Testing S-58 Validation Checks Using Dedicated Test ENC Datasets

Introduction

The S-58 validation checks were originally developed to facilitate testing of the content and integrity of S-57 datasets. The checks were outlined using descriptive text however, no standardized testing software was developed to allow data producers to actually carry out testing of their products. As a result, different data production software manufacturers adopted the checks by interpreting their content and creating their own versions of validation tools.

To reduce ambiguity and improve the precision of the validation software, a group of 26 test datasets have been produced, each containing a variety of negative test case scenarios. As such, each test case scenario was developed incorporating intentional data errors aiming to trigger the corresponding S-58 errors thus allowing software manufacturers to confirm that their validation tools report errors correctly. Using the 26 datasets, 340 tests cases have been established to support systematic software testing.

The references for this initiative are as follows:

- 1) S58 Recommended ENC Validation Checks, Edition 4.2.0
- 2) IHO Transfer Standard for Digital Hydrographic Data, Edition 3.1
- 3) ENC Product Specification, Edition 2.0
- 4) Use of the Object Catalogue for ENC, Edition 3.0.0

Using S-58 Test Datasets

This document outlines the content of all 26 S-58 test datasets. It is organized into chapters, one for each dataset and its associated tests. A list of the tests is provided on the first page while a description of each test is listed in tabular format on subsequent pages. For each S-58 test a general test description is provided, followed by one or more test scenarios designed to trigger specific errors or warnings. The expected test results along with the expected secondary errors section are also provided. The secondary errors section is intended to list any additional errors which happen to be also triggered by the objects from each test case. The listing of secondary errors aims to facilitate easier cross referencing of errors when reviewing more than one test case scenario at a time or when reviewing cumulative test results for specific test number.

Please note that such secondary errors for the same S-58 check can appear in multiple sections of this document, since many different test case scenarios can trigger instances of the same type of secondary errors. For this reason it is advisable to search the entire document or the corresponding dataset chapter to determine the total count of specific error number when reviewing cumulative test results.

It is envisioned that the actual testing will be conducted in one of two ways: test case scenario centric or S-58 check centric. During the first approach, the test case scenario of interest should be reviewed closely and tested. The errors and/or warnings triggered should match those listed under both he the primary and the secondary test results. When testing using the second approach, the entire dataset section should be searched for any corresponding S-58 checks expected to be triggered by any of the test and the sum of all errors and/or warning should match the test results.

An example of one S58 test case, T0062, is below:

Dataset Name	AA500001	S-58 test No.	T0062		Туре	W	
S-58 Description	Check for all PONTON, HULKES or FLODOC objects of type Area that no edge of their limits shares the geometry of a line COALNE or SLCONS object, except when this edge also shares the geometry of a LNDARE object of type Area.						
Test Case No. 1	Captured PONTON, HULKES and F	LODOC areas bo	ounded by SLCO	NS and	COALN	E.	
Location	32°23'34.61"S 60°40'55.99"E	S57 Encoding	PONTON (A) HULKES (A) FLODOC (A) COALNE (L) SLCONS (L)	WATI	.EV = 2		
Screen Capture		0 ₁					
Expected test	T0062: Three warnings "coalne' b	•	-				
results	T0062: Three warnings "slcons' b						
Secondary Errors	T0057: Three additional warnings related to the feature objects cre		out land area" r	must b	e trigger	ed	

For this test, the corresponding test dataset AA500001 contains PONTON, HULKES and FLODOC areas bounded by SLCONS and COALNE as shown. As a result, for this case scenario six T0062 warnings should be reported by the validation software along with the three T0057 secondary errors. When looking for cumulative error totals, while testing AA500001 dataset, twelve T0062 and five T0057 warnings should be reported based on different case scenarios present this particular dataset. Additionally six T0057 warnings should be reported based on different case scenarios present in AA500003.

S-58 Test Datasets

Test Dataset: AA500001

List of S58 Recommended ENC Validation Checks covered in this section:

S58 Test	Description
43	Check that all DEPCNT objects coincide with a boundary of two Group 1 objects, except for cases where they appear within an UNSARE or DRGARE.
44	Check that all values (except the shallowest and deepest) DRVAL1 and DRVAL2 of DEPARE of type area are also values of VALDCO.
45	Check that no edge is shared by two or more line objects of the same object class, except for objects from the following list which may share geometry if they are populated with different attribute values: BERTHS, CBLOHD, CBLSUB, CONVYR, DWRTCL, FERYRT, MARCUL, MORFAC, NAVLNE, PIPSOL, RCRTCL, RECTRC.
50	Check that all the nodes that compose the geometry of any RECTRC with CATTRK=1 [based on a system of fixed marks], or NAVLNE are on a straight line.
51	Check that no edge is shared by a COALNE object and a SLCONS object of type line, or by a COALNE object and a SLCONS object of type area covered by a LNDARE, and having WATLEV undefined or encoded with the values (2) [always dry] or (1) [partly submerged at high water].
55	Check that no line or point LNDARE object is situated within a LNDARE object of type Area, except for cases where it is covered by a LAKARE, RIVERS, DOCARE, LOKBSN or CANALS object.
56	Check that any BUAARE object is covered by a LNDARE object of type Area, or is coincident with a LNDARE of type point.
57	Check for any COALNE object which does not share spatial geometry with a LNDARE or SLCONS object with CONDTN = 1 [under construction] or 3 [under reclamation] or 5 [planned construction], that it is not situated within a LNDARE object of type Area, or that it does not have a LNDARE object of type Area on both sides.
60	Check that no CBLSUB object is situated within a LNDARE object of type Area.
62	Check for any object with WATLEV = 3 [always under water/submerged]: if it is of type Line or Area, that: it is not within or overlaps an intertidal area (DEPARE with DRVAL2 ≤ 0), or it is not within or overlaps a LNDARE object of type Area, if it is of type Point, that: it is not within an intertidal area, or it is not within a LNDARE object of type Area, or it is not coincident with a LNDARE object of type point, or it is not situated on a LNDARE object of type line. Check for all PONTON, HULKES or FLODOC objects of type Area that no edge of their limits shares the geometry of a line COALNE or SLCONS
63	object, except when this edge also shares the geometry of a LNDARE object of type Area. Check that no RECTRC object overlaps or intersects a linear or area object LNDARE, PONTON, HULKES, FLODOC or any other object having
	WATLEV = 1 [partly submerged at high water] or 2 [always dry].
64	Check that no point or area ACHARE object (except with the value CATACH = 8 [small craft mooring area]) is situated within or overlaps another object with attribute RESTRN containing value 1 [anchoring prohibited].
65	Check that LIGHTS objects in the same spatial position whose sectors overlap each other have at least one of the values encoded differently for these attributes: CATLIT, EXCLIT, LITCHR, SIGPER or SIGGRP. Remark: This check must not be applied to LIGHTS objects with STATUS containing at least one of values 4 [not in use], 6 [reserved], 11 [extinguished].
67	Check that no object is duplicated (same class, same attribute description and same geometry).
70	Check that all line DEPARE objects coincide with a Group 1 boundary.
72	Check that no loop exists in the graph of hierarchical relationships (e.g. no master object is slave of its own slave).
74	Check for any floating DEPCNT object (i.e. does not share any edge with a Group 1 object) which is within an area DEPARE object, that DRVAL2 >VALDCO >DRVAL1. Remark: This check must only be applied if both DRVAL1 and DRVAL2 for the DEPARE object are encoded with explicit and different attribute values.
75	Check for any floating DEPCNT object (i.e. does not share any edge with a Group 1 object) which is within an area DRGARE object, that VALDCO > DRVAL1. Remark: This check must only be applied if DRVAL1 for the DRGARE object is encoded with an explicit value.

Dataset Name	AA500001	S-58 test No.	T0043	Type W				
S-58 Description		Check that all DEPCNT objects coincide with a boundary of two Group 1 objects, except for cases where they appear within an UNSARE or DRGARE.						
Test Case No. 1	Floating DEPCNT captured.							
Location	32°23'33.77"S 60°43'19.67"E							
Screen Capture	106							
Expected test results	T0043: A warning "depth contour with	T0043: A warning "depth contour without depth area" must be triggered.						
Secondary Errors	None							
Test Case No. 2	Depth contour captured inside dredge	d area.	.	_				
Location	32°23'35.36"S 60°43'27.65"E	S57 Encoding	DEPCNT DRGARE	VALDCO=20 DRVAL1=20				
Screen Capture	103							
Expected test results	T0043: A warning "depth contour with	out depth area" m	ust not be trigge	red.				
Secondary Errors	T0075: One additional warning: "depth must be triggered.	n contour value do	es not agree with	n surrounding 'drgare'"				
Test Case No. 3	Depth contour captured inside unsurve	eyed area.						
Location	32°23'31.56"S 60°43'26.23"E	S57 Encoding	DEPCNT UNSARE	VALDCO=1.8				

Screen Capture		1					
Expected test results	T0043: A warning "depth contour with	out depth area" m	ust not be trigger	red.			
Secondary Errors	None						
		1					
Dataset Name	AA500001	S-58 test No.	T0044	Туре	W		
S-58 Description	Check that all values (except the shallo area are also values of VALDCO.	Check that all values (except the shallowest and deepest) DRVAL1 and DRVAL2 of DEPARE of type area are also values of VALDCO.					
Test Case No. 1	Depth area captured for which there is	no depth contour	equal to DRVAL2				
Location	32°23'39.01"S 60°43'26.57"E	S57 Encoding	DEPARE	DRVAL1=9.1 DRVAL2=18.2			
Screen Capture	4 ₈ 2 ₁ 3 ₃ 3 ₉						
Expected test results	T0044: A warning "value of 'drval1' not T0044: A warning "value of 'drval2' not			00			
Secondary Errors	None						
Dataset Name	AA500001	S-58 test No.	T0045	Туре	W		
S-58 Description	Check that no edge is shared by two or more line objects of the same object class, except for objects from the following list which may share geometry if they are populated with different attribute values: BERTHS, CBLOHD, CBLSUB, CONVYR, DWRTCL, FERYRT, MARCUL, MORFAC, NAVLNE, PIPSOL, RCRTCL, RECTRC.						
Test Case No. 1	Two SLCONS (L) objects with same edg	e were captured.					
Location	32°23'36.41"S 60°42'45.01"E	S57 Encoding	SLCONS (L) SLCONS (L)	CATSLC=6 WATLEV=2 WATLEV=2			

Screen Capture				
Expected test results	T0045: A warning "edge is shared by twattribute values" must be triggered.	vo linear objects of	f the same class 's	slcons' with different
Secondary Errors	None			
Test Case No. 2	BERTHS, CBLOHD, CBLSUB, CONVYR, D RCRTCL, RECTRC objects captured with			
Location	All objects except DWRTCL are at 32°23'03.63"S 60°40'59.84"E. DWRTCL is at 32°22'21.55"S 60°43'26.88"E.	S57 Encoding	BERTHS (L) BERTHS (L) CBLOHD (L) CBLOHD (L) CBLSUB (L) CONVYR (L) CONVYR (L) DWRTCL (L) DWRTCL (L) FERYRT (L) MARCUL (L) MORFAC (L) NAVLNE (L) NAVLNE (L) PIPSOL (L) PCRTCL (L) RCRTCL (L) RECTRC (L) RECTRC (L)	OBJNAM=A OBJANM=B VERCLR=12 VERSCA=UNKNOWN VERCLR=10 VERSCA=UNKNOWN CATCBL=empty CATCBL=1 VERCLR=12 VERCLR=10 TRAFIC=3 TRAFIC=4 CATFRY=1 CATFRY=2 CATMFA=1 CATMFA=2 CATMOR=1 CATMOR=2 CATNAV=UNKNOWN CATNAV=1 CATPIP=empty CATPIP=6 OBJNAM=A OBJNAM=B TRAFIC=3 TRAFIC=4

Screen Capture	N. N.		2,	00 deg 3		
Expected test results	T0045: A warning "edge is shared by twattribute values" must not be triggered	-	the same class 's	slcons' with different		
Secondary Errors	None					
Dataset Name	AA500001	S-58 test No.	T0050	Type W		
S-58 Description	Check that all the nodes that compose the geometry of any RECTRC with CATTRK=1 [based on a system of fixed marks], or NAVLNE are on a straight line.					
Test Case No. 1	Navigation line and recommended trac	k not captured as	straight line.			
Location	32°23'42.74"S 60°41'30.46"E	S57 Encoding	NAVLNE RECTRC	CATNAV=3 ORIENT=55 CATTRK=1 ORIENT=55 TRAFIC=3		
Screen Capture	0355 083	? 66s V6s				
Expected test results	T0050: A warning "'navlne' does not for T0050: A warning "'rectrc' does not for					
Secondary Errors	None					
			T			
S-58 Description	AA500001 Check that no edge is shared by a COA COALNE object and a SLCONS object of undefined or encoded with the values	type area covered	l by a LNDARE, ar	nd having WATLEV		
Test Case No. 1	Coast line and shoreline construction li			<u> </u>		
Location	32°22'24.92"S 60°42'58.86"E	S57 Encoding	COALNE (L) SLCONS (L)	WATLEV=2		

Screen Capture		03		
Expected test results	T0051: A warning "edge is shared by a	COALNE and a line	SLCONS" must b	e triggered.
Secondary Errors	None			
Test Case No. 2	Shoreline construction area captured	over land area and		ast line.
Location	32°22'25.63"S 60°42'58.54"E	S57 Encoding	COALNE (L) SLCONS (A)	WATLEV=1
Screen Capture		03		
Expected test results	T0051: A warning "no edge should be by a LNDARE" must be triggered.	shared by a COALN	E and an area SLO	CONS, which is covered
Secondary Errors	None			
Test Case No. 3	Shoreline construction area captured	over land area and		t line.
Location	32°22'26.55"S 60°42'58.21"E	S57 Encoding	COALNE (L) SLCONS (A)	WATLEV=2
Screen Capture		03		
Expected test results	T0051: A warning "edge should be sha a LNDARE" must be triggered.	ared by a COALNE a	nd an area SLCO	NS, which is covered by
Secondary Errors	None			

Test Case No. 4	Shoreline construction area captured o	ver land area and b	oounded by coas	t line.	
Location	32°22'27.17"S 60°42'57.87"E	S57 Encoding	COALNE (L)		
			SLCONS (A)	WATLEV=undef	ined
Screen Capture	0.				
Expected test results	T0051: A warning "edge should be shar a LNDARE" must be triggered.	ed by a COALNE ar	nd an area SLCON	IS, which is covere	ed by
Secondary Errors	None				
			1		
Dataset Name	AA500001	S-58 test No.	T0055	Туре	W
S-58 Description	Check that no line or point LNDARE obj for cases where it is covered by a LAKA	RE, RIVERS, DOCAR	-		except
Test Case No. 1	LNDARE (P) & LNDARE (L) captured on I	LNDARE (A).	1	T	
Location	32°23'36.67"S 60°40'38.65"E	S57 Encoding	LNDARE (A) LNDARE (P) LNDARE (L)		
Screen Capture	•				
Expected test results	T0055: 2 warning "object within prohib	ited area <land ar<="" th=""><th>ea>" must be trig</th><th>ggered.</th><th></th></land>	ea>" must be trig	ggered.	
Secondary Errors	None				
Test Case No. 2	LNDARE (L & P) inside a LAKARE area.				
Location	32°23'43.21"S 60°40'38.94"E	S57 Encoding	LAKARE (A) LNDARE (L) LNDARE (P)		

Screen Capture				
Expected test results	T0055: A warning "object within prohi	bited area" must n	ot be triggered.	
Secondary Errors	None			
Test Case No. 3	LNDARE (L & P) inside RIVERS area			
Location	32°23'40.30"S 60°40'45.62"E	S57 Encoding	RIVERS (A) LNDARE (L) LNDARE (P)	
Screen Capture				
Expected test results	T0055: A warning "object within prohi	bited area" must n	ot be triggered.	
Secondary Errors	None			
Test Case No. 4	LNDARE (L & P) inside DOCARE			
Location	32°23'41.91"S 60°40'42.25"E	S57 Encoding	DOCARE (A) LNDARE (L) LNDARE (P)	
Screen Capture		0		
Expected test results	T0055: A warning "object within prohi	bited area" must n	ot be triggered.	
Secondary Errors	None			
	I			

Test Case No. 5	LNDARE (L & P) are captured inside	LOKBSN.					
Location	32°23'45.60"S 60°40'33.96"E	S57 Encoding	LOKBSN (A) LNDARE (L) LNDARE (P)				
Screen Capture							
Expected test results	T0055: A warning "object within pr	ohibited area" must n	ot be triggered.				
Secondary Errors	None						
Test Case No. 6	LNDARE (L & P) inside CANALS.						
Location	32°23'39.20"S 60°40'49.22"E	S57 Encoding	CANALS (A) LNDARE (L) LNDARE (P)				
Screen Capture		0 ₃ 0 ₁					
Expected test results	T0055: A warning "object within pr	ohibited area" must n	ot be triggered.				
Secondary Errors	None						
	1		T =====		1		
Dataset Name	AA500001	S-58 test No.	T0056	Туре	W		
S-58 Description	Check that any BUAARE object is co	Check that any BUAARE object is covered by a LNDARE object of type Area, or is coincident with a LNDARE of type point.					
Test Case No. 1	A BUAARE area and point are captured in a depth area.						
Location	32°23'21.91"S 60°40'58.16"E	S57 Encoding	BUAARE (A & P)				

Screen Capture	0				
Expected test results	T0056: Two warnings "object is not cov	vered by a mandato	ory 'Indare'" must be tr	iggered.	
Secondary Errors	None				
		Г	T		
Dataset Name	AA500001	S-58 test No.	T0057	Туре	W
S-58 Description	Check for any COALNE object which do object with CONDTN = 1 [under constru- construction], that it is not situated wit a LNDARE object of type Area on both:	uction] or 3 [under hin a LNDARE obje	reclamation] or 5 [plan	nned	
Test Case No. 1	COALNE captured within a LNDARE are	a.			
Location	32°23'47.09"S 60°40'58.42"E	S57 Encoding	COALNE (L) LNDARE (A)		
Screen Capture					
Expected test results	T0057: A warning "coast line without la	and area" must be	triggered.		
Secondary Errors	None				
Test Case No. 2	COALNE between two LNDARE areas.				
Location	32°23'47.26"S 60°40'58.12"E	S57 Encoding	COALNE (L) LNDARE (A)		

