTCL of type line where ORIENT is notNull AND the orientation of the spatial geometry is more than 5 degrees greater than or less than the value (or reciprocal) of the value of ORIENT.

This replicates:

T1681

For each RECTRC object of type line where ORIENT is notNull AND the direction of digitising is not greater than 5 degrees greater than or less than the value of ORIENT.

T1694

For each DWRTCL object where ORIENT is notNull AND TRAFIC equals (1),(2) or (3) AND the direction of digitising is not greater than 5 degrees greater than or less than the value of ORIENT.

T1696

For each RCRTCL where TRAFIC equals (1), (2) or (3) AND the direction of digitizing is not 5 degrees greater than or less than the value of ORIENT

13. T1785 has the wrong logic:

For each object with CATLMK = 18 [windmill] or 19 [windmotor] where CONDTN = 4 [wingless]. due to deleting not of type LNDMRK

14. T1790B The Check Solution does not agree with the UOC reference:

Remove LIGHTS object from C_AGGR collection object aggregation.

vs

Where the LIGHTS has attributes SECTR1 and SECTR2 populated, and/or there is an associated RECTRC and/or NAVLNE encoded, ORIENT for the LIGHTS must be populated with and empty (null) value.

15. T0541a is duplicated by test 1752.

Recommendations

A break out session during TSMAD28 of the S-58 sub working group be convened to discuss, review and re-word the S-58 checks listed with a view to inclusion in a new edition of S-58 Edition (5.1.0).

Action Required of TSMAD

TSMAD is invited to:

- a. Agree to the planned revision of S-58 post publication of edition 5.0.0
- b. Task the S-58 sub working group to prepare S-58 5.1.0 for submission to TSMAD 29 & HSSC 6

Annex A – S-58 Edition 5.0.0 Current wording as per draft edition 5.0.0

2.1 Checks relating to S-57 Data Structure					
No	Check description	Check message	Check solution	Conformity to:	Cat
52	For each LNDELV object of type point or line which is not WITHIN a LNDARE of type area AND is not COINCIDENT with a LNDARE of type line or point AND is not WITHIN a WRECK object of type area which is always dry WATLEV=2 or partially submerged WATLEV=1.	LNDELV object not situated on LNDARE or on a drying or partially submerged WRECK object.	Ensure LNDELV object is situated on a LNDARE or on a drying/partially submerged WRECK object.	Appendix B1, Annex A (4.7.2, 4.7.4, 6.1.1 and 6.2.1).	E
57	For each COALNE object which is not COINCIDENT with a LNDARE or SLCONS object with CONDTN=1 or 3 or 5 or is WITHIN a LNDARE object of type area or is COINCIDENT with LNDARE objects on both sides.	COALNE object not touching LNDARE or SLCONS or not WITHIN or touching LNDARE objects.	Ensure COALNE touches or lies WITHIN or touching LNDARE.	Logical consistency.	E
76	For each DEPCNT object WITHIN a FLODOC, HULKES, LNDARE or PONTON object of type Area.	DEPCNT WITHIN prohibited objects.	Amend DEPCNT to be WITHIN appropriate objects.	Logical consistency.	E
2.2 Checks relating to ENC Product Specification					
No	Check description	Check message	Check solution	Conformity to:	Cat
503	For each object If the FOID is not unique within this dataset.	Duplicate FOIDs exist within the dataset.	Ensure that no duplicate FOIDs exist.	3.1	W
517d	For a collection feature record which references another master feature.	Collection feature references another master feature.	Remove reference to a master feature.	3.9 and Appendix B1, Annex A (15), and Part 3 (6.2).	E
517e	For a collection feature where the RNID subfield is 3 [peer] which references features where RNID is not 3 [peer].	Collection feature which is peer references non-peer features.	Amend features to peer.	3.9 and Appendix B1, Annex A (15), and Part 3 (6.2).	E
541a	For all objects of type LIGHTS If CATLIT is EQUAL TO 1 [Fixed] AND SIGGRP is encoded.	SIGGRP is encoded for a fixed light.	Delete SIGGRP from fixed light.	Appendix A Ch.2 (code 141).	E
520c	For each attribute NINFOM, NTXTDS or NPLDST which are notNull where INFORM, TXTDSC or PILDST are Null or Not populated.	NINFOM, NTXTDS or NPLDST populated without corresponding value of INFORM, TXTDSC or PILDST.	Populate INFORM, TXTDSC or PILDST as required.	3.11 and 3.5.5	E
560a	For all objects with the same FOID where the object class and attribute values are not identical.	Objects with the same FOID are not identical.	Ensure objects with the same FOID have the same object class and attribute values.	3.1	C
560b	For all objects with the same FOID where the geometric primitives are of type Point OR are not of the same	Objects with the same FOID are of type point or have	Ensure point objects do not have the same FOID and that	3.1	C