Screen Capture					
Expected test results	T0057: A warning "coast line with two	and areas" must b	e triggered.		
Secondary Errors	None				
Dataset Name	AA500001	S-58 test No.	T0060	Туре	W
S-58 Description	Check that no CBLSUB object is situated	d within a LNDARE	object of type Area.		
Test Case No. 1	A submarine cable is captured overlapp	oing a LNDARE (A).			
Location	32°22'13.74"S 60°43'09.53"E	S57 Encoding	CBLSUB (L) LNDARE (A)		
Screen Capture	03	03			
Expected test results	T0060: A warning "object within prohib	oited area" must be	e triggered.		
Secondary Errors	None				
Dataset Name	AA500001	S-58 test No.	T0061	Туре	W
S-58 Description	 Check for any object with WATLEV = 3 if it is of type Line or Area, that it is not within or overlaps and it is not within or overlaps and if it is of type Point, that: it is not within an intertidal and it is not within a LNDARE objection. it is not coincident with a LNI it is not situated on a LNDAR 	t: intertidal area (DI LNDARE object of t rea, or ect of type Area, o DARE object of typ	EPARE with DRVAL2 ≤ 0 type Area, r e point, or), or	
Test Case No. 1	OBSTRN (L) captured in intertidal area OBSTRN (L) captured on land area OBSTRN (P) captured in intertidal area	., 2,,,,			

	OBSTRN (P) captured on LNDARE	/A\		
	OBSTRN (P) captured on LNDARE			
	OBSTRN (P) captured on LNDARE	• •		
	OBSTRN (A) captured on LNDARE			
	OBSTRN (A) captured over interti			
	Comment (C.) captained over interest	<u> </u>	OBSTRN (L)	WATLEV=3
Location	32°23'45.48"S 60°40'59.79"E	S57 Encoding	OBSTRN (A)	WATLEV=3
		and amount	OBSTRN (P)	WATLEV=3
Screen Capture				
Expected test results	T0061: Eight warnings that "unde	rwater object in interti	dal area or land a	rea" must be triggered.
Secondary Errors	None			
•				
Dataset Name	AA500001	S-58 test No.	T0062	Type W
Dataset Name				- 7
		FLODOC abjects of two	a Araa +ba+ na aa	lan of their limite chares
S-58 Description	the geometry of a line COALNE of geometry of a LNDARE object of the	SLCONS object, except		lge of their limits shares also shares the
S-58 Description Test Case No. 1	the geometry of a line COALNE or	SLCONS object, except Type Area.	when this edge a	also shares the
-	the geometry of a line COALNE or geometry of a LNDARE object of t	SLCONS object, except Type Area.	when this edge a	also shares the
Test Case No. 1	the geometry of a line COALNE of geometry of a LNDARE object of the Captured PONTON, HULKES and I	SLCONS object, except type Area. FLODOC areas bounded	by SLCONS and C PONTON (A) HULKES (A) FLODOC (A) COALNE (L)	COALNE.
Test Case No. 1 Location	the geometry of a line COALNE or geometry of a LNDARE object of the Captured PONTON, HULKES and for the Second Ponton of the Captured Ponton, HULKES and for the Captured Ponton, Hulkes and Fonton, Hulkes and F	SSCONS object, except type Area. CODOC areas bounded S57 Encoding O1 12	by SLCONS and C PONTON (A) HULKES (A) FLODOC (A) COALNE (L) SLCONS (L) flect" must be trigect" must be trige	gered.
Test Case No. 1 Location Screen Capture	the geometry of a line COALNE of geometry of a LNDARE object of the Captured PONTON, HULKES and Be see 23'34.61"S 60°40'55.99"E	SSLCONS object, except type Area. CLODOC areas bounded S57 Encoding O1 12 Dounds a prohibited object of the counds a prohibited object of the cound of the counds a prohibi	by SLCONS and C PONTON (A) HULKES (A) FLODOC (A) COALNE (L) SLCONS (L) lect" must be trigged area" must be trigged area"	gered. gered. triggered related to the

	ONTON (A) bounded by SLCONS and o			ıF
	Captured HULKES (A) bounded by COA Captured HULKES (A) bounded by SLCO	_	•	
	Captured FLODOC (A) bounded by COA			
	Captured FLODOC (A) bounded by SLC			
			PONTON (A)	
			HULKES (A)	
Location	32°23'34.50"S 60°41'01.21"E	S57 Encoding	FLODOC (A)	
			COALNE (L))
			SLCONS (L) LNDARE	WATLEV = 2
Screen Capture	12			
Expected test results	T0062: Three warnings "'coalne' bound T0062: Three warnings "'slcons' bound	-		
Secondary Errors	None			
Dataset Name	AA500001	S-58 test No.	T0063	Type E
S EQ Description	Check that no RECTRC object overlaps HULKES, FLODOC or any other object h			
S-58 Description	[always dry].	iavilig WAILEV = 1	that the submitted ge	tu at iligii waterj Ur Z
Test Case No. 1	Recommended track captured overlap	ping LNDARF. PON	TON, HULKES, FL	ODOC and SLCONS.
		F 6 E. 157 (112, 1 011	SLCONS (A)	
			SLCONS (A)	WATLEV = 1
			RECTRC (L)	WATLEV = 2
			LNDARE (A)	
Location	32°23'40.46"S 60°42'27.51"E	S57 Encoding	PONTON (A)	
	52 23 10.10 3 00 42 27.131 2	207 20048	HULKES (A)	
			FLODOC (A)	
			LNDARE (L)	
			PONTON (L) FLODOC (L)	
		1	I LODOC (L)	

Screen Capture		*			
Expected test results	T0063: Two errors "object overlaps the T0063: An error "object overlaps the pu	prohibited 'slcons' prohibited 'ponton' prohibited 'flodoc	" must be trigger n'" must be trigge " must be trigge	red. ered. red.	
Secondary Errors	None				
					T
Dataset Name	AA500001	S-58 test No.	T0064	Туре	W
S-58 Description	Check that no point or area ACHARE obmooring area]) is situated within or overalle 1 [anchoring prohibited].				ing
Test Case No. 1	Anchorage area and point objects capt	ured overlapping w	ith restricted are	ea.	
Location	32°23'45.56"S 60°43'15.85"E	S57 Encoding	ACHARE (P) ACHARE (A) RESARE (A)	RESTRN = 1	
	2,				
Screen Capture	J J				
Screen Capture Expected test results	T0064: Two warnings "object is covered	d by prohibited 'res	sare''' must be tri	ggered.	
·	T0064: Two warnings "object is covered None	d by prohibited 'res	sare'" must be tri	ggered.	
Expected test results			sare'" must be tri	ggered.	

Screen Capture	2,							
Expected test results	T0064: A warning "object is covered by	prohibited 'resare	e'" must not be t	riggered.				
Secondary Errors	None							
Dataset Name	AA500001	S-58 test No.	T0065	Type W				
S-58 Description	least one of the values encoded differe SIGGRP. Remark: This check must not be applie values 4 [not in use], 6 [reserved], 11 [Check that LIGHTS objects in the same spatial position whose sectors overlap each other have at least one of the values encoded differently for these attributes: CATLIT, EXCLIT, LITCHR, SIGPER or						
Test Case No. 1	Two lights captured with same attribut	tes but different se						
Location	32°23'34.89"S 60°43'16.29"E	S57 Encoding	LIGHTS	COLOUR=1 LITCHR=2 SECTR1=130 SECTR2=220 SIGGRP=(2) SIGPER=6 COLOUR=1 LITCHR=2 SECTR1=130 SECTR2=320 SIGGRP=(2) SIGPER=6				
Screen Capture	27							
Expected test results	T0065: A warning "sector conflict in lig	hts" must be trigge	ered.					
Secondary Errors	None							
Test Case No. 2	Eight lights (each 2 lights placed at san	an location with ov	orlanning coctor	s) with difference in				

	attributes: CATLIT, EXCLIT, LITCHR, SIGI	PER and SIGGRP.				
Location	32°23'34.27"S 60°43'11.63"E	S57 Encoding	LIGHTS	CATLIT CATLIT EXCLIT EXCLIT LITCHF SIGGRI SIGGRI SIGPEF STATU STATU STATU STATU STATU	=13 =2 =3 R=2 R=3 P=(2) P=(3) R=4 R=6 S=4 S=6 S=6 S=11	
Screen Capture	33					
Expected test results	T0065: 8 warnings "sector conflict in lig	ghts" must not be t	triggered.			
Secondary Errors	None					
Dataset Name	AA500001	S-58 test No.		T0067	Туре	W
S-58 Description	Check that no object is duplicated (sam	ne class, same attri	bute description	and sam	e geome	etry).
Test Case No. 1	Two cable areas captured with same ge	eometry, same clas	ss and same attri	butes.		
Location	32°23'45.85"S 60°42'33.35"E	S57 Encoding	CBLARE (A)	CATCB	L=1	
Screen Capture		,				
Expected test results	T0067: A warning "identical to 'cblare'"	' must be triggered	d.			
Expected test results Secondary Errors	T0067: A warning "identical to 'cblare" None	' must be triggered	i.			

Dataset Name	AA500001	S-58 test No.	T0070		Туре	Е
S-58 Description	Check that all line DEPARE objects coin	cide with a Group	1 boundary.			
Test Case No. 1	Linear depth area object captured insid	de a depth area.				
Location	32°23'45.20"S 60°41'18.43"E	S57 Encoding	DEPARE (L)			
Screen Capture						
Expected test results	T0070: An error "linear 'depare' not be	tween TG1 objects	" must be trigger	ed.		
Secondary Errors	None					
Dataset Name	AA500001	S-58 test No.	T0072		Type	W
S-58 Description	Check that no loop exists in the graph of its own slave).	of hierarchical rela	tionships (e.g. no	master	object is	slave
Test Case No. 1	Circular master-slave relation created I	petween 3 LIGHTS.				
Location	32°23'39.65"S 60°41'30.07"E	S57 Encoding	LIGHTS (3x)			
Screen Capture						
Expected test results	T0072: Three warnings "circular depen					
Secondary Errors	T0517: Three additional errors "there i others must be slaves" must be trigger				ı reature	– ali
Dataset Name	AA500001	S-58 test No.	T0074		Tues	 -
Dataset Name	Check for any floating DEPCNT object (Group 1	Type	E which is
S-58 Description	within an area DEPARE object, that DR' Remark: This check must only be applie encoded with explicit and different att	VAL2 >VALDCO >DI ed if both DRVAL1 a	RVAL1.	-		

Test Case No. 1	Captured floating depth contour w	hose values is not witl	hin the limits of	f surrounding depth	area.
Location	32°23'46.28"S 60°42'44.72"E	S57 Encoding	DEPCNT DEPARE	VALDCO=1.8 DRVAL1=3.6 DRVAL2=5.4	
Screen Capture	42				
Expected test results	T0074: An error "depth contour va triggered.	lue does not agree wit	th surrounding	'depare'" must be	
Secondary Errors	T0043: One additional warning "de the feature objects created.	pth contour without o	depth area" mu	st be triggered relat	ted to
			<u> </u>		T
Dataset Name	AA500001	S-58 test No.	T0075	Туре	W
	Charleton and flanting DEDCNT alsi	. /• 1 . 1	1 1.1		
S-58 Description	Check for any floating DEPCNT object, that within an area DRGARE object, that Remark: This check must only be a explicit value.	t VALDCO > DRVAL1. oplied if DRVAL1 for th	ne DRGARE obj	ect is encoded with	an
S-58 Description Test Case No. 1	within an area DRGARE object, that Remark: This check must only be a	t VALDCO > DRVAL1. oplied if DRVAL1 for th	ne DRGARE obj	ect is encoded with	an
	within an area DRGARE object, that Remark: This check must only be a explicit value. Captured floating depth contour w	t VALDCO > DRVAL1. oplied if DRVAL1 for th	ne DRGARE obj	ect is encoded with	an
Test Case No. 1	within an area DRGARE object, that Remark: This check must only be a explicit value. Captured floating depth contour warea.	t VALDCO > DRVAL1. pplied if DRVAL1 for the hose values is not with	ne DRGARE objuicts of DEPCNT	ect is encoded with f surrounding dredge	an
Test Case No. 1 Location	within an area DRGARE object, that Remark: This check must only be a explicit value. Captured floating depth contour warea. 32°23'35.32"S 60°43'27.49"E	t VALDCO > DRVAL1. poplied if DRVAL1 for the hose values is not with S57 Encoding	hin the limits of DEPCNT DRGARE	ect is encoded with a fourtounding dredge VALDCO=20 DRVAL1=20	an

Test Dataset:AA500002

List of S58 Recommended ENC Validation Checks covered in this section:

S58 Test	Description
54	Check for any CRANES, BUISGL, FORSTC, LNDMRK or SILTNK object, and for any DAYMAR object which is not a slave in a master/slave
	relationship: • if it is of type Area, that it is covered by a LNDARE, BRIDGE, FLODOC, OFSPLF or PONTON object of type Area,
	if it is of type Point, that:
	 it is situated within a LNDARE, BRIDGE, FLODOC, OFSPLF or PONTON object of type Area, or it is coincident with one LNDARE, PILPNT, PYLONS, OFSPLF, SLCONS or UWTROC object of type Point, or
	- it is situated on a COALNE, DAMCON, BRIDGE, FLODOC, LNDARE, PONTON or SLCONS object of type Line.
76	Check that no DEPCNT object is within a FLODOC, HULKES, LNDARE or PONTON object of type Area.
77	Check that no DEPCNT object crosses another DEPCNT object.
78	Check for any area object that no boundary crosses itself.
79	Check for any line object that no component edges of a line object cross without a connected node at the crossing point.
81	Check that no spot sounding coincides with another spot sounding (of the same or different depth).
93	Check for any object with WATLEV = 4 [covers and uncovers] or 5 [awash]: • if it is of type Line or Area, that:
	- it is not within or overlaps a LNDARE object of type Area,
	if it is of type Point, that:
	 it is not within a LNDARE object of type Area, or it is not coincident with a LNDARE object of type point, or
	- it is not situated on a LNDARE object of type line.
500	Check that all data are within the cell limits.
516	Check that all master/slave relations are valid.
	 If the master object is of type point, check that the slave object is sharing the same node as the master object. If the master object is of type line, check that the slave object is situated on the line covered by the master object.
	If the master object is of type area, check that the slave object is situated within or on the boundary of the area covered by
	the master object.
	NOTE: CRANES, FLODOC, FORSTC, FSHFAC, HULKES, PONTON, OBSTRN, PYLONS, SILTNK and WRECKS objects must be considered as
	possible structure objects, in addition to the list given in Annex A (12.1.1).
519	Check Group 1 coverage and consistency.
544	Check that any area covered by a M_COVR object with CATCOV = 2 [no coverage available] does not contain any other object.
549	Check that all DEPARE and DRGARE objects are covered by M_QUAL objects without gaps or overlaps.
550	Check that any UNSARE object that contains or is partly covered by a DEPCNT, OBSTRN, SOUNDG, UWTROC or WRECKS object is covered by M_QUAL objects without gaps or overlaps.
557	Check that any SIGSEQ attribute value conforms to the correct structure (i.e. string content in accordance with format specification).
558	Check for any object having SIGSEQ encoded that the value of SIGPER is equal to the sum of intervals of light and intervals of eclipse described by SIGSEQ.
559	Check that no STATUS attribute value contains an impossible combination:
	• 1 [permanent] with at least one of 2 [occasional], 5 [periodic/intermittent], 7 [temporary];
	 3 [recommended] with at least one of 4 [not in use],11 [extinguished]; 4 [not in use] with at least one of 5 [periodic/intermittent], 9 [mandatory];
	 4 [not in use] with at least one of 5 [periodic/intermittent], 9 [mandatory]; 5 [periodic/intermittent] with 11 [extinguished];
	9 [mandatory] with 11 [extinguished];
	• 16 [watched] with 17 [un-watched];
1524	8 [private] with 14 [public]. Check that no M QUAL object contains the attribute DRVAL1, unless a swept area occupies the entire M QUAL object.
	Check for all LNDARE objects of type Area that any edge of the limits shares the geometry of at least one object of the following list:
1565	• linear objects: COALNE, SLCONS, GATCON, DAMCON.
	area objects: M_COVR, GATCON, DAMCON, RIVERS, TUNNEL, DRYDOC, CANALS, LAKARE, LOKBSN, DOCARE, LNDARE.
	 area objects with WATLEV = 1 [partly submerged at high water], 2 [always dry] or 6 [subject to inundation or flooding]: CAUSWY, SLCONS, MORFAC, WRECKS, OBSTRN, PYLONS.
	CAUSYNT, SECUNS, INIURFAC, WRECKS, UBSTRIN, PTEUNS.

Dataset Name	AA500002	S-58 test No.	T0054	Туре	W
S-58 Description	Check for any CRANES, BUISGL, FORST which is not a slave in a master/slave reference if it is of type Area, that it PONTON object of type Area, if it is of type Point, that: it is situated within a LND Area, or it is coincident with one object of type Point, or it is situated on a COAL SLCONS object of type Line	elationship: is covered by a ARE, BRIDGE, FLOE LNDARE, PILPNT, LNE, DAMCON, BRee.	LNDARE, BRIDGE, FLODOC, OFSPLF or PONTON PYLONS, OFSPLF, SLCON	OC, OFSF I object o NS or UW E, PONTO	PLF or f type /TROC
Test Case No. 1	CRANES, BUISGL, FORSTC, LNDMRK, SIL	TNK and DAYMAR		EPARE.	
Location	32°21'59.99"S 60°43'32.77"E	S-58 test No.	CRANES (P) BUISGL (P) FORSTC (P) LNDMRK (P) SILTNK (P) DAYMAR (P)		
Screen Capture		9_4			
Expected test results	T0054: 6 warnings "object is not covere				
Secondary errors	T1775: One additional warning "Naviga triggered related to the daymar created		e as master in DAYMAR"	must be	
Test Case No. 2	CRANES, BUISGL, FORSTC, LNDMRK and	d SILTNK objects ca	ptured over DEPARE.		
Location	32°22'07.45"S 60°43'33.15"E	S-58 test No.	CRANES (A) BUISGL (A) FORSTC (A) LNDMRK (A) SILTNK (A)		

Screen Capture	3	3 ₉			
Expected test results	T0054: Five warnings "object is not cov	ered by a mandato	ry 'object' "must be	triggered.	
Secondary errors	None				
Dataset Name	AA500002	S-58 test No.	T0076	Туре	E
S-58 Description	Check that no DEPCNT object is within Area.	a FLODOC, HULKES	, LNDARE or PONTO	N object of ty	pe
Test Case No. 1	Depth contour captured in Floating doo Depth contour captured in Hulk area Depth contour captured in Land area Depth contour captured in Pontoon are				
Location	32°22'36.74"S 60°43'46.83"E	S57 Encoding	DEPCNT(L) FLODOC (A) HULKES(A) PONTON(A) LNDARE(A)	VALDCO=0	
Screen Capture	12		3		
Expected test results	T0076: An error "object is covered by p T0076: An error "object is covered by p T0076: An error "object is covered by p T0076: An error "object is covered by p	rohibited hulkes" r prohibited Indare" rohibited ponton"	must be triggered. must be triggered. must be triggered.		
Secondary errors	T0043: Four additional warnings "depti to the feature objects created.	n contour without (depth area" must be	triggered rela	ated
	1		T	T _	T _
Dataset Name	AA500002	S-58 test No.	T0077	Туре	E

S-58 Description	Check that no DEPCNT object cross	es another DEPCNT o	bject.		
Test Case No. 1	Depth contour line captured over a	unother denth contour	·		
Location	32°22'24.54"S 60°43'42.38"E	S57 Encoding	DEPCNT(L)		
Screen Capture					
Expected test results	T0077: An error "depth contour cro	osses another depth c	ontour" must be tr	iggered.	
Secondary errors	T0043: One additional warning "de the feature objects created. T0074: Two additional errors "Chec with a Group 1 object) which is wit must be triggered related to the fe	ck for any floating DEP hin an area DEPARE o	PCNT object (i.e. do bject, that DRVAL2	es not share any e	edge
Dataset Name	AA500002	S-58 test No.	T0078	Type E	E
S-58 Description	Check for any area object that no b	oundary crosses itself	f.		
Test Case No. 1	Anchorage area captured.				
Location	32°23'00.57"S 60°43'55.06"E	S57 Encoding	ACHARE (A)		
Screen Capture					
Expected test results	T0078: An error "contour is self-cro	ossed" must be trigger	red.		
Secondary errors	T0080: One additional error "Check triggered related to the feature obj	that no area feature		logy" must be	

Dataset Name	AA500002	S-58 test No.	T0079	Туре	W
S-58 Description	Check for any line object that no connode at the crossing point.	mponent edges of a	a line object Cros	s without a coni	nected
Test Case No. 1	Cable submarine line captured.				
Location	32°23'28.19"S 60°43'37.52"E	S57 Encoding	CBLSUB(L)		
Screen Capture					
Expected test results	T0079: A warning "linear object cross	es itself" must be tr	iggered.		
Secondary errors	None				
	•				
Dataset Name	AA500002	S-58 test No.	T0081	Туре	E
S-58 Description	Check that no spot sounding coincid depth).	des with another s	oot sounding (of	the same or dif	ferent
Test Case No. 1	Two soundings captured with same va	alue on same spatia	l position.		
Location	32°22'29.75"S 60°43'44.81"E	S57 Encoding	SOUNDG	Depth = 3.6	
Screen Capture	36				
Screen Capture Expected test results	T0081: An error "sounding is identica	to 3D Edge sounding	ng" must be trigge	ered.	

Test Case No. 2	Two soundings captured with differen	t values on same sp	oatial position.			
Location	32°22'32.94"S 60°43'36.70"E	S57 Encoding	SOUNDG	Depths are 1.5 and 1.8m		
Screen Capture	18					
Expected test results	T0081: An error "sounding position co	incides with 3D Edg	ge sounding" must	be triggered.		
Secondary errors	None					
Dataset Name	AA500002	S-58 test No.	T0093	Type W		
S-58 Description	 if it is of type Line or Area, th it is not within or overlap if it is of type Point, that: it is not within a LNDARE 	it is not within a LNDARE object of type Area, orit is not coincident with a LNDARE object of type point, or				
Test Case No. 1	SLCONS (L) 's captured on LNDARE (A) OBSTRN (A)'s captured on LNDARE (A) OBSTRN (P)'s captured on LNDARE (A) OBSTRN (P)'s captured on LNDARE (P) OBSTRN (P)'s captured on LNDARE (L)					
			SLCONS (L) SLCONS (L)	WATLEV = 4		

Screen Capture				
Expected test results	T0093: Five warnings "awash object in T0093: Five warnings "covers and unco			gered.
Secondary errors	None	,		
		1		
Dataset Name	AA500002	S-58 test No.	T0500	Type E
S-58 Description	Check that all data are within the cell li	imits.		
Test Case No. 1	Anchorage area point captured inside	No coverage area.		
Location	32°22'59.82"S 60°43'36.51"E	S57 Encoding	M_COVR (A) ACHARE (P)	CATCOV=2
Screen Capture	±			
Expected test results	T0500: An error "object is not within T			
Secondary errors	T0544: One additional error "Check the [no coverage available] does not conta feature objects created. T0019: Five additional warnings "Check borders (i.e. limits of M_COVR with CA [Exterior boundary truncated by the data created.	in any other object k that all spatial ed TCOV = 1 [coverag	t" must be triggered ges which coincide v e available]) are usir	related to the with data limit ng USAG = 3

Dataset Name	AA500002	S-58 test No.	T0516	Туре	W
S-58 Description	 Check that all master/slave relations are If the master object is of type node as the master object. If the master object is of type covered by the master object. If the master object is of type the boundary of the area covered by the area covered by the master object is of type the boundary of the area covered by the area covered b	point, check that the line, check that the area, check that the ered by the master HFAC, HULKES, PC	e slave object is situ e slave object is sit object. DNTON, OBSTRN,	uated on the linuated within or	e on Kand
Test Case No. 1	SILTNK (P) with LIGHTS captured on dif SILTNK (A) with LIGHTS captured on dif SLCONS (L) with LIGHTS captured on di	ferent spatial posit	ions.		
Location	32°23'22.34"S 60°43'42.01"E	S57 Encoding	LNDMRK (P) SILTNK (A) SLCONS (L) LIGHTS (P)		
Screen Capture	F.	F.			
Expected test results	T0516: Three warnings "master and its	slave do not share	geometry" must b	e triggered.	
Secondary errors	T1723: One additional error "Check that all point objects comprising a navigational aid are pointing to the same point spatial object" must be triggered related to the feature objects created.				
		I			
Dataset Name	AA500002	S-58 test No.	T0519	Туре	Е
S-58 Description	Check Group 1 coverage and consisten	cy.			
Test Case No. 1	Unsurveyed area captured inside depth	n area.			
Location	32°22'23.07"S 60°43'51.68"E	S57 Encoding	UNSARE (A)		

Screen Capture	*		51		
Expected test results	T0519: An error "object is overlapped by triggered. T0519: An error "is overlapped by prev T0042: One additional error "Check that	ious UNSARE" mus	t be triggered.		rith
Secondary errors	different ORNT values, or are linked to must be triggered related to the featur	objects M_COVR v	•	• •	
Dataset Name	AA500002	S-58 test No.	T0544	Туре	E
S-58 Description	Check that any area covered by a M_C not contain any other object.			ı	
Test Case No. 1	Shoreline construction line captured in	side No coverage a	irea.		
Location	32°22'42.10"S 60°43'39.05"E	S57 Encoding	M_COVR(A) SLCONS(L)	CATCOV=2	
Screen Capture					
Expected test results	T0544: An error "object in no data area	" must be triggere	d.		
Secondary errors	T0019: Five additional warnings "Che borders (i.e. limits of M_COVR with [Exterior boundary truncated by the dacreated.	CATCOV = 1 [cov	rerage available])	are using USA	G = 3
Dataset Name	AA500002	S-58 test No.	T0549	Туре	E

S-58 Description	Check that all DEPARE and DRGARE objects are covered by M_QUAL objects without gaps or overlaps.				
Test Case No. 1	DEPARE, DRGARE and M_QUAL areas captured.				
Location	32°22'06.47"S 60°43'55.38"E	S57 Encoding	M_QUAL (A) DRGARE (A) DEPARE (A)		
Screen Capture		9,			
Expected test results	T0549:Four errors "object is not prope	erly covered by M_	QUAL" must be trigg	ered.	
Secondary errors	None	-			
-					
Dataset Name	AA500002	S-58 test No.	T0550	Type W	
S-58 Description	Check that any UNSARE object tha SOUNDG, UWTROC or WRECKS object	•	-		
Test Case No. 1	DEPCNT (L), OBSTRN (P, A & L), SOUN (A) `s (one is overlapping of M_QUAL			d on two UNSARE	
Location	32°22'17.09"S 60°43'39.01"E	S57 Encoding	UNSARE (A) M_QUAL (A) SOUNDG (P) WRECKS (P,A) UWTROC (P) OBSTRN (P,A,L)		
Screen Capture	3	2 + 3 s	OBSTRIN (1,7A,E)		

Secondary errors Dataset Name	T0043: One additional warning "depth the feature objects created. T0074: One additional error "Check for with a Group 1 object) which is within must be triggered related to the feature AA500002	r any floating DEPC an area DEPARE ob	CNT object (i.e. doe oject, that DRVAL2	es not share any edge
S-58 Description	Check that any SIGSEQ attribute value accordance with format specification).		correct structure	(i.e. string content in
Test Case No. 1	Light with attribute SIGSEQ captured.			
Location	32°22'28.07"S 60°45'55.16"E	S57 Encoding	DAYMAR LIGHTS	SIGSEQ= 0.4+(03.6)
Screen Capture				
Expected test results	T0557: An error "bad format of 'sigseq	" must be triggere	ed.	
Secondary errors	None			
		1	_	
Dataset Name	AA500002	S-58 test No.	T0558	Type E
S-58 Description	Check for any object having SIGSEQ en intervals of light and intervals of eclips			ual to the sum of
Test Case No. 1	Light with attributes SIGSEQ and SIGPE	R captured.		
Location	32°22'38.69"S 60°45'45.93"E	S57 Encoding	DAYMAR LIGHTS	SIGPER= 1 SIGSEQ= 00.4+(03.6)

Screen Capture	4				
Expected test results	T0558: An error "sum of 'sigseq' is not	equal to 'sigper'" r	nust be triggered.		
Secondary errors	None				
Dataset Name	AA500002	S-58 test No.	T0559	Туре	W
S-58 Description	Check that no STATUS attribute value contains an impossible combination: 1 [permanent] with at least one of 2 [occasional], 5 [periodic/intermittent], 7 [temporary]; 3 [recommended] with at least one of 4 [not in use],11 [extinguished]; 4 [not in use] with at least one of 5 [periodic/intermittent], 9 [mandatory]; 5 [periodic/intermittent] with 11 [extinguished]; 9 [mandatory] with 11 [extinguished]; 16 [watched] with 17 [un-watched]; 8 [private] with 14 [public].				
Test Case No. 1	Offshore platform points captured wit	th attributes.			
Location	32°23'12.30"S 60°43'53.63"E	S57 Encoding	OFSPLF(P)	STATUS=1,2 STATUS=1,5 STATUS=1,7 STATUS=3,4 STATUS=3,11 STATUS=4,5 STATUS=4,9 STATUS=5,11 STATUS=9,11 STATUS=16,1 STATUS=8,14	7

Screen Capture				
Expected test results	T0559: Eleven warnings "values of list at triggered.	ttribute 'status' co	onflicts with other v	alues" must be
Secondary errors	T2000: Eight additional warnings "mean triggered related to the feature objects		tatus' in Offshore p	latform" must be
Dataset Name	AA500002	S-58 test No.	T1524	Type E
S-58 Description	Check that no M_QUAL object contains entire M_QUAL object.	the attribute DR	VAL1, unless a swe	pt area occupies the
Test Case No. 1	M_QUAL (A) captured with attribute DR	VAL1.		
Location	32°23'32.25"S 60°43'36.20"E	S57 Encoding	M_QUAL(A)	DRVAL1=50
Screen Capture		91		
Expected test results	T1524: An error: "meaningless value of	'drval1' in Quality	of data" must be tr	riggered.
Secondary errors	None			
Dataset Name	AA500002	S-58 test No.	T1565	Type W
S-58 Description	Check for all LNDARE objects of type Are least one object of the following list: • Linear objects: COALNE, SLCON • Area objects: M_COVR, GATCO LAKARE, LOKBSN, DOCARE, LNI	IS, GATCON, DAM IN, DAMCON, RIVI	CON.	

Test Case No. 1	Area objects with WATLEV = 1 [partly submerged at high water], 2 [always dry] or 6 [subject to inundation or flooding]: CAUSWY, SLCONS, MORFAC, WRECKS, OBSTRN, PYLONS. Captured LNDARE area without being bordered by any of the line objects (COALNE, SLCONS, GATCON, DAMCON) and no area objects (M_COVR, GATCON, DAMCON, RIVERS, TUNNEL, DRYDOC, CANALS, LAKARE, LOKBSN, DOCARE, LNDARE) and also not sharing an edge with area			
Location	objects whose WATLEV is either 1 or 6 32°23'27.59"S 60°43'33.13"E	S57 Encoding	LNDARE (A)	
Screen Capture				
Expected test results	T1565: A warning "open border of 'Ind	are'" must be trigg	ered.	
Secondary errors	None			

Test Dataset:AA500003

List of S58 Recommended ENC Validation Checks covered in this section:

S58 Test	Description
1566	Check that no edge of a COALNE or linear SLCONS object bounds an area RIVERS, CANALS, LAKARE, DOCARE, DRYDOC or LOKBSN object, except when this edge is also shared by a boundary of a DEPARE, DRGARE, UNSARE, PONTON, FLODOC or HULKES object for which the direction of the edge is the opposite of the one encoded for the RIVERS, CANALS, LAKARE, DOCARE, DRYDOC or LOKBSN object (i.eexcept when this edge separates the area RIVERS, CANALS, LAKARE, DOCARE, DRYDOC or LOKBSN object from an area navigable at compilation scale).
1568	Check that any SLCONS objects of type Area are covered by a LNDARE, DEPARE or UNSARE object of type Area.
1569	Check that any SLCONS objects of type Area with WATLEV = 3 [always under water/submerged], 4 [covers and uncovers] or 5 [awash] are covered by DEPARE and/or UNSARE objects of type Area.
1573	Check that any DRYDOC object is covered by a LNDARE object of type Area.
1580	Check that any area GATCON object is covered by a DEPARE or LNDARE object of type Area.
1599	Check that any RAPIDS or WATFAL object is covered by a RIVERS object of type area (or is coincident with a RIVERS object of type line) and a LNDARE or UNSARE object.
1607	Check that any COALNE object adjacent to a VEGATN object with a value of (7) [mangroves] for CATVEG contains a value of (7) [mangrove] for the attribute CATCOA and that the mangrove area's spatial object has a value of (4) [approximate] for the attribute QUAPOS.
1612	Check that any TUNNEL object is covered by LNDARE, DEPARE, UNSARE or DRGARE objects.
1617	Check that any DAMCON object of type Area is covered by a LNDARE object of type Area.
1619	Check that any DYKCON object of type Area is covered by a LNDARE object of type Area.
1648	Check for any DRGARE object, if the attribute QUASOU is encoded, that the value is (10) [maintained depth] or (11) [not regularly maintained].
1649	Check that no DRGARE object has a value for SOUACC that is equivalent to or degrades the SOUACC attribute on the object M_QUAL.
1651	Check that any SWPARE object is covered by DEPARE and/or DRGARE objects of type Area.
1652	Check, for any SWPARE object that shares the same geo-spatial position and geometry as a M_QUAL object, that the values for DRVAL1 on both objects are the same.
1662	Check that any area WRECKS or area OBSTRN object is covered by a DEPARE, LNDARE or UNSARE object of type Area.
1670	Check where a WRECKS or OBSTRN area includes other WRECKS or OBSTRN point objects, that the encoded values of the attributes EXPSOU, QUASOU, SOUACC, TECSOU, VALSOU and WATLEV for the area object are identical to the values for the shallowest point object.
1671	Check for any line object whose geometry is coincident with the geometry of an area object of the same class and attribute values except for attributes SORIND, SORDAT and SCAMIN.

Dataset Name	AA500003	S-58 test No.	T1566	Туре	E
S-58 Description	Check that no edge of a COALNE or linear S LAKARE, DOCARE, DRYDOC or LOKBSN object, ex of a DEPARE, DRGARE, UNSARE, PONTON, FLOT the edge is the opposite of the one encoded for LOKBSN object (i.eexcept when this edge DOCARE, DRYDOC or LOKBSN object from an are	scept when this edge DOC or HULKES obje r the RIVERS, CANAL ge separates the ard	e is also share ect for which S, LAKARE, D ea RIVERS, C	ed by a bo the dired OCARE, D ANALS, L	oundary ction of ORYDOC
Test Case No. 1	Captured RIVERS, CANALS, LAKARE, DOCARE, DR SLCONS line on LNDARE.	YDOC or LOKBSN are	as bounded	by COALN	IE\
Location	32°22'26.45"S 60°47'57.90"E	S57 Encoding LC SL	Vers (A) Akare (A) Anals (A) Ocare (A) Rydoc (A) Okbsn (A) Cons (L) Oalne (L)		
Screen Capture					
Expected test results	T1566: An error "'canals' is bounded by unexpect T1566: An error "'canals' is bounded by unexpect T1566: An error "'lokbsn' is bounded by unexpect T1566: An error "'lokbsn' is bounded by unexpect T1566: An error "'lakare' is bounded by unexpect T1566: An error "'docare' is bounded by unexpect T1566: An error "'docare' is bounded by unexpect T1566: An error "'rivers' is bounded by unexpect T1566: An error "'rivers' is bounded by unexpect T1566: An error "'rivers' is bounded by unexpect T1566: An error "'drydock' is bounded by unexpect T1566:	ted object 'coalne'" reted object 'slcons'" reted object 'coalne'" reted object 'coalne'" reted object 'slcons'" reted object 'slcons'" reted object 'slcons'" reted object 'slcons'" reted object 'coalne'" reted object 'coalne''	must be trigg must be trigg must be trigg must be trigge must be trigg must be trigg wast be trigge to trigge must be trigge m	ered.	
Secondary errors	T0057: 6 warnings "edge coast line without land				
Test Case No. 2	Captured RIVERS, CANALS, LAKARE, DOCARE, DR edges shared by DEPARE.	YDOC or LOKBSN are	as bounded	by COALN	IE with
Location	32°22'29.91"S 60°47'55.85"E	S57 Encoding C/DI	VERS (A) AKARE (A) ANALS (A) DCARE (A) RYDOC (A) DKBSN (A)		