	geometric primitive.	geometric primitives ofn a different type.	line and area objects which share FOIDs have the same geometric primitive type.		
572	For all objects where NINFOM is 'notNull' AND INFORM is 'Null' OR Or not present.	Information in national language is populated without Information.	Populate Information.	3.11.1	E
573	For all objects where NPLDST is 'notNull' AND PILDST is 'Null' OR Or not present.	Pilot district in national language is populated without Pilot district.	Populate Pilot district.	3.11.1	E
2.4 Checks relating to Use of the Object Catalogue for ENC					
No	Check description	Check message	Check solution	Conformity to:	Cat
1502	For each feature object except M_HOPA where the attribute HORDAT is present.	HORDAT used on an object.	Remove HORDAT.	2.1.1	E
1505	For each M_VDAT object where VERDAT is equal to the value of VDAT (Vertical Datum subfield) of the DPSM (Data Set Parameter field).	Value of VERDAT matches that in the VDAT subfield of the DPSM field.	Remove unnecessary value of VERDAT.	2.1.2	E
1512a	For each object of type SOUNDG which OVERLAPS more than one M_SDAT object.	SOUNDG object overlaps multiple M_SDAT objects.	Split SOUNDG object at boundary of M_SDAT objects.	2.1.3	E
1512b	For each object of where any of VALSOU, VALDCO, WATLEV, EXPSOU, DRVAL1 or DRVAL2 is notNull AND which OVERLAPS more than one M_SDAT object.	Object with depth information overlaps multiple M_SDAT objects.	Split object at boundary of M_SDAT objects.	2.1.3	E
1522a	If the file extension if ".000" AND the value of the UADT (Update application date) subfield of the DSID (Data Set Identification) field is incorrect.	Incorrect value of Update application date for a base cell.	Amend Update application date.	2.2.2	C
1522b	If the file extension is not ".000" AND the UADT (Update application date) subfield of the DSID (Data Set Identification) field is notNull.	Update application date is not NULL for an update.	Make Update application date NULL.	2.2.2	C
1523a	If the value of the ISDT (Issue date) subfield of the DSID (Data Set Identification) field is incorrect.	Issue date is incorrect.	Amend Issue date.	2.2.2	C
1523b	If the data set file name extension equals ".000" AND the ISDT (Issue date) subfield of the DSID (Data Set Identification) field is less than the value of the UADT (Update application date) subfield.	For a base data set the update application date falls before the issue date.	Amend update application date or issue date accordingly.	2.2.2	C
1653	For each SWPARE object WITHIN an M_QUAL object where SOUACC is notNull AND SOUACC on the M_QUAL object relates to all SOUNDINGS WITHIN it.	SOUACC on M_QUAL object does not apply to all SOUNDINGS it covers.	Amend SOUACC value on M_QUAL or remove.	5.6	E

1672	For each object of type point which is WITHIN an object of the same class AND which had the same attribute values AND is not of type LNDARE, WRECKS, or OBSTRN.	Object with the same attributes WITHIN an identical object.	Delete repeated object or amend attributes accordingly.	Logical consistency	E
1681	For each RECTRC object of type line where ORIENT is notNull AND the direction of digitising is not greater than 5 degrees greater than or less than the value of ORIENT.	RECTRC where ORIENT does not correspond to the direction of digitising.	Amend value of ORIENT.	10.1.1	C
1694	For each DWRTCL object where ORIENT is notNull AND TRAFIC equals (1),(2) or (3) AND the direction of digitising is not greater than 5 degrees greater than or less than the value of ORIENT.	One way DWRTCL where ORIENT does not correspond to the direction of digitising.	Amend value of ORIENT.	10.2.2.2	C
1696	For each RCRTCL where TRAFIC equals (1), (2) or (3) AND the direction of digitizing is not 5 degrees greater than or less than the value of ORIENT.	One way RCRTCL where ORIENT does not correspond to the direction of digitising.	Amend value of ORIENT.	10.2.4	C
1752	For each LIGHTS object where LITCHR is equal to (1) [fixed] AND SIGGRP, SIGPER or SIGSEQ are present.	SIGGRP, SIGPER or SIGSEQ present for LIGHTS object where LITCHR = (1) [fixed].	Remove SIGGRP, SIGPER or SEGSEQ, not applicable to fixed lights.	12.8.1	E
1762	For each RADRFL object which TOUCHES an object of type area or point having CONRAD as an allowable attribute.	Unnecessary RADRFL encoded.	Remove unnecessary RADRFL and encode CONRAD = 3 on the associated object.	12.12	E
1763	For each C_ASSO or C_AGGR object where the Relationship Indicator [RIND] subfield of the Feature Record to Feature object Pointer [FFPT] field is not (3) [peer].	Relationship Indicator field value for C_ASSO or C_AGGR not (3) [peer] Unnecessary RADRFL encoded.	Amend RIND subfield to (3) [peer].	15 and Appendix B.1 (3.9)	E
1785	For each object not of type LNDMRK AND with CATLMK = 18 [windmill] or 19 [windmotor] where CONDTN = 4 [wingless].	Object other than windmill or windmotor with CONDTN = 4 [wingless].	Remove value of CONDTN or use LNDMRK object.	Logical consistency.	E
1789	For each object of type DWRTCL, NAVLNE, RECTRC and RCRTCL of type line where ORIENT is notNull AND the orientation of the spatial geometry is more than 5 degrees greater than or less than the value (or reciprocal) of the value of ORIENT.	DWRTCL, NAVLNE, RECTRC or RCRTCL where the orientation of the geometry is not consistent with the value of ORIENT.	Populate an appropriate value of ORIENT consistent with the geometry of the object.	Logical consistency.	C
1790b	For each LIGHTS object where ORIENT is notNull AND it is aggregated to a RECTRC or NAVLNE within a collection object C_AGGR.	LIGHTS object where ORIENT and is aggregated within a C_AGGR collection object.	Remove LIGHTS object from C_AGGR collection object aggregation.	12.8.6.5 and 12.8.6.6	E

1802	For each M_VDAT meta object where VERDAT is notNull AND equal to the value of VERDAT in the Vertical Datum subfield (VDAT) of the Data Set Parameter field (DSPM).	M_VDAT object has the same value as I the VDAT subfield of the dataset header.	Delete unnecessary M_VDAT object	Logical consistency.	W
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