			COALNE (L) DEPARE (A)		
Screen Capture					
Expected test results	T1566: An error "'canals' is bounded by unexpect T1566: An error "'lokbsn' is bounded by unexpect T1566: An error "'lakare' is bounded by unexpect T1566: An error "'docare' is bounded by unexpect T1566: An error "'rivers' is bounded by unexpect T1566: An error "'drydoc' is bounded	cted object 'coaln cted object 'coalno cted object 'coalno ted object 'coalno	e'" must not be t e'" must not be t ne'" must not be e'" must not be tr	riggered. riggered. triggered. riggered.	
Secondary errors	None.				
Test Case No. 3	Captured RIVERS, CANALS, LAKARE, DOCARE, DR with edges shared by DEPARE.	RYDOC or LOKBSN		by SLCONS line	
Location	32°22'30.78"S 60°47'55.49"E	S57 Encoding	RIVERS (A) LAKARE (A) CANALS (A) DOCARE (A) DRYDOC (A) LOKBSN (A) SLCONS (L) DEPARE (A)		
Screen Capture					
Expected test results	T1566: An error "'canals' is bounded by unexpected object 'slcons'" must not be triggered. T1566: An error "'lokbsn' is bounded by unexpected object 'slcons'" must not be triggered. T1566: An error "'lakare' is bounded by unexpected object 'slcons'" must not be triggered. T1566: An error "'docare' is bounded by unexpected object 'slcons'" must not be triggered. T1566: An error "'rivers' is bounded by unexpected object 'slcons'" must not be triggered. T1566: An error "'drydoc' is bounded by unexpected object 'coalne'" must not be triggered.				
Secondary errors	None.				
Test Case No. 4	Captured RIVERS, CANALS, LAKARE, DOCARE, DR edges shared by DRGARE.	RYDOC or LOKBSN	areas bounded	by COALNE with	

Location	32°22'31.18"S 60°47'55.30"E	S57 Encoding	RIVERS (A) LAKARE (A) CANALS (A) DOCARE (A) DRYDOC (A) LOKBSN (A) COALNE (L) DRGARE (A)
Screen Capture			
Expected test results	T1566: An error "'canals' is bounded by unexpect T1566: An error "'lokbsn' is bounded by unexpect T1566: An error "'lakare' is bounded by unexpect T1566: An error "'docare' is bounded by unexpect T1566: An error "'rivers' is bounded by unexpect T1566: An error "'drydoc' is bounded	cted object 'coaln cted object 'coaln cted object 'coaln ted object 'coalne	e'" must not be triggered. e'" must not be triggered. ne'" must not be triggered. '" must not be triggered.
Secondary errors	None.	-	
Test Case No. 5	Captured RIVERS, CANALS, LAKARE, DOCARE, DF with edges shared by DRGARE.	RYDOC or LOKBSN	areas bounded by SLCONS line
Location	32°22'31.87"S 60°47'54.86"E	S57 Encoding	RIVERS (A) LAKARE (A) CANALS (A) DOCARE (A) DRYDOC (A)
			LOKBSN (A) SLCONS (L) DRGARE (A)
Screen Capture			* *

	T1566: An error "'docare' is bounded by unexpected object 'slcons'" must not be triggered. T1566: An error "'rivers' is bounded by unexpected object 'slcons'" must not be triggered. T1566: An error "'drydoc' is bounded by unexpected object 'coalne'" must not be triggered.			
Secondary errors	None.			
Test Case No. 6	Captured RIVERS, CANALS, LAKARE, DOCARE, D edges shared by UNSARE.	RYDOC or LOKBSN	l areas bounded by COALNE with	
Location	32°22'32.45"S 60°47'54.66"E	S57 Encoding	RIVERS (A) LAKARE (A) CANALS (A) DOCARE (A) DRYDOC (A) LOKBSN (A) COALNE (L) UNSARE (A)	
Screen Capture				
Expected test results	T1566: An error "'canals' is bounded by unexpe T1566: An error "'lokbsn' is bounded by unexpe T1566: An error "'lakare' is bounded by unexpe T1566: An error "'docare' is bounded by unexpe T1566: An error "'rivers' is bounded by unexpe T1566: An error "'drydoc' is bounded by unexpe	ected object 'coalr cted object 'coaln ected object 'coaln cted object 'coaln	ne'" must not be triggered. e'" must not be triggered. ne'" must not be triggered. e'" must not be triggered.	
Secondary errors	None.			
Test Case No. 7	Captured RIVERS, CANALS, LAKARE, DOCARE, D with edges shared by UNSARE.	RYDOC or LOKBSN	l areas bounded by SLCONS line	
Location	32°22'33.05"S 60°47'54.50"E	S57 Encoding	RIVERS (A) LAKARE (A) CANALS (A) DOCARE (A) DRYDOC (A) LOKBSN (A) SLCONS (L) UNSARE (A)	

Screen Capture				
Expected test results	T1566: An error "'canals' is bounded by unexpect T1566: An error "'lokbsn' is bounded by unexpect T1566: An error "'lakare' is bounded by unexpect T1566: An error "'docare' is bounded by unexpect T1566: An error "'rivers' is bounded by unexpect T1566: An error "'drydoc' is bounded	cted object 'slcon cted object 'slcon cted object 'slcon ted object 'slcons	s'" must not be tri s'" must not be tri ns'" must not be tr "" must not be trig	ggered. ggered. iggered. gered.
Secondary errors	None.			
Test Case No. 8	Captured RIVERS, CANALS, LAKARE, DOCARE, DF edges shared by PONTON.	RYDOC or LOKBSN	l areas bounded b	y COALNE with
Location	32°22'33.80"S 60°47'54.20"E	S57 Encoding	RIVERS (A) LAKARE (A) CANALS (A) DOCARE (A) DRYDOC (A) LOKBSN (A) COALNE (L) PONTON (A)	
Screen Capture				
Expected test results	T1566: An error "'canals' is bounded by unexpected object 'coalne'" must not be triggered. T1566: An error "'lokbsn' is bounded by unexpected object 'coalne'" must not be triggered. T1566: An error "'lakare' is bounded by unexpected object 'coalne'" must not be triggered. T1566: An error "'docare' is bounded by unexpected object 'coalne'" must not be triggered. T1566: An error "'rivers' is bounded by unexpected object 'coalne'" must not be triggered. T1566: An error "'drydoc' is bounded by unexpected object 'coalne'" must not be triggered.			
Secondary errors	None.			
Test Case No. 9	Captured RIVERS, CANALS, LAKARE, DOCARE, DF with edges shared by PONTON.	RYDOC or LOKBSN	l areas bounded b	y SLCONS line

Location	32°22'41.38"S 60°47'53.82"E	S57 Encoding	RIVERS (A) LAKARE (A) CANALS (A) DOCARE (A) DRYDOC (A) LOKBSN (A) SLCONS (L) PONTON (A)
Screen Capture			
Expected test results	T1566: An error "'canals' is bounded by unexpect T1566: An error "'lokbsn' is bounded by unexpect T1566: An error "'lakare' is bounded by unexpect T1566: An error "'docare' is bounded by unexpect T1566: An error "'rivers' is bounded by unexpect T1566: An error "'drydoc' is bounded	cted object 'coaln ted object 'coaln cted object 'coaln ted object 'coalne	e'" must not be triggered. e'" must not be triggered. ie'" must not be triggered. '" must not be triggered.
Secondary errors	None.		
Test Case No. 10	Captured RIVERS, CANALS, LAKARE, DOCARE, DF edges shared by FLODOC.	RYDOC or LOKBSN	areas bounded by COALNE with
Location	32°22'46.70"S 60°47'51.54"E	S57 Encoding	RIVERS (A) LAKARE (A) CANALS (A) DOCARE (A) DRYDOC (A) LOKBSN (A) COALNE (L) FLODOC (A)
Screen Capture			

	T1566: An error "'docare' is bounded by unexpected object 'coalne'" must not be triggered. T1566: An error "'rivers' is bounded by unexpected object 'coalne'" must not be triggered. T1566: An error "'drydoc' is bounded by unexpected object 'coalne'" must not be triggered.				
Secondary errors	None.	<u> </u>			
Test Case No. 11	Captured RIVERS, CANALS, LAKARE, DOCARE, with edges shared by FLODOC.	DRYDOC or LOKBSN	l areas bounded by SLCONS line		
Location	32°22'51.44"S 60°47'49.71"E	S57 Encoding	RIVERS (A) LAKARE (A) CANALS (A) DOCARE (A) DRYDOC (A) LOKBSN (A) SLCONS (L) FLODOC (A)		
Screen Capture					
Expected test results	T1566: An error "'canals' is bounded by unexp T1566: An error "'lokbsn' is bounded by unexp T1566: An error "'lakare' is bounded by unexp T1566: An error "'docare' is bounded by unexp T1566: An error "'rivers' is bounded by unexp T1566: An error "'drydoc' is bounded by unexp	ected object 'coaln ected object 'coaln pected object 'coaln ected object 'coaln	ne'" must not be triggered. le'" must not be triggered. ne'" must not be triggered. e'" must not be triggered.		
Secondary errors	None.				
Test Case No. 12	Captured RIVERS, CANALS, LAKARE, DOCARE, edges shared by HULKES.	DRYDOC or LOKBSN	*		
Location	32°22'59.12"S 60°47'47.21"E	S57 Encoding	RIVERS (A) LAKARE (A) CANALS (A) DOCARE (A) DRYDOC (A) LOKBSN (A) COALNE (L) HULKES (A)		

Screen Capture						
Expected test results	T1566: An error "'canals' is bounded by unexpect T1566: An error "'lokbsn' is bounded by unexpect T1566: An error "'lakare' is bounded by unexpect T1566: An error "'docare' is bounded by unexpect T1566: An error "'rivers' is bounded by unexpect T1566: An error "'drydoc' is bounded	ted object 'coalne ted object 'coalne ted object 'coalne ed object 'coalne	e'" must n e'" must n e'" must r '" must no	ot be toot be	riggered. riggered. triggered. iggered.	
Secondary errors	None.					
Test Case No. 13	Captured RIVERS, CANALS, LAKARE, DOCARE, DR with edges shared by HULKES.	YDOC or LOKBSN	areas bou	ınded l	by SLCON:	S line
Location	32°22'55.15"S 60°47'48.36"E	S57 Encoding	CANALS DOCARE DRYDOC LOKBSN SLCONS HULKES	(A) (A) (A) (A) (A) (A) (L)		
Screen Capture						
Expected test results	T1566: An error "'canals' is bounded by unexpected object 'coalne'" must not be triggered. T1566: An error "'lokbsn' is bounded by unexpected object 'coalne'" must not be triggered. T1566: An error "'lakare' is bounded by unexpected object 'coalne'" must not be triggered. T1566: An error "'docare' is bounded by unexpected object 'coalne'" must not be triggered. T1566: An error "'rivers' is bounded by unexpected object 'coalne'" must not be triggered. T1566: An error "'drydoc' is bounded by unexpected object 'coalne'" must not be triggered.					
Secondary errors	None.					
Dataset Name	AA500003	S-58 test No.	. T15	68	Туре	Е

S-58 Description	Check that any SLCONS objects of type Area are of type Area.	covered by a LND	ARE, DEPARE or	UNSARE	object
Test Case No. 1	SLCONS area captured over PONTON area.			1	
Location	32°22'27.65"S 60°47'56.43"E	S57 Encoding	SLCONS(A) PONTON (A)	WATLE	V=2
Screen Capture					
Expected test results	T1568: An error "object is covered by prohibited		==		
Secondary errors	T1786: A warning "SLCONS Object of type Area v LNDARE" must be triggered.	vith WATLEV=2[a	lways dry] aren'	t covered	by
Dataset Name	AA500003	S-58 test No	. T1569	Туре	E
S-58 Description	Check that any SLCONS objects of type Area with [covers and uncovers] or 5 [awash] are covered		•		_
Test Case No. 1	SLCONS areas captured over PONTON areas.	T	2017011(1)	1	
Location	32°22'16.70"S 60°48'07.72"E	S57 Encoding	PONTON (A) SLCONS (A) SLCONS (A) SLCONS (A)	WATLE WATLE	V=4
Screen Capture	09				
Expected test results	T1569: Three errors "'slcons' is not covered by D		-		
Secondary errors	T1568: Three errors "Check that any SLCONS obj DEPARE or UNSARE object of type Area." must b		are covered by	a LNDARE	
Dataset Name	AA500003	S-58 test No	. T1573	Туре	E
S-58 Description	Check that any DRYDOC object is covered by a LI	L		Туре	<u> </u>

Test Case No. 1	Dry dock object has been captured inside depth	area.			
Location	32°22'12.96"S 60°48'09.90"E	S57 Encoding	DRYDOC (A)		
Screen Capture					
Expected test results	T1573: An error "object is not covered by a man	datory 'Indare'" n	nust be triggered	d.	
Secondary errors	None.				
		1			
Dataset Name	AA500003	S-58 test No	T1580	Type	W
S-58 Description	Check that any area GATCON object is covered b	y a DEPARE or LN	IDARE object of	type Area	ı .
Test Case No. 1	GATCON object has been captured inside depth	area underneath	1	_	
Location	32°22'22.73"S 60°48'00.27"E	S57 Encoding	GATCON (A) PONTON (A)		
Screen Capture					
Expected test results	T1580: An error "Check that any area GATCON o of type Area" must be triggered.	bject is covered b	by a DEPARE or a	LNDARE	object
Secondary errors	None.				
		T .			
Dataset Name	AA500003	S-58 test No	T1599	Type	W
S-58 Description	Check that any RAPIDS or WATFAL object is coincident with a RIVERS object of type line) and	•	-	type are	a (or is
Test Case No. 1	RAPIDS and WATFAL features are captured with	out completely su	urrounded by RIV	/ERS.	
Location	32°22'57.60"S 60°47'48.15"E	S57 Encoding	RAPIDS (L) WATFAL (L) RIVERS (A)		

Screen Capture	T1599: An error "object is not covered by a man	datory 'rivers'" m	ust he triggered		
Expected test results	T1599: An error "object is not covered by a man				
Secondary errors	None.				
		T			I
Dataset Name	AA500003	S-58 test No		Туре	W
S-58 Description	Check that any COALNE object adjacent to a VI CATVEG contains a value of (7) [mangrove] for area's spatial object has a value of (4) [approximation of the contact of the c	or the attribute (ate] for the attrib	CATCOA and the		-
Test Case No. 1	VEGATN area captured adjacent to COALNE with	out CATCOA=7	<u> </u>	T	
Location	32°23'02.21"S 60°47'46.23"E	S57 Encoding	VEGATN (A) COALNE (L)	CATVEG	i=7
Screen Capture					
Expected test results	T1607: A warning "mangroves without 'catcoa:7	or 'quapos:4'" m	ust be triggered		
Secondary errors	None.				
		ı			1
Detect Name	A A E 0 0 0 0 2	S-58 test No	. T1612	Type	W
Dataset Name	AA500003	3 30 (63) 140		.,,,,	1
S-58 Description	Check that any TUNNEL object is covered by LNE	I.			

Location	32°23'02.97"S 60°47'45.10"E	S57 Encoding	TUNNEL (A) PONTON (A)		
Screen Capture					
Expected test results	T1612: An error "object is not covered by a man	datory 'object'" m	nust be triggered		
Secondary errors	None.				
Dataset Name	AA500003	S-58 test No	. T1617	Туре	E
S-58 Description	Check that any DAMCON object of type Area is o		I	I.	-
Test Case No. 1	DAMCON area captured on depth area.				
Location	32°23'07.25"S 60°47'45.03"E	S57 Encoding	DAMCON (A) DEPARE (A)		
Screen Capture					
Expected test results	T1617: An error "object is not covered by a man	datory 'Indare'" n	nust be triggered	l .	
Secondary errors	None.				
Dataset Name	AA500003	S-58 test No	. T1619	Туре	E
S-58 Description	Check that any DYKCON object of type Area is co			I.	<u> </u>
Test Case No. 1	DYKCON area captured in DEPARE.				
Location	32°23'05.28"S 60°47'44.15"E	S57 Encoding	DYKCON (A) DEPARE (A)		

Screen Capture		
Expected test results T1619: An error "object is not covered by a mandatory 'Indare'" must be triggered.		
Secondary errors None.		
	ı	
Dataset Name AA500003 S-58 test No. T1648 T	Туре	E
S-58 Description Check for any DRGARE object, if the attribute QUASOU is encoded, that the [maintained depth] or (11) [not regularly maintained].	value i	s (10)
Test Case No. 1 Dredged area with QUASOU captured.		
Location 32°22'25.17"S 60°47'54.40"E S57 Encoding DRGARE (A) C	QUASOU	J=6
Screen Capture		
Expected test results T1648: An error "meaningless value of 'quasou' in Dredged area" must be triggered.		
Secondary errors T2000: A warning "DRGARE should not have value 6 [least depth known] for QUASOU triggered.	U" must	
uiggereu.		be
	1	
	Туре	be E
		E
Dataset Name AA500003 S-58 test No. T1649 Check that no DRGARE object has a value for SOUACC that is equivalent to or		E

Screen Capture					
Expected test results	T1649: Two errors "redundant 'souacc' is defined	d by 'm_qual'" must b	e triggered.		
Secondary errors	T1530: An error "The value of SOUACC must not be equal to that of the covering M_QUAL" must be triggered. T1655: "Check that no SWPARE object sharing the same geo-spatial position and geometry as a M_QUAL object contains the attribute POSACC if the SOUACC is encoded." must be triggered.				
			1 1		
Dataset Name	AA500003	S-58 test No.	T1651	Type	E
S-58 Description	Check that any SWPARE object is covered by DEP	PARE and/or DRGARE	objects of typ	oe Area.	
Test Case No. 1	SWAPARE captured over UNSARE.				
Location	32°23'24.99"S 60°49'16.81"E	NS/Encoding	'PARE (A) SARE (A)	DRVAL1	=1
Screen Capture					
Expected test results	T1651: An error "'swpare' is not in water" must b	oe triggered.			
Secondary errors	None.				
Dataset Name	AA500003	S-58 test No.	T1652	Туре	E
S-58 Description	Check, for any SWPARE object that shares the M_QUAL object, that the values for DRVAL1 on b	e same geo-spatial p	osition and		
Test Case No. 1	SWPARE and M_QUAL objects with same geome	try are captured.			
		•			

Location	32°23'31.64"S 60°49'07.44"E	S57 Encoding	SWPARE (A) M_QUAL (A)	DRVAL1 DRVAL1		
Screen Capture						
Expected test results	T1652: An error "spatial conflict between 'drval1	' and meta objec	t 'm_qual'" must	be trigge	red.	
Secondary errors	None.					
			74.662	T _	l _	
Dataset Name	AA500003	S-58 test No	. T1662	Type	E	
S-58 Description	Check that any area WRECKS or area OBSTRN of object of type Area.	bject is covered b	y a DEPARE, LN	DARE or U	JNSARE	
Test Case No. 1	WRECKS (A) and OBSTRN (A) captured on PONTO	ON (A).				
Location	32°23'15.60"S 60°47'39.19"E	S57 Encoding	OBSTRN (A) WRECKS (A) PONTON (A)			
Screen Capture	13,					
Expected test results	T1662: Two errors "object is not covered by a mandatory object" must be triggered.					
Secondary errors	None.					
Dataset Name	AA500003	S-58 test No	. T1670	Type	W	
S-58 Description	Check where a WRECKS or OBSTRN area includes other WRECKS or OBSTRN point objects, that the encoded values of the attributes EXPSOU, QUASOU, SOUACC, TECSOU, VALSOU and WATLEV for the area object are identical to the values for the shallowest point object.					
-	the area object are identical to the values for the	shallowest point	t object.			

Location	32°23'38.52"S 60°47'49.39"E	S57 Encoding	OBSTRN(A) OBSTRN(P)	VALSOU=1.5 WATLEV=3 EXPSOU=1 QUASOU=7 SOUACC=0.1 TECSOU=6 VALSOU=-2.0 WATLEV=4 EXPSOU=2 QUASOU=6 SOUACC=0.0 TECSOU=5	
Screen Capture		•••••			
Expected test results	T1670: A warning "'valsou' attribute conflicts with that in 'obstrn" must be triggered. T1670: A warning "'watlev' attribute conflicts with that in 'obstrn" must be triggered. T1670: A warning "'tecsou' attribute conflicts with that in 'obstrn" must be triggered. T1670: A warning "'souacc' attribute conflicts with that in 'obstrn" must be triggered. T1670: A warning "'quasou' attribute conflicts with that in 'obstrn" must be triggered. T1670: A warning "'expsou' attribute conflicts with that in 'obstrn" must be triggered.				
Secondary errors	None.				
Test Case No. 2	WRECKS area and point captured with different	attributes.	MADEONCAN	MATIEN 2	
Location	32°23'38.91"S 60°47'49.71"E	S57 Encoding	WRECKS(A) WRECKS(P)	WATLEV=3 EXPSOU=1 QUASOU=7 SOUACC=0 TECSOU=5 VALSOU=1 WATLEV=4 EXPSOU=2 QUASOU=6 SOUACC=1 TECSOU=6 VALSOU=-1.5	

Screen Capture		••••		
Expected test results	T1670: A warning "'valsou' attribute conflicts wit T1670: A warning "'watlev' attribute conflicts wit T1670: A warning "'tecsou' attribute conflicts wit T1670: A warning "'souacc' attribute conflicts wit T1670: A warning "'quasou' attribute conflicts wit T1670: A warning "'expsou' attribute conflicts wit	th that in 'wrecks th that in 'wrecks th that in 'wrecks ith that in 'wrecks	" must be trigge " must be trigge " must be trigge " must be trigg	ered. ered. ered. gered.
Secondary errors	None.			
		T		
Dataset Name	AA500003	S-58 test No	T1671	Type E
S-58 Description	Check for any line object whose geometry is coir same class and attribute values except for attrib	_	-	-
Test Case No. 1	SLCONS line and area objects with same attribut	es created.		
Location	32°22'25.20"S 60°47'55.86"E	S57 Encoding	SLCONS (A) SLCONS (L)	CATSLC=10 WATLEV=2
Screen Capture				
Expected test results	T1671: An error "line 'slcons' shares geometry w	ith identical area	'slcons'" must b	oe triggered.
Secon dary errors	None.			
Test Case No. 2	SLCONS line and area objects captured with sam attributes SORIND, SORDAT and SCAMIN assigne	•	ct for one objec	t, for which

Location	32°22'26.10"S 60°47'56.28"E	S57 Encoding	SLCONS (L) SLCONS (A)	CATSLC=10 WATLEV=2 CATSLC=10 WATLEV=2 SCAMIN=4999 99 SORDAT=2012 0628 SORIND=US,U S,reprt,S58
Screen Capture				
Expected test results	T1671: An error "line 'slcons' shares geometry w	ith identical area	'slcons'" must no	ot be triggered.
Secondary errors	None.			

Test Dataset:AA500004

List of S58 Recommended ENC Validation Checks covered in this section:

S58 Test	Description				
1672	Check for the occurr WRECKS and OBSTRI		area object of the same class and attribute values, except for LNDARE,		
1674	Check for any SBDARE object of type Area, located in an intertidal area, that WATLEV has a value of (4) [covers and uncovers].				
1681	· ·	ay RECTRC object of type Line with a value degrees) with the direction of the traffic	ue for ORIENT encoded, that the direction of digitizing is consistent (i.e. c flow (as encoded in ORIENT).		
1682		RC or NAVLNE object belongs to a C_AG marks] for CATTRK, which may exist as is	GR collection object, except for RECTRC objects with a value of (2) [not based solated objects.		
1692	Check that any DWR	TPT object is covered by DEPARE and/or	DRGARE objects.		
1693	Check for any DWRT a collection object.	PT and DWRTCL object, that if the attrib	ute OBJNAM is encoded, the DWRTPT or DWRTCL object is not aggregated in		
1694	Check for any one w	ay DWRTCL object with a value for ORIEI rection of the traffic flow (as encoded in	NT encoded, the direction of digitizing is consistent (i.e. deviation less than 5 ORIENT).		
1696		ay RCRTCL object with a value for ORIEN rection of the traffic flow (as encoded in	T encoded, the direction of digitizing is consistent (i.e. deviation less than 5 ORIENT).		
1698	Check that no TWRT	PT object contains the attributes VERDA	T and DRVAL2.		
1719	•	UL object that the combination of attrib	ute values corresponds to the following table.		
	1	ibute: any predefined value or unknown te: any predefined value or undefined.	value,		
	allowed values giver	, , , ,	is encoded, it should contain one or more values selected from the list of		
	WATLEV	VALSOU	QUASOU		
	1, 2, 5 or 7	Undefined	Undefined		
		VALSOU < 0	1, 3, 4, 6, 7, 8, 9 or undefined		
	4	Undefined or unknown	2 or undefined		
	5	VALSOU = 0	1, 3, 4, 6, 8, 9 or undefined		
	J	Undefined or unknown	2 or undefined		
	3	VALSOU > 0	1, 3, 4, 6, 7, 8, 9 or undefined		
	٦	Unknown	2 or undefined		
	Unknown	Unknown	2 or undefined		
1722	object. When two objects (ii object must be consi NOTE: CRANES, FLOI possible structure ob	ncluding one DAYMAR) contained in the dered as an equipment object. DOC, FORSTC, FSHFAC, HULKES, PONTON bjects, in addition to the list given in Ann			
1724		· · · · · · · · · · · · · · · · · · ·	value for OBJNAM equivalent to the OBJNAM value of the master object.		
1725	exists) is encoded as	the master object else a LIGHTS object (cts that point to the same point spatial object, that a DAYMAR object (if one if one exists) is encoded as the master object.		
1726	Check that the entire buoyage system in o	•	or more M_NSYS objects, with a value for the attribute MARSYS indicating the		
1732	Check that no BCNLA	AT object contains the attributes VERDAT	Γ and VERACC.		
1765	Check when both M_QUAL and M_ACCY objects are used in a cell, that these meta objects provide exhaustive, non-overlapping coverage of those areas covered by M_COVR objects with CATCOV = 1 [coverage available].				
1766	Check for any attribu	ite PICREP, TXTDSC and NTXTDS that the	attribute value only contains one file name.		
1767	it is shared by an are	which fulfils the following conditions: a SBDARE object with WATLEV = 4 [cove a DEPARE or DRGARE object, with DRVA a DEPARE or DRGARE object, with DRVA			

Dataset Name	AA500004	S-58 test No.	T1672	Туре	E
S-58 Description	Check for the occurrence of any point of attribute values, except for LNDARE, W		•	same class ar	nd
Test Case No. 1	Captured SILTNK area inside SILTNK po	int.			
Location	32°22'21.13"S 60°49'38.17"E	S57 Encoding	SILTNK (A & P)		
Screen Capture					
Expected test results	T1672: An error "point 'siltnk' is inside	identical area 'siltn	k' "must be triggered	d.	
Secondary Errors	None.				
Test Case No. 2	Captured LNDARE, WRECKS and OBSTR	N areas inside LND	ARE, WRECKS and O	BSTRN points	
Location	32°22'22.00"S 60°49'48.22"E	S57 Encoding	LNDARE (A &P) WRECKS (A &P) OBSTRN (A &P)		
Screen Capture					
Expected test results	T1672: An error "point 'Indare' is inside T1672: An error "point 'obstrn' is inside T1672: An error "point 'wrecks' is inside	e identical area 'obs e identical area 'wr	strn' "must not be tri ecks' "must not be tr	ggered. iggered.	
Secondary Errors	T0055: A warning "LNDARE object with created.	in prohibited area	' must be triggered fo	or the objects	5
Dataset Name	AA500004	S-58 test No.	T1674	Туре	l w
S-58 Description	Check for any SBDARE object of type Alof (4) [covers and uncovers].		_	ı	1
Test Case No. 1	Captured SBDARE (A) with WATLEV=3 i	n intertidal area.			

Location	32°22'13.70"S 60°51'34.47"E	S57 Encoding	SBDARE (A) DEPARE (A)	NATSUR=9 WATLEV=1,2,3,5,6, 7 DRVAL1=-1 DRVAL2=0
Screen Capture				
Expected test results	T1674: 6 warnings "meaningless value	of 'watlev' in <seak< th=""><th>oed area>" must</th><th>be triggered.</th></seak<>	oed area>" must	be triggered.
Secondary Errors	T0061: A warning "Check that no object (DEPARE with DRVAL2 <= 0) or a LNDA T1786: A warning "Check that any object by a LNDARE object of type Area." must be triggered for the object of the object o	RE." must be trigge ects of type Area wi st be triggered for t ngless value of 'wat	red for the object th WATLEV = 2 [a he objects create	always dry] are covered
Dataset Name	AA500004	S-58 test No.	T1681	Type E
S-58 Description	Check for any one way RECTRC object of direction of digitizing is consistent (i.e. traffic flow (as encoded in ORIENT).	• •		·
Test Case No. 1	Captured RECTRC (L) with direction of	digitization of 130.		
Location	32°22'34.54"S 60°49'43.63"E	S57 Encoding	RECTRC (L)	ORIENT=100
	1	•	1	

T1681: An error ""orient" and direction of digitizing do not match" must be triggered. T1789: A warning "Check for any object DWRTCL, NAVLNE, RECTRC and RCRTCL of type Line with a value for ORIENT encoded, that the orientation of the spatial geometry is consistent (i.e. deviation less than 5 degrees) with the attribute value (or the reciprocal value) encoded in ORIENT." must be triggered for the objects created. Dataset Name AA500004 S-58 test No. T1682 Type W Check that any RECTRC or NAVLNE object belongs to a C_AGGR collection object, except for RECTRC objects with a value of (2) [not based on a system of fixed marks] for CATTRK, which may exist as isolated objects. Test Case No. 1 Captured RECTRC and NAVLNE line. Screen Capture T1682: Two warnings "object must be associated with an object C_AGGR" must be triggered. T1788 Warning "NAVLNE object and coincided RECTRC have connection to different C_AGGR objects." Test Case No. 2 Captured RECTRC. Captured RECTRC. S57 Encoding RECTRC (L) CATTRK = 2	Screen Capture	76				
a value for ORIENT encoded, that the orientation of the spatial geometry is consistent (i.e. deviation less than 5 degrees) with the attribute value (or the reciprocal value) encoded in ORIENT." must be triggered for the objects created. Dataset Name	Expected test results	T1681: An error "'orient' and direction	of digitizing do not	match" must be	triggered.	
Check that any RECTRC or NAVLNE object belongs to a C_AGGR collection object, except for RECTRC objects with a value of (2) [not based on a system of fixed marks] for CATTRK, which may exist as isolated objects. Test Case No. 1 Captured RECTRC and NAVLNE line. Soreen Capture Screen Capture T1682: Two warnings "object must be associated with an object C_AGGR" must be triggered. T1788 Warning "NAVLNE object and coincided RECTRC have connection to different C_AGGR objects." Test Case No. 2 Captured RECTRC.	Secondary Errors	a value for ORIENT encoded, that the o deviation less than 5 degrees) with the	rientation of the sp attribute value (or	oatial geometry i	s consistent (i.e.	e with
Check that any RECTRC or NAVLNE object belongs to a C_AGGR collection object, except for RECTRC objects with a value of (2) [not based on a system of fixed marks] for CATTRK, which may exist as isolated objects. Test Case No. 1 Captured RECTRC and NAVLNE line. Soreen Capture Screen Capture T1682: Two warnings "object must be associated with an object C_AGGR" must be triggered. T1788 Warning "NAVLNE object and coincided RECTRC have connection to different C_AGGR objects." Test Case No. 2 Captured RECTRC.						
Screen Capture RECTRC objects with a value of (2) [not based on a system of fixed marks] for CATTRK, which may exist as isolated objects. Captured RECTRC and NAVLNE line. Soreen Capture Soreen Capture Expected test results T1682: Two warnings "object must be associated with an object C_AGGR" must be triggered. T1788 Warning "NAVLNE object and coincided RECTRC have connection to different C_AGGR objects." Test Case No. 2 Captured RECTRC.	Dataset Name	AA500004	S-58 test No.	T1682	Туре	W
Screen Capture Screen Capture T1682: Two warnings "object must be associated with an object C_AGGR" must be triggered. T1788 Warning "NAVLNE object and coincided RECTRC have connection to different C_AGGR objects." Test Case No. 2 Captured RECTRC.	S-58 Description	RECTRC objects with a value of (2) [not				
Screen Capture Expected test results T1682: Two warnings "object must be associated with an object C_AGGR" must be triggered. T1788 Warning "NAVLNE object and coincided RECTRC have connection to different C_AGGR objects." Test Case No. 2 Captured RECTRC.	Test Case No. 1	Captured RECTRC and NAVLNE line.				
Expected test results T1682: Two warnings "object must be associated with an object C_AGGR" must be triggered. T1788 Warning "NAVLNE object and coincided RECTRC have connection to different C_AGGR objects." Test Case No. 2 Captured RECTRC.	Location	32°22'27.81"S 60°49'46.15"E	S57 Encoding			
Secondary Errors T1788 Warning "NAVLNE object and coincided RECTRC have connection to different C_AGGR objects." Test Case No. 2 Captured RECTRC.	Screen Capture	6	228			
Test Case No. 2 Captured RECTRC.	Expected test results	T1682: Two warnings "object must be a	associated with an	object C_AGGR"	must be triggere	d.
	Secondary Errors	T1788 Warning "NAVLNE object and coincided RECTRC have connection to different C_AGGR				
Location 32°22'29.16"S 60°49'50.21"E S57 Encoding RECTRC (L) CATTRK = 2	Test Case No. 2	Captured RECTRC.				
	Location	32°22'29.16"S 60°49'50.21"E	S57 Encoding	RECTRC (L)	CATTRK = 2	

Screen Capture	6	25/			
Expected test results	T1682: A warning "object must be asso	ciated with an obj	ect C_AGGR" must	t not be triggere	ed.
Secondary Errors	None.				,
Dataset Name	AA500004	S-58 test No.	T1692	Туре	Е
S-58 Description	Check that any DWRTPT object is cover	red by DEPARE and	l/or DRGARE objec	cts.	
Test Case No. 1	DWRTPT captured inside UNSARE.				
Location	32°22'13.41"S 60°50'19.66"E	S57 Encoding	UNSARE (A) DWRTPT (A)		
Screen Capture	216	23			
Expected test results	T1692: An error "object is covered by p	rohibited 'unsare'	" must be triggere	d.	
Secondary Errors	None.				
Test Case No. 2	DWRTPT captured inside DRGARE and				
Location	32°22'02.75"S 60°50'16.85"E	S57 Encoding	DWRTPT (A)		
Screen Capture	207				

Expected test results	T1692: Two errors "object is covered	by prohibited 'unsa	re'" must not be	triggered.		
Secondary Errors	None.					
Dataset Name	AA500004	S-58 test No.	1693	Type W		
S-58 Description		Check for any DWRTPT and DWRTCL object, that if the attribute OBJNAM is encoded, the DWRTPT or DWRTCL object is not aggregated in a collection object.				
Test Case No. 1	Captured DWRTPT (A) and DWRTCL (L) with OBJNAM's ag	ggregated in a co	llection object.		
Location	32°22'15.64"S 60°50'47.48"E	S57 Encoding	DWRTCL (L) DWRTPT (A)	OBJNAM = Deep Water		
Screen Capture	14 ₃	10 ₆				
Expected test results	T1693: Two warnings "unexpected ref	ference to collection	n objects" must k	oe triggered.		
Secondary Errors	None.					
Dataset Name	AA500004	S-58 test No.	T1694	Type E		
S-58 Description	Check for any one way DWRTCL object digitizing is consistent (i.e. deviation le encoded in ORIENT).					
Test Case No. 1	Captured DWRTCL line.					
Location	32°22'47.20"S 60°49'52.09"E	S57 Encoding	DWRTCL (L)	CATTRK=2 ORIENT=320 TRAFIC=3		
Screen Capture	7, 14 12, 12, 12, 12, 12, 12, 15, 15, 15, 15, 15, 15, 15, 15, 15, 15	4 19 ₂ 20 ₇ 24 ₃				
Expected test results	T1694: An error "'orient' and direction	n of digitizing do no	t match" must be	e triggered.		
Secondary Errors	T1789: A warning "Check for any object value for ORIENT encoded, that the orilless than 5 degrees) with the attribute triggered for the objects created.	ct DWRTCL, NAVLNI entation of the spat	E, RECTRC and RC ial geometry is co	CRTCL of type Line with a consistent (i.e. deviation		

Dataset Name	AA500004	S-58 test No.	T1696	Type E							
S-58 Description Test Case No. 1	Check for any one way RCRTCL object is consistent (i.e. deviation less than 5 in ORIENT). Captured RCRTCL line.										
Location	32°22'28.79"S 60°50'00.33"E	CATTRK=2									
Screen Capture	25%	1 21 ₆									
Expected test results	T1696: An error "'orient' and direction	of digitizing do no	t match" must be	e triggered.							
Secondary Errors	T1789: A warning "Check for any object a value for ORIENT encoded, that the deviation less than 5 degrees) with the ORIENT." must be reported for the obj	orientation of the seattribute value (o	patial geometry	is consistent (i.e.							
Dataset Name	AA500004	S-58 test No.	T1698	Type E							
S-58 Description	Check that no TWRTPT object contains		_ I	1							
Test Case No. 1	TWRTPT captured with attributes VERI	DAT and DRVAL2.									
Location	32°22'27.63"S 60°50'16.87"E	S57 Encoding	TWRTPT (A)	VERDAT=1 DRVAL2=25							
Screen Capture		21,0									
	T1698: An error "Attributes Vertical da	tum (VERDAT) and	l Denth range val	uo 2 (DB)/AL2) aro							
Expected test results	prohibited for Two-way route part (TW T1503: A warning "any object with attr	/RTPT) objects" mu	ust be triggered.								

Dataset Name	AA500004		S-58 test	: No.	T1719		Туре	W		
C FS Description	table. "undefined" m "any value" m - for mand - for option For each speci	MARCUL object that the neans that no value is eneans, atory attribute: any predefact and attribute: any predef fic case, when QUASOU of from the list of allower her attributes which do	defined value ined value of (attribute of d values give	e or un r undef f type L en in the	known value, fined. .ist) is encoded, i e table.	t should (
S-58 Description	WATLEV	VALSOU		QUASC						
	1, 2, 5 or 7	Undefined		Undefi						
	7, 2, 3 3 1	VALSOU < 0			6, 7, 8, 9 or unde	efined		+		
	4	Undefined or unknow			defined					
		VALSOU = 0			6, 8, 9 or undefi	ned				
	5	Undefined or unknow			defined	ileu				
		VALSOU > 0				undofinad				
	3				6, 7, 8, 9 or unde	enneu				
		Unknown			defined			-		
Test Case No. 1	Unknown	Unknown CUL points objects with		2 or un	defined					
Location	32°23'00.20"S	60°50'41.15"E	S57 Encod	ling	MARCUL (P)	1,2,3,4 1		9,10,1		
Screen Capture		11. × MO 12	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \							
Expected test results	corresponds to	rnings "Check for any Mother table as per S58" m	nust be trigg	ered.						
Secondary Errors	triggered for the T0507: 26 war	rnings "meaningless val ne objects created. nings "mandatory 'valso ne objects created.	•							
Dataset Name	A A E O O O O A		C F0 +c-+	. No	T1722		Tues	14/		
Dataset Name	AA500004		S-58 test	. NO.	T1722		Type	W		

S-58 Description	Check that any navigational aid equi or another navigational aid equipme contained in the list of structure obj- must be considered as an equipmen NOTE: CRANES, FLODOC, FORSTC, FS WRECKS objects must be considered Annex A (12.1.1).	ent object. When two ects are part of the r t object. SHFAC, HULKES, PON	o objects (includi navigational aid, t ITON, OBSTRN, P	ng one DAYMAR) then the DAYMAR object YLONS, SILTNK and
Test Case No. 1	Captured DAYMAR and BCNSPP (ma	ster) with LIGHTS (sl	ave).	
Location	32°22'35.42"S 60°49'35.29"E	S57 Encoding	DAYMAR (P) BCNSPP (P) LIGHTS (P)	
Screen Capture Expected test results	T1722: A warning "objects hierarchy triggered.	can be made out of	structure and "e	quipment" must be
Secondary Errors	None			
			T	
Dataset Name	AA500004	S-58 test No.		T1724 Type W
S-58 Description	Check that no navigational aid equip OBJNAM value of the master object.	•	s a value for OBJ	NAM equivalent to the
Test Case No. 1	Same OBJNAM has been encoded for	r both master and sl	ave objects.	
Location	32°22'56.03"S 60°50'05.27"E	S57 Encoding	BCNSPP LIGHTS	OBJNAM=abc
Screen Capture	25 ₂	21 ₆		

Expected test results	T1724: A warning "redundant 'objnam' in slave" must be trigger	red.									
Secondary Errors	None.										
Dataset Name	AA500004 S-58 test No. T172	Type W									
S-58 Description	Check, for a navigational aid containing only equipment objects that point to the same point spatial object, that a DAYMAR object (if one exists) is encoded as the master object else a LIGHTS object (if one exists) is encoded as the master object.										
Test Case No. 1	Captured LIGHTS as master and DAYMAR as slave.										
Location	32°22'45.32"S 60°49'32.74"E										
Screen Capture											
Expected test results	T1725: A warning "master is not 'daymar' in equipment group'"	must be triggered.									
Secondary Errors	T0516: A warning "LIGHTS object has a structure 'daymar' as a sl for the objects created.	lave <light> " must be triggered</light>									
Test Case No. 2	Captured FOGSIG as master and LIGHTS as slave.										
Location	1 3 7 7 7 7 45 79 5 611 49 3 1 4 7 F	SIG (P) ITS (P)									
Screen Capture											
Expected test results	T1725: A warning "master is not 'lights' in equipment group'" m										
Secondary Errors	T1722: A warning "LIGHTS has equipment without a structure" r created. T0516: A warning "FOGSIG this object cannot have slaves " mus created										
Dataset Name	AA500004 S-58 test No. T172	26 Type E									
S-58 Description	Check that the entire area of the data set is covered by one or m for the attribute MARSYS indicating the buoyage system in oper										

Test Case No. 1	M_NSYS not captured over small portion	on of DEPARE.		
Location	32°23'34.00"S 60°50'22.13"E	S57 Encoding	M_NSYS (A)	
Screen Capture	10 ₉ 10 ₆ 10 ₆ 112 ₄ 10 ₆ 15	14 11,		
Expected test results	T1726: An error "edge is open border of	of 'm_nsys' coverag	ge" must be trigg	ered.
Secondary Errors	None.			
Dataset Name	AA500004	S-58 test No.	T1732	Type E
S-58 Description	Check that no BCNLAT object contains	the attributes VER	DAT and VERACC	
Test Case No. 1	Captured BCNLAT with VERDAT and VE	RACC.		
Location	32°22'46.78"S 60°50'16.25"E	S57 Encoding	BCNLAT (P)	VERACC=10 VERDAT=3
Screen Capture	22 ₅ 0 ₇	19 ₅		
Expected test results	T1732: An error "Attributes Vertical da prohibited for Beacon, lateral (BCNLAT) objects" must be	triggered.	
Secondary Errors	T1503: A warning "any object with VER VERCCL, VERCLR, VERCOP or VERCSA" T1546: An error "no object has an attrivalue for at least one of VERCLR, VERCO created.	must be triggered to bute value for VER	for the objects cr ACC without a co	eated. orresponding attribute
B	4450004	0.50	T4765	T_ T
Dataset Name	AA500004	S-58 test No.	T1765	Type W
S-58 Description	Check when both M_QUAL and M_ACC provide exhaustive, non-overlapping concarcover a [coverage available].	-		-
Test Case No. 1	M ACCY captured over M QUAL.			

Location	32°23'42.66"S 60°49'35.51"E	S57 Encoding	M_ACCY (A) M_QUAL (A)	
Screen Capture	20 ₇ 21 ₉ 14 ₉	14, 4 ₆		
Expected test results	T1765: A warning "If the feature is a M geometry" must be triggered for the old		ould not overlap a	a M_ACCY of area
Secondary Errors	None.			
Test Case No. 2	Created a hole in M_QUAL.			
Location	32°23'42.48"S 60°49'48.28"E	S57 Encoding	M_QUAL (A)	
Screen Capture				
Expected test results	T1765: A warning "If the feature is a M cell" must be triggered for the objects	created.		nustive coverage of the
Secondary Errors	T0549: 3 errors "object is not properly	covered by M_QU	AL"	
-	1	T =	1	
Dataset Name	AA500004	S-58 test No.	T1766	Type E
S-58 Description	Check for any attribute PICREP, TXTDS0 name.	C and NTXTDS that	the attribute val	ue only contains one file
Test Case No. 1	LNDMRK assigned with multiple text fil	es in PICREP, TXTD	SC and NTXTDS.	
Location	32°22'05.11"S 60°51'48.50"E	S57 Encoding	LNDMRK (P)	PICREP=US003151.TIF ;US003150.TIF TXTDSC=US003151.TX T;US003152.TXT NTXTDS=US003151.T XT;US003152.TXT

Screen Capture					
Expected test results	T1766: Three errors "illegal file name"	must be triggered.			
Secondary Errors	T0073: Three errors must be triggered (PICREP) does not contain a leading or a valid. Check that Textual Description in Nation trailing space. Check that the format of Check that Textual Description (TXTDSC the format of the attribute is valid." T0527: Three errors must be triggered f PICREP attributes exist and that the file Check that all files reference by NTXTDSC with the ENC Product Specification. Check that all files reference by TXTDSC with the ENC Product Specification.	a trailing space. Che nal Language (NTX) the attribute is valid () does not contain for the objects creat names are in accor	eck that the formation (IDS) does not cond. a leading or a tracted "Check that all dance with the EN d that the file nar	at of the attribute ntain a leading or iling space. Check Il files reference b NC Product Specif mes are in accorda	is a that y ication.
5		6.50	T4767		T 147
Dataset Name	AA500004 Check for any edge which fulfils the fol	S-58 test No.	T1767	Туре	W
S-58 Description	 it is shared by an area SBDARI it is shared by an area DEPARI it is shared by an area DEPARI UNSARE object, and it is not shared by a line DAMI that it is also shared by a DEPCNT obje 	E object with WATI E or DRGARE objec E or DRGARE objec CON, GATCON, SLC	LEV = 4 [covers ar t, with DRVAL2 \leq t, with DRVAL1 \geq CONS or LNDARE	0, and	I
Test Case No. 1	Seabed area captured without depth c	ontour around it.	T		
Location	32°22'30.47"S 60°49'40.53"E	S57 Encoding	UNSARE (A) SBDARE (A) DEPARE (A) DEPARE (A) DRGARE (A)	NATSUR=9 WATLEV=4 DRVAL2=0 DRVAL1=0 DRVAL1=1	

Screen Capture				
Expected test results	T1767: Four warnings "Zero-metre con	tour missing" mus	t be triggered.	
Secondary Errors	None.			_
Test Case No. 2	SBDARE captured surrounded by LNDA	RE, DAMCON, GAT		S.
Location	32°22'28.81"S 60°49'41.20"E	S57 Encoding	UNSARE (A) SBDARE (A) DEPARE (A) DEPARE (A) DRGARE (A) LNDARE (L) DAMCON (L) GATCON (L) SLCONS (L)	NATSUR=9 WATLEV=4 DRVAL2=0 DRVAL1=0 DRVAL1=1
Screen Capture	1			
Expected test results	T1767: Four warnings "Zero-metre con	tour missing" mus	t not be triggered	d.
Secondary Errors	None.	5 .55	- 00-1	

Test Dataset:AA500005

List of S58 Recommended ENC Validation Checks covered in this section:

S58 Test								[Descri	ption		
1771	Check for any (Maximum val (Minimum val	ue of D	RVAL2)	> VA	LDCO >		•	•			•	RVAL1, DRVAL2), but by no line DEPARE, that:
1775							which	is situ	ated wi	thin a I	DEPARE	, DRGARE or UNSARE, that:
	it has a naviga						ר אוו	IKES I	NDARE	DONT	ON or B	PYLONS object, or
		•		•	•							nd barrage]), BRIDGE, FLODOC, LNDARE, MORFAC,
	PIPOHD, PONT						•	,			•	3.17
	it is situated w							_				
1778	Check that no degrees.	LIGHTS	object	has CA	ATLIT = 1	1 [dired	ctional	functio	n] with	the ar	ngle def	ined by SECTR1 and SECTR2 being greater than 10
	_				=							
1780	Check that for "x" indicates the							he asso	ociated	attribu	ıte valu	e for NATQUA (if encoded) is correct (the symbol
	NATQUA								_	_		7
	NATSUR	1	2	3	4	5	6	7	8	9	10	
	1					х	х	х	х	х	х	
	2					х	х	х			Х	
	4	x	x	x		х	X X	х	х	х	x	+
	5	x	x	x			^		x	X		
	6	х	х	х					х	х		
	7	х	х	х					х	х		
	8								х	Х		<u> </u>
	9								x	Х		4
	14				х				^			+
	17	х	х	х	х					х		
	18								х	х	х	
1781					•		•					ip and references a LIGHTS object (except with the
	FUNCTN.	robstru	iction i	igntj, (a	8) [1100	a lightj	or (9)	[Strip ii	igntj to	r CATLI	i) as sia	ave, has a value of (33) [light support] for the attribute
1782	Check that SW	PARE o	bjects	do not	overlap).						
1783	Check that no	ohiect (of type	Area w	/ith·							
1703	WATLEV = 4 [c	-				s a DEI	PARE o	bject w	vith DR'	VAL1 >	= 0.	
	WATLEV = 5 [a											
1784	Check for any	spatial (object 1	that no	attribu	ıte HOI	RDAT, I	POSAC	C, or Ql	JAPOS	is popu	lated with a missing value (unknown).
1785	Check that onl	y LNDN	1RK obj	ects ha	aving CA	ATLMK	= 18 [v	vindmi	ll] or 19	(wind	motor],	have been encoded with CONDTN = 4 [wingless].
1786	Check that any	object	s of typ	e Area	with V	VATLEV	/ = 2 [a	lways o	dry] are	covere	ed by LN	NDARE objects of type Area.
1787	Check for any	objects	NAVLN	IE and	RECTRO	Sharin	ıg an e	dge tha	at they	have th	ne same	or reciprocal attribute value for ORIENT.
1788	Check that wh	en one	object	NAVLN	IE and o	one obj	ect RE	CTRC sl	hare an	edge,	they be	long to the same C_AGGR object.
1789	Check for any	object [OWRTC	L, NAV	LNE, RE	CTRC a	and RC	RTCL of	f type L	ine wit	h a valu	e for ORIENT encoded, that the orientation of the
	-										tribute	value (or the reciprocal value) encoded in ORIENT.
1790	Check for any SECTR1 and SE		_			ded wit	th an e	xplicit	value, t	hat:		
	it is not aggree			•	•	NF in a	collec	tion oh	niect C	AGGR	or	
		•							-			not aggregated to a RECTRC or a NAVLNE in a
	collection obje	ct C_A	GGR.									
1791	•			_		-	_		•			ck] that a RECTRC with CATTRK=1 [based on a system
1702	of fixed marks	_	•			•						rsa. there is at least one LIGHTS which is not encoded
1793	with	ווומטנפו /	siave I	eiation	isiiip Wi	шспе	ierence	es one	01 11101	LIGH	ı <i>s,</i> ıııal	there is at least one Light 3 willeth is not encoded
	LITVIS = 6 [visi	bility de	liberat	ely res	tricted]	or LIT	VIS = 7	[obscu	red].			

1794	Check for any LIGHTS object having CATLIT = 1 [directional function] and which is a slave in a master/slave relationship, that the master object is not a BOYCAR, BOYINB, BOYLAT, BOYSAW, BOYSPP, LITFLT or LITVES.
1795	Check for any master object in a master/slave relationship containing temporal attribution (DATEND, DATSTA, PEREND, PERSTA) that its slave objects also contain the same temporal attributes.
1797	Check that none of the following feature object and geometric primitive combinations, which do not display in ECDIS, are present in the dataset: BRIDGE of type point; DAMCON of type point, with attribute CATDAM ≠ 3; GRIDRN of type point; PIPSOL of type point; PRDARE of type point, with attribute CATPRA = [Empty (null) value]; RAPIDS of type point; ROADWY of type point; RUNWAY of type point; SLOGRD of type area, with attributes CATSLO = 1, 2, 3, 4, 5, 7 and CONRAD ≠ 1, or CATSLO = [Empty (null) value]; TUNNEL of type point; VEGATN of type point or area, with attribute CATVEG = 1, 10, 11, 12, [Empty (null) value]; and WATFAL of type point.

Dataset Name	AA500005	S-58 test No.	T1771	Туре	W						
S-58 Description	Check for any edge which is shared DRVAL2), but by no line DEPARE, that • (Maximum value of DRVAL2) • (Minimum value of DRVAL1)	> VALDCO > (Minir			PRVAL1,						
Test Case No. 1	Depth contour with wrong VALDCO as	signed.									
Location	32°24'06.59"S 60°50'09.00"E	DEPARE (A) DRVAL1=1.8 DRVAL2=3.6 DEPCNT (L) VALDCO=5.4 DRVAL1=3.6 DRVAL2=5.4 DRVAL2=5.4									
Screen Capture	T1771: A warning "depth contour does	not correspond to	donth area limit	t" must be trigge	rod.						
Expected test results	- '	not correspond to	depth area iimit	must be trigge	ea.						
Secondary Errors	None										
Detect Name	AAF0000F	C FO test No	T1775	Time	14/						
Dataset Name	AA500005	S-58 test No.	T1775	Туре	W						
S-58 Description	Check for any equipment object (see LUNSARE, that: it has a navigational aid struc it shares the same spatial obj PYLONS object, or it is situated on a line CBLOHI barrage]), BRIDGE, FLODOC, I	ture as master, or ect as a point FLOD D, CONVYR, COALN LNDARE, MORFAC, ONVYR or BRIDGE	OOC, HULKES, LNI E, DAMCON (wit PIPOHD, PONTO object.	DARE, PONTON o h CATDAM = 3 [f N or SLCONS obj	r ood						
Test Case No. 1	10 objects (as per UOC 12.1.1) are cap supporting structure.	tured in DEPARE, D	RGARE and UNS	ARE without any							
			DAYMAR(P)								

						UNSARE (A	۹)			
Screen Capture	2 ₇	1 3 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6								
Expected test results	T1755: 30 warnings "equi	=								
Secondary Errors	T1722: 27 additional warn feature objects created. T0054: 3 additional warn triggered related to the feature.	ngs "objec	t is not c	overed by						
5					<u> </u>				Τ_	I
Dataset Name	AA500005		S-5	8 test No	٠.	T1778			Type	W
S-58 Description	Check that no LIGHTS obj SECTR1 and SECTR2 being				al fun	ction] with	the a	angle d	efined by	
Test Case No. 1	Light captured with differ	ence betw	een SECT	R1 and SI	ECTR:	2 being gre	eater	than 10	degrees.	
Location	32°24'29.00"S 60°50'18.2	20"E	S57	Encoding		LIGHTS (P)		CATLIT SECTR SECTR		
Screen Capture	DDD	0,1								
Expected test results	T1778: A warning "sector	is too wid	e for a di	rectional l	ight"	must be t	riggei	red.		
Secondary Errors	None									
Dataset Name	AA500005		S-5	8 test No		T1780			Туре	W
S-58 Description	Check that for a SBDARE (NATQUA (if encoded) is combinations):	correct (

	NATSUR								1				
	1					х	х	х	х	х	х	1	
	2					X	X	X	^	^	X	-	
	3	х	х	х		X	X	X			X	1	
	4	х	X	х			х		х	х	X	1	
	5	х	Х	Х					х	х			
	6	х	X	х					х	Х			
	7	х	X	X					X	X			
	8 9								X	X		1	
	11								X	Х		-	
	14				х				<u> </u>			1	
	17	х	Х	х	х					х		1	
	18								Х	Х	Х		
Test Case No. 1	78 objects (o	ther t	han d	comb	inatio	ons sł	nown	in ta	ble) a	re ca	ptured	as SBDA	ARE points.
Location	32°24'03.77"	S 60°	50'3:	1.26"	E		S57	' Enco	oding		SBDAF	RE (P)	78x
Screen Capture	11½M.* bkM.* bkCy. *sf6. *vSi.* sf6t. syG.* *syP. *hP.* *hP.* *place *cR.* *hR.94 *** *bkLv.* *cCo.*vCo.*soSh. *soR.* mR.												
Expected test results	T1780: 78wa	rnings	"inc	onsis	tent	quali	fiers:	'nats	ur' an	nd 'na	itqua'"	must be	triggered.
Secondary Errors	None												
Test Case No. 2	78 objects (o	ther t	han d	comb	inatio	ons sł	nown	in ta	ble) c	aptuı	red as	SBDARE	lines.
Location	32°24'42.86"	S 60°	49'44	4.05"	E		S57	' Enco	oding		SBDAF	RE (L)	78x
Screen Capture	### bks. sfs. FIR soG. hG. meb. bkeb. soR. hR. fLv. cl.v. soGo. veo. hee sy9h-sfSh. bkR. soR. bkR.												
Expected test results	T1780:78 wa	rnings	"inc	onsis	tent	quali	fiers:	'nats	ur' an	nd 'na	itqua'"	must be	triggered.
Secondary Errors	None												
Test Case No. 3	78 objects (other than combinations shown in table) captured SBDARE areas with attributes assigned.												
	0												
Location	32°24'35.19"	S 60°	50'06	5.54"	E_		S57	' Enco	oding		SBDAF	RE (A)	78x

Screen Capture	4 ₅ 3 2 6 6 7 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8			
Expected test results	T1780: 78warnings"inconsistent qu	ıalifiers: 'natsur' and 'ı	natqua'" must be	triggered.
Secondary Errors	None			
Dataset Name	AA500005	S-58 test No.	T1781	Type W
S-58 Description	Check that any BUISGL or LNDM references a LIGHTS object (except (9) [strip light] for CATLIT) as slave,	t with the value of (6) has a value of (33) [lig	[air obstruction ght support] for the	light], (8) [flood light] or
Test Case No. 1	LNDMRK and BUISGL captured attr	ibute FUNCTN not ass	1	
Location	32°24'50.71"S 60°50'05.51"E	S57 Encoding	BUISGL (P) LNDMRK (P) LIGHTS (P)	FUNCTN=UNDEFINED FUNCTN=UNDEFINED
Screen Capture				
Expected test results	T1781: A warning "light support fur T1781: A warning "light support fur	•		
Secondary Errors	None			
Test Case No. 2	We have captured LIGHTS with attr	ibutes CATLIT=6, 8 an		
Location	32°24'50.67"S 60°50'07.19"E	S57 Encoding	BUISGL (P)	CATLIT=6 CATLIT=8 CATLIT=9

Screen Capture						
Expected test results	T1781: Three warnings "light support for triggered.	•				
Secondary Errors	None					
Dataset Name	AA500005	S-58 test No.	T1782	Туре	W	
S-58 Description	Check that SWPARE objects do not ove	rlap.				
Test Case No. 1	Swept area captured overlapping with another swept area.					
Location	32°23'57.78"S 60°50'29.16"E	S57 Encoding	SWPARE (A)			
Screen Capture						
Expected test results	T1782: A warning "object overlaps with	n Swept area" must	t be triggered.			
Secondary Errors	T1655: One additional error "no SWPARE object sharing the same geo-spatial position and geometry as a M_QUAL object contains the attribute POSACC if the SOUACC is encoded" must be triggered related to the feature objects created					
Dataset Name	AA500005	S-58 test No.	T1783	Туре	W	
S-58 Description	Check that no object of type Area with WATLEV = 4 [covers and uncovers] ove WATLEV = 5 [awash] overlaps a DEPAR	rlaps a DEPARE obj	ect with DRVAL1	1		
Test Case No. 1	Shoreline Construction areas captured	with WATLEV=4 ar	nd 5.	,		
Location	32°24'22.52"S 60°50'29.07"E	S57 Encoding	SLCONS(A)	WATLEV=4 WATLEV=5		

Screen Capture	0,			
Expected test results	T1783: Three warnings "awash object u	under water" must	be triggered.	
Secondary Errors	None			
Dataset Name	AA500005	S-58 test No.	T1784	Type W
S-58 Description	Check for any spatial object that no at missing value (unknown).	ttribute HORDAT, I	POSACC, or QUA	POS is populated with a
Test Case No. 1	Land elevation, Road and Railway lines	captured with attr	ibutes.	
Location	32°25'14.62"S 60°49'58.03"E	S57 Encoding	LNDELV (L) ROADWY(L) RAILWY(L)	HORDAT=UNKNOWN POSACC =UNKNOWN QUAPOS= UNKNOWN
Screen Capture				
Expected test results	T1784: Three warnings "Check for any QUAPOS is populated with a missing va	alue (unknown)." m	nust be triggered.	•
Secondary Errors	T1502: One error "prohibited attribute created.	nordat must be t	inggered related	to the reature objects
-	1.450005			T_ T
S-58 Description	AA500005 Check that only LNDMRK objects havin encoded with CONDTN = 4 [wingless].	S-58 test No. g CATLMK = 18 [wi	T1785 ndmill] or 19 [win	Type W
Test Case No. 1	Land Mark captured with CONDTN=4 a	nd CATLMK=3.		
Location	32°25'32.12"S 60°49'50.68"E	S57 Encoding	LNDMRK (P,L&A)	CATLMK=3 CONDTN=4 CONVIS=1

Screen Capture							
Expected test results	T1785: Three warnings "LNDMRK with or 19[wind motor] "must be triggered.	CONDTN=4[wingle	ss] doesn't have	CATLMK	= 18[win	dmill]	
Secondary Errors	None						
Dataset Name	AA500005	S-58 test No.	T1786		Type	W	
S-58 Description	Check that any objects of type Area wir of type Area.	th WATLEV = 2 [alv	vays dry] are cov	ered by	LNDARE	objects	
Test Case No. 1	Shoreline Construction areas captured with WATLEV=2.						
Location	32°25'32.22"S 60°49'33.25"E	S57 Encoding	SLCONS (A)	WATLE	V=2		
Screen Capture	27						
Expected test results	T1786: A warning "Object of type Are must be triggered.	a with WATLEV=2	[always dry] are	n't cover	red by LN	NDARE.	
Secondary Errors	None						
Dataset Name	AA500005	S-58 test No.	T1787		Туре	W	
S-58 Description	Check for any objects NAVLNE and REC attribute value for ORIENT.			the sam			
Test Case No. 1	Recommended track and Navigation lir	ne captured with di	ifferent ORIENT v	alues.			
Location	32°24'27.50"S 60°50'13.86"E	S57 Encoding	RECTRC (L) NAVLNE (L)		T=116° T=115°		

Screen Capture				
Expected test results	T1787: A warning "NAVLNE object and values." must be triggered.	coinciding RECTRC	have different O	RIENT attribute
Secondary Errors	T1683: 1 additional warning "orient' at <recommended track="">" must be trigge</recommended>			
Detect Name	AAF0000F	C FO toot No	T1700	True a NA/
Dataset Name	AA500005	S-58 test No.	T1788	Type W
S-58 Description	Check that when one object NAVLNE same C_AGGR object	and one object RE	CTRC share an ed	dge, they belong to the
Test Case No. 1	Recommended track and Navigation lir	ne are captured wit	h different C_AG	GR.
Location	32°24'00.17"S 60°50'48.44"E	S57 Encoding	RECTRC (L) NAVLNE (L) C_AGGR	
Screen Capture	3 1 ₂	,		
Expected test results	T1788: A warning "NAVLNE object and objects." must be triggered.	coinciding RECTRC	have connection	to different C_AGGR
Secondary Errors	None			
Data and N	AA500005	6.50	T4700	-
Dataset Name	AA500005 Check for any object DWRTCL, NAVLNE	S-58 test No.	T1789	Type W
S-58 Description	encoded, that the orientation of the degrees) with the attribute value (or the	spatial geometry	is consistent (i.e	deviation less than 5
Test Case No. 1	DWRTCL, NAVLNE, RECTRC and RCRTCL			
Location	32°24'00.90"S 60°50'15.78"E	S57 Encoding	NAVLNE (L) DWRTCL (L) RECTRC (L) RCRTCL (L)	

Screen Capture	10 ₃ 15 ₈	13,				
Expected test results	T1789: Four warnings "'ORIENT' and or triggered.	ientation of the sp	atial geometry d	o not match" mus	t be	
Secondary Errors	None					
Dataset Name	AA500005	S-58 test No.	T1790	Туре	W	
S-58 Description	 Check for any LIGHTS having ORIENT encoded with an explicit value, that: SECTR1 and SECTR2 are not populated, or it is not aggregated to a RECTRC or a NAVLNE in a collection object C_AGGR, or The structure object which is the master of this LIGHT in a master/slave relationship is not aggregated to a RECTRC or a NAVLNE in a collection object C_AGGR. 					
Test Case No. 1	Light captured with SECTR1 and SECTR			_		
Location	32°25'15.75"S 60°49'43.94"E	S57 Encoding	LIGHTS (P)	SECTR1=80 SECTR2=85 ORIENT=85		
Screen Capture	6 ₇					
Expected test results	T1790: A warning "Oriented LIGHTS car	n't have SECTR1/SE	CTR2 values." m	ust be triggered.		
Secondary Errors	None					
Test Case No. 2	Recommended track, Navigation line a	nd LIGHTS with att	ribute ORIENT ca	ptured.		
Location	32°25'14.84"S 60°49'38.89"E	S57 Encoding	LIGHTS (P) NAVLNE (L) RECTRC (L) C_AGGR	ORIENT=85		

Screen Capture		67		
Expected test results	T1790: A warning "Oriented LIGHTS			
Secondary Errors	T1791: A warning "for any NAVLNE track] that a RECTRC with CATTRK= geometry used for the NAVLNE, or created. T1722: A warning "equipment with feature objects created. T1775: A warning "equipment with feature objects created.	1 [based on a system ovice versa" must be trought	of fixed marks] s iggered related t >" must be trigg	hares a part of the line to the feature objects ered related to the
Test Case No. 3	Recommended track, Navigation lin	ie, PILPNT and LIGHTS	with attribute C	ORIENT captured.
Location	32°25'14.85"S 60°49'42.00"E	S57 Encoding	LIGHTS (P) NAVLNE (L) RECTRC (L) PILPNT (P) C_AGGR	ORIENT=85
Screen Capture	67			
Expected test results	T1790: A warning "Oriented LIGHTS	can't be a part of agg	regation" must	be triggered.
Secondary Errors	T1791: A warning "for any NAVLNE track] that a RECTRC with CATTRK= geometry used for the NAVLNE, or created. T1722: A warning "objects hierarch < Light>" must be triggered related T516: A warning "If the master object." same node as the master object." s	1 [based on a system of vice versa" must be truy can be made out of to the feature objects ect is of type point, che	of fixed marks] s iggered related t "structure" <pile created eck that the slav</pile 	hares a part of the line to the feature objects > and "equipment" e object is sharing the

	T1775: A warning "equipment witho	out a structure in the	water <light>" m</light>	nust be triggered related
	to the feature objects created.			
Dataset Name	AA500005	S-58 test No.	T1791	Type W
S-58 Description	Check for any NAVLNE having CAT RECTRC with CATTRK=1 [based on used for the NAVLNE, and vice versals]	a system of fixed ma	arks] shares a pa	
Test Case No. 1	Recommended track line captured v Navigation lines captured with attrib			
Location	32°25'03.94"S 60°49'41.42"E	S57 Encoding	RECTRC (L) NAVLNE (L)	CATTRK=1 CATNAV =3
Screen Capture	13 ₄ 10 ₃ 12 ₄	3		
Expected test results	T1791: A warning "RECTRC with CAT must be triggered. T1791: A warning "NAVLNE with CAT must be triggered.			
Secondary Errors	None			
Dataset Name	AA500005	S-58 test No.	T1793	Type W
S-58 Description	Check for any master/slave relation least one LIGHTS which is not encod 7 [obscured].			LIGHTS, that there is at
Test Case No. 1	BOYLAT, LIGHTS captured with attrib	outes LITVIS= 6 and 7	•	
Location	32°24'40.47"S 60°49'36.08"E	S57 Encoding	LIGHTS (P) BOYLAT (P)	LITVIS = 6 and 7
Screen Capture	16 ₁	•		
Expected test results	T1793: Two warnings "LIGHTS object triggered.	t no visible lights in n	naster/slave hiera	archy" must be

Secondary Errors	None				
Dataset Name	AA500005	S-58 test No.	T1794	Туре	W
S-58 Description	Check for any LIGHTS object havir master/slave relationship, that the BOYSAW, BOYSPP, LITFLT or LITVES	e master object is no	-		
Test Case No. 1	BOYCAR, BOYINB, BOYISD, BOYLAT, to LIGHTS with attribute CATLIT=1.	BOYSAW, BOYSPP, LI	TFLT and LITVES	are captured as m	aster
Location	32°24'50.78"S 60°49'29.80"E	S57 Encoding	BOYCAR (P) BOYINB (P) BOYISD (P) BOYLAT (P) BOYSAW (P) BOYSPP(P) LITFLT (P) LITVES (P) LIGHTS (P)	CATLIT=1	
Screen Capture		****			
Expected test results	T1794: 8 warnings "LIGHTS object h triggered.	as directional light an	id is set on a floa	ating structure." m	ust be
Secondary Errors	None				
Dataset Name	AA500005	S-58 test No.	T1795	Туре	W
S-58 Description	Check for any master object in (DATEND, DATSTA, PEREND, PERS attributes.	TA) that its slave o	bjects also con	ing temporal attr tain the same te	mporal
Test Case No. 1	BCNSPP captured with attributes Date temporal attributes.	ATEND, DATSTA, PERE			
Location	32°23'56.84"S 60°49'34.39"E	S57 Encoding	LIGHTS (P) BCNSPP (P)	DATEND= 2013 DATSTA= 20110 PEREND= 20090 PERSTA= 20110 STATUS=5 DATEND=20120)611)411

Screen Capture				
Expected test results	T1795: Four warnings "temporal attrib different." must be triggered for the o		ject bcnspp and sla	ve object lights is
Secondary Errors	None			
			_	
Dataset Name	AA500005 Check that none of the following features.	S-58 test No.	T1797	Type W
S-58 Description	not display in ECDIS, are present in the BRIDGE of type point; DAMCON of type point, with GRIDRN of type point; PIPSOL of type point, with at RAPIDS of type point; ROADWY of type point; RUNWAY of type point; SLOGRD of type area, with at CATSLO = [Empty (null) value] TUNNEL of type point; VEGATN of type point or area and WATFAL of type point.	attribute CATDAM ttribute CATPRA = tributes CATSLO = :]; a, with attribute CA	[Empty (null) value] 1, 2, 3, 4, 5, 7 and Co	ONRAD ≠ 1, or
Test Case No. 1	Above listed objects with attributes ca	ptured.		
Location	32°24'37.84"S 60°51'11.46"E	S57 Encoding	DAMCON (P) VEGATN (P) VEGATN (P) VEGATN (P) VEGATN (P) VEGATN (P) VEGATN (P) PRDARE(P)	CATDAM=1 CATDAM=2 CATVEG= <empty> CATVEG=1 CATVEG=10 CATVEG=11 CATVEG=12 CATPRA=<empty> CATSLO=<empty></empty></empty></empty>

Screen Cantura	SLOGRD (A) CATSLO=1 SLOGRD (A) CATSLO=2 SLOGRD (A) CATSLO=3 SLOGRD (A) CATSLO=4 SLOGRD (A) CATSLO=5 SLOGRD (A) CATSLO=7
Screen Capture	
Expected test results	T1797: 25 warnings "the object cannot be displayed in ECDIS." must be triggered.
Secondary Errors	None

Test Dataset:AA500006

List of S58 Recommended ENC Validation Checks covered in this section:

S58 Test	Description
58	Check that no SBDARE object of type Line bounds a SBDARE object of type Area.
59	Check that no OBSTRN object of type Line bounds an OBSTRN object of type Area.
548	Check that M_COVR meta objects provide exhaustive non-overlapping coverage of the whole cell.
1533	Check that no DRGARE object has a value for SOUACC that is equivalent to or degrades the accuracy indicated by the attribute value of CATZOC on the meta object M_QUAL.
1534	Check that no UWTROC object has a value for SOUACC that is equivalent to or degrades the accuracy indicated by the attribute value of CATZOC on the meta object M_QUAL.
1536	Check that no WRECKS object has a value for SOUACC that is equivalent to or degrades the accuracy indicated by the attribute value of CATZOC on the meta object M_QUAL.
1538	Check that no OBSTRN object has a value for SOUACC that is equivalent to or degrades the accuracy indicated by the attribute value of CATZOC on the meta object M_QUAL.
1637	Check that any PYLONS object of type Area with a WATLEV attribute value of 1 [partly submerged at high water], 2 [always dry] or 6 [subject to inundation or flooding] is covered by a LNDARE object of type Area.
1683	If only one RECTRC and only one NAVLNE belong to the same C_AGGR collection object, check that the RECTRC and NAVLNE objects have the same or reciprocal attribute value for ORIENT.
1684	Check for any measured distance that each transit line and its beacons are aggregated into collection objects C_AGGR, and that these collection objects, along with the track to be followed, are aggregated into another C_AGGR object.
1685	Check that any object encoded as TSSBND is the outer limit of a traffic lane/separation scheme roundabout.
1686	Check that any object encoded as TSELNE separates either of the following: 1) Two traffic lanes, 2) Traffic lane and Inshore traffic zone.
1687	Check that any object encoded as TSEZNE separates either of the following: 1) Two traffic lanes, 2) Traffic lane and Inshore traffic zone, 3) Centre of roundabout.
1688	Check that any object encoded as TSSCRS encodes a crossing between at least four traffic lanes.
543	Check that any TS_TSP attribute value conforms to the correct structure, (i.e. values separated by commas).
1559	Check that any T_NHMN object is associated (using the collection object C_ASSO with a T_TIMS or T_HMON object).
1562	Check that any TS_PNH object is associated (using the collection object C_ASSO) with a TS_TIS or TS_PRH object.
1605	Check that any ICEARE object is covered by a LNDARE or an UNSARE or a DEPARE object.
1625	Check that, if one of the component objects (AIRARE or RUNWAY) of an airfield is encoded using a collection object, that only C_ASSO is used.
1729	Check for any geo object forming part of a navigational aid (buoy or beacon), that the combination of characteristics for structure, topmark and lights conforms to the IALA system being used (given in MARSYS of the geo object or, if not encoded, in MARSYS of the Meta-object M_NSYS). This check must not be applied to objects having a value of (9) [no system] or (10) [other system] for the attribute MARSYS, and to slave objects if the master object has a value of (9) [no system] or (10) [other system] for the attribute MARSYS. Optional attributes may be either encoded or undefined. Mandatory attributes must be encoded with explicit values (i.e. not "unknown").

Dataset Name	AA500006	S-58 test No).	T0058	Туре	W
S-58 Description	Check that no SBDARE object of type Line bound	ds a SBDARE obje	ct of t	ype Area.		
Test Case No. 1	Linear SBDARE object created bounding SBDARI	area object.				
Location	32°23'52.16"S 60°48'46.25"E	S57 Encoding	SBD (A&	ARE L)	NATSUR= WATLEV:	-
Screen Capture	Radarda Araba Arab					
Expected test results	T0058: A warning "edge is shared between linea	ar and area 'sbdar	e'" m	ust be trig	gered.	
Secondary errors	T1671: One additional error "Check for any line geometry of an area object of the same class an SORDAT and SCAMIN" must be triggered related	d attribute value:	s exce	pt for attr		
Dataset Name	AA500006	S-58 test No).	T0059	Туре	W
S-58 Description	Check that no OBSTRN object of type Line boun	ds an OBSTRN ob	ject o	f type Area	 3.	
Test Case No. 1	Linear OBSTRN object created bounding OBSTR	N area object.				
Location	32°24'04.48"S 60°48'14.20"E	S57 Encoding	OBS &L)	STRN (A	CATOBS= WATLEV: QUASOU VALSOU= OWN	=3 =2

Screen Capture				
Expected test results	T0059: A warning "edge is shared between linea	ar and area 'obstr	n'" must be trig	gered.
Secondary errors	T1671: One additional error "Check for any line geometry of an area object of the same class ar SORDAT and SCAMIN" must be triggered related	nd attribute values	s except for attr	
		T		
Dataset Name	AA500006	S-58 test No	T0548	Type E
S-58 Description	Check that M_COVR meta objects provide exha	ustive non-overla	pping coverage	of the whole cell.
Test Case No. 1	M_COVR objects with CATCOV=1 and CATCOV=	2 captured overla	pping each othe	er.
Location	32°23'55.33"S 60°46'33.24"E	S57 Encoding	M_COVR(A) M_COVR(A)	CATCOV=1 CATCOV=2
Screen Capture	8 ₂			
Expected test results	T0548: An error "object is overlapped by next N T0548: An error "is overlapped by previous M_C	_		
Secondary errors	T0019: Three additional warnings "Check that a borders (i.e. limits of M_COVR with CATCOV = 1 boundary truncated by the data limit]" must be T0519: One additional error "Check Group 1 covto the feature objects created. T1726: One additional error "Check that the entering of the content of	II spatial edges wi [coverage availal triggered related verage and consis	hich coincide wi ble]) are using U to the feature o tency" must be	SAG = 3 [Exterior objects created. triggered related

Dataset Name	M_NSYS objects, with a value for the attribut operation" must be triggered related to the formula to the feature objects created. T0042: One additional error "inconsistency of related to the feature objects created. T0554: One additional error "Check Group 1 of the feature objects created. T0501: One additional error "Check that cells feature objects created. AA500006	eature objects creat 'm_covr' or TG1 co overage and consis are rectangular" m S-58 test No	overage" must be ust be triggered T1533	e triggered triggered related related to the Type E
S-58 Description Test Case No. 1	Check that no DRGARE object has a value accuracy indicated by the attribute value of C Captured DRGARE object with attribute SOUA	ATZOC on the meta	object M_QUA	L.
Location	value of CATZOC on the meta object M_QUAI 32°25'14.65"S 60°48'40.00"E	S57 Encoding	M_QUAL(A) DRGARE(A)	CATZOC=1 DRVAL1=20 SOUACC=5
Screen Capture				
Expected test results	T1533: An error "redundant 'souacc' is define	d by 'm_qual' in Dro	edged area" mu	st be triggered.
Secondary errors	None.			
Dataset Name	AA500006	S-58 test No	T 1534	Type E
S-58 Description	Check that no UWTROC object has a value for accuracy indicated by the attribute value of C			•
Test Case No. 1	Captured UWTROC object with attribute SOU value of CATZOC on the meta object M_QUAL			Ţ
Location	32°25'11.24"S 60°48'42.90"E	S57 Encoding	M_QUAL(A) UWTROC(P)	CATZOC=1 QUASOU=1 SOUACC=5 VALSOU=21 WATLEV=3

Screen Capture	(21)					
Expected test results	T1534: An error "redundant 'souacc' is defined by triggered.	oy 'm_qual' in	underwa	ater/awash	n rock" mu	st be
Secondary errors	None.					
D	AAF00005	6.50.		T4526	T_	T _
Dataset Name	AA500006	S-58 tes		T1536	Туре	E
S-58 Description	Check that no WRECKS object has a value for SO accuracy indicated by the attribute value of CAT		•	-	-	
Test Case No. 1	Captured WRECKS object with attribute SOUACC value of CATZOC on the meta object M_QUAL.	C that degrade	es the acc	curacy indi	cated attri	bute
Location	32°25'16.55"S 60°48'34.71"E	S57 Encodir	WR	QUAL(A) ECKS (P)	CATZOC= CATWRK: SOUACC= VALSOU= WATLEV= QUASOU	=2 =5 :21 =3
Screen Capture	(21)					
Expected test results	T1536: An error "redundant 'souacc' is defined b	oy 'm_qual' in	Wreck" ı	must be tri	ggered.	
Secondary errors	None.					
Dataset Name	AA500006	S-58 tes	t No.	T1538	Туре	E

S-58 Description	Check that no OBSTRN caccuracy indicated by the	•		•	_
Test Case No. 1	Captured OBSTRN object value of CATZOC on the		C that degrades	the accuracy ind	icated attribute
Location	32°25'11.20"S 60°48'34	.36"E	S57 Encoding	M_QUAL(A) OBSTRN(P)	CATZOC=1 SOUACC=5 VALSOU=21 WATLEV=3 QUASOU=6
Screen Capture		(21)			
Expected test results	T1538: An error "redund	dant 'souacc' is defined	by 'm_qual' in C	Obstruction" must	t be triggered.
Secondary errors	None.				
			1		
Dataset Name	AA500006		S-58 test I		Type E
S-58 Description	Check that any PYLONS at high water], 2 [always object of type Area.			-	
Test Case No. 1	Captured PYLONS (A) ob	jects with attribute WA	TLEV=1, 2 or 6	without covered	by a LNDARE.
Location	32°24'06.10"S 60°48'20.	59"E	S57 Encoding	PYLONS(A)	CATPYL=unkno wn WATLEV=1,2 or 6

Screen Capture	1 ₈			
Expected test results	T1637: Three errors "pylons object is covered b	v prohibited 'den	are" must be tri	ggered.
Secondary errors	T1786: One additional warning "Check that any are covered by LNDARE objects of type Area" m created.	objects of type A	rea with WATLE	EV = 2 [always dry]
Dataset Name	AA500006	S-58 test No	T 1683	Type W
S-58 Description	If only one RECTRC and only one NAVLNE belon that the RECTRC and NAVLNE objects have the			-
Test Case No. 1	Captured NAVLNE and RECTRC objects having the	ne different value	of ORIENT.	
Location	32°24'02.60"S 60°48'27.83"E	S57 Encoding	NAVLNE(L) RECTRC(L)	CATNAV=3 ORIENT=335 CATTRK=1 ORIENT=336 TRAFIC=3
Screen Capture	7 ₃ 048 deg ⁶ 7	11 14 ₈		
Expected test results	T1683: A warning "orient' attribute conflicts wi	th that in 'navlne	'" must be trigg	ered.
Secondary errors	T0050: One additional warning "Check that all t RECTRC with CATTRK=1 [based on a system of fi must be triggered related to the feature objects T1787: Two additional warnings "Check for any	ixed marks], or Na s created.	AVLNE are on a	straight line"

	they have the same or reciprocal attribute value	e for ORIENT" mus	st be tr	riggered r	elated to t	:ne
	feature objects created.					
Dataset Name	AA500006	S-58 test No		T1684	Туре	E
S-58 Description	Check for any measured distance that each transit line and its beacons are aggregated into collection objects C_AGGR, and that these collection objects, along with the track to be followed are aggregated into another C_AGGR object.					owed,
Test Case No. 1	Captured NAVLNE and BCNSPP objects with attr	ributes CATNAV a	nd CAT	ΓSPM.		
Location	32°23'55.15"S 60°48'03.02"E	S57 Encoding		LNE(L) SPP(P)	CATNAV= ORIENT= wn INFORM= Measure distance= metres CATSPM=	unkno = d =145
	111112		_			
Screen Capture	7,8	J.?				
Screen Capture Expected test results	7,9		NAV=2	belongs	to a C_AGG	GR
	T1684: Three warnings "Check that any NAVLNE		NAV=2	belongs	to a C_AGG	GR .
Expected test results Secondary errors	T1684: Three warnings "Check that any NAVLNE collection object" must be triggered. None.	object with CATN				
Expected test results	T1684: Three warnings "Check that any NAVLNE collection object" must be triggered.	S-58 test No		T1685	Туре	E
Expected test results Secondary errors Dataset Name	T1684: Three warnings "Check that any NAVLNE collection object" must be triggered. None. AA500006 Check that any object encoded as TSSBND is the	S-58 test No	raffic la	T1685 ane/sepa	Type ration sche	E eme

		´5			1
Screen Capture	161	5			
Expected test results	T1685: An error" traffic separation scheme bour	ndary without the	scheme" must	be trigger	ed.
Secondary errors	None.				
Dataset Name	AA500006	S-58 test No	T1686	Туре	E
S-58 Description	Check that any object encoded as TSELNE separa Traffic lane and Inshore traffic zone.	ates either of the	following: 1) Tv	wo traffic la	anes, 2)
Test Case No. 1	Captured TSELNE object without any traffic lane	s and inshore tra	ffic zone.	•	
Location	32°24'22.36"S 60°48'29.28"E	S57 Encoding	TSELNE (L)		
Screen Capture	97				
Expected test results	T1686: An error "traffic separation line does not	separate anythir	ng" must be trig	gered.	
Secondary errors	None.				
Dataset Name	AA500006	S-58 test No	T1687	Туре	W
S-58 Description	Check that any object encoded as TSEZNE separ 2) Traffic lane and Inshore traffic zone, 3) Centre		following: 1) Tv	wo traffic la	anes,
Test Case No. 1	Captured TSEZNE object which does not separat	e two traffic lane	s, traffic lane ar	nd inshore	traffic
Location	zone and centre of roundabout. 32°24'15.46"S 60°47'45.97"E	S57 Encoding	TSEZNE (A)		

Screen Capture	85			
Expected test results	T1687: A warning "Check that any object encod Two traffic lanes, 2) Traffic lane and Inshore tra- triggered.			
Secondary errors	None.			
Dataset Name	AA500006	S-58 test No	T1688	Type E
S-58 Description	Check that any object encoded as TSSCRS encoded	des a crossing bet	ween at least fo	ur traffic lanes.
Test Case No. 1	Captured TSSCRS object without any traffic lane			
Location	32°24'10.26"S 60°47'15.08"E	S57 Encoding	TSSCRS (A)	
Screen Capture				
Expected test results	T1688: An error "incomplete traffic separation s	scheme crossing"	must be trigger	ed.
Secondary errors	None.			
Dataset Name	AA500006	S-58 test No	T0543	Type E
S-58 Description	Check that any TS_TSP attribute value conforms commas).	s to the correct st	ructure, (i.e. val	
Test Case No. 1	Captured TS_PAD object with attribute TS_TSP v	values improperly	/.	
Location	32°24'57.45"S 60°47'05.16"E	S57 Encoding	TS_PAD(P)	TS_TSP=
			/- /	

				63230, Darwin, H W,124,2.2,128, 2.1,125,2.9,116 ,2.8,110,2.0,09
				5,0.6,020,0.2,3 20,1.9,315,2.1, 300,2.8,268,2.6 ,200,2.4,1652.5
Screen Capture	◆			
Expected test results	T0543: An error "bad format of 'ts_tsp' in tidal s	tream panel data	" must be trigge	ered.
Secondary errors	T0073: One additional warning "Check that no a space, and that no attribute of type List contains feature objects created.			
Dataset Name	AA500006	S-58 test No	. T1559	Type E
S-58 Description	Check that any T_NHMN object is associated (us T_HMON object).			
Test Case No. 1	Captured T_NHMN (P, A) object, without associa objects.	ated a collection	object with a T_	TIMS or T_HMON
Location	32°25'29.81"S 60°48'19.92"E	S57 Encoding	T_NHMN(P &A)	
	0		,	
Screen Capture	201			

Secondary errors	None.			
Test Case No. 2	Captured T_NHMN (P, A) object associated a co T_NHMN (A) associated a collection ob T_NHMN (P) associated a collection ob	ject with a T_TIM		
Location	32°25'30.28"S 60°48'32.33"E	S57 Encoding	T_NHMN(P, A) T_TIMS(P) T_HMON(A)	
Screen Capture	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2			
Expected test results	T1559: 2errors "object must be associated using	g 'c_asso'" must n	ot be triggered.	
Secondary errors	None.			
Dataset Name	AA500006	S-58 test No	T1562	Type E
S-58 Description	Check that any TS_PNH object is associated (usin TS_PRH object.	ng the collection	object C_ASSO)	with a TS_TIS or
Test Case No. 1	Captured TS_PNH (P, A) object, without associated objects.	ted a collection o	bject with a TS_	
Test Case No. 1 Location	objects. 32°25'27.91"S 60°47'53.54"E	s57 Encoding	TS_PNH (P	TIS or TS_PRH T_MTOD=unkn own T_THDF=1
	objects.		TS_PNH (P	T_MTOD=unkn

Secondary errors	None.				
Test Case No. 2	 Captured TS_PNH (P, A) object associated a collection object. TS_PNH (A) associated a collection object with a TS_TIS (A) object. TS_PNH (P) associated a collection object with a TS_PRH (A) object. 				
Location	32°25'32.43"S 60°47'35.81"E	S57 Encoding	TS_PNH(P) TS_TIS(P) TS_PRH(P)		
Screen Capture	11 ₈ 11 ₂ • • • • • • • • • • • • • • • • • • •	10			
Expected test results	T1562:2errors" object must be associated using	'c_asso' "must no	ot be triggered.		
Secondary errors	None.				
Dataset Name	AA500006	S-58 test No.	. T1605 Type E		
S-58 Description	Check that any ICEARE object is covered by a LN	IDARE or an UNSA	RE or a DEPARE object.		
Test Case No. 1	Captured ICEARE object overlapping PONTON o	r HULCKS or FLOD	OC.		
Location	32°23'54.97"S 60°46'58.06"E	S57 Encoding	ICEARE (A) CATICE=5 PONTON (A) HULCKS (A) FLODOC (A)		
Screen Capture	3 ₈ 9 ₁	*1 (
Expected test results	T1605: An error" Ice area object is covered by p T1605: An error" Ice area object is covered by p				

	T1605: An error" Ice area object is covered by p	rohibited 'flodoc	" must be trigg	ered.			
Secondary errors	None.						
Dataset Name	AA500006	S-58 test No	T1625	Туре	W		
S-58 Description	Check that, if one of the component objects (AIRARE or RUNWAY) of an airfield is encoded using a collection object, that only C_ASSO is used.						
Test Case No. 1	Captured AIRARE and BUISGL objects, these obj	ects are encoded	as collection ol	oject (C_AC	GGR).		
Location	32°23'51.08"S 60°48'22.79"E	S57 Encoding	AIRARE(A) BUISGL(P)				
Screen Capture	윤 윤						
Expected test results	T1625: A warning "'c_asso' must be used in this	case" must be tr	iggered.				
Secondary errors	None.						
Test Case No. 2	Captured RUNWAY and BUISGL objects, these o	bjects are encode	ed as collection	object (C_	AGGR).		
Location	32°23'51.55"S 60°48'27.99"E	S57 Encoding	RUNWAY(A) BUISGL(A)				
Screen Capture							
Screen Capture Expected test results	T1625: A warning "'c_asso' must be used in this	case" must be tr	iggered.				
	T1625: A warning "'c_asso' must be used in this None.	case" must be tr	iggered.				
Expected test results		case" must be tr	iggered.				

	Check for any geo object forming part of a navig	rational aid (huov	or beacon) tha	t the			
	combination of characteristics for structure, top being used (given in MARSYS of the geo object of	omark and lights c	onforms to the	IALA system			
S-58 Description	Meta-object M_NSYS). This check must not be applied to objects havin	g a value of (0) [n	o systeml or (10)) [other system]			
	for the attribute MARSYS, and to slave objects in						
	or (10) [other system] for the attribute MARSYS	-					
	undefined. Mandatory attributes must be encoded with explicit values (i.e. not "unknown").						
Test Case No. 1	Captured BOYLAT BCNLAT and LIGHTS objects of	pposite to IALA sy	/stem.				
	BCNLAT(P) BCNSHP=1						
				CATLAM=2			
			T001440(0)	COLOUR=4			
			TOPMAR(P)	TOPSHP=1			
			LIGHTS(P)	COLOUR=4 LITCHR=2			
			LIGHTS(F)	COLOUR=4			
				SIGGRP=(1)			
				SIGPER=4			
Location	32°25'28.02"S 60°46'39.96"E	S57 Encoding	BOYLAT(P)	BOYSHP=1			
				CATLAM=1			
				COLOUR=3			
			TOPMAR(P)	TOPSHP=5			
			LICUTC(D)	COLOUR=3			
			LIGHTS(P)	LITCHR=2 COLOUR=3			
				SIGGRP=(1)			
				SIGPER=4			
Screen Capture	FI.R4s	I.G4s					
Expected test results	T1729: 6 warnings "wrong 'colour' of navigational mark in BCNLAT, BOYLAT and LIGHTS" must be triggered.						
Secondary errors	None.						
Test Case No. 2	Captured BOYLAT BCNLAT and LIGHTS objects of	pposite to IALA sy					
			BCNLAT(P)	BCNSHP=1			
				CATLAM=2 COLOUR=3			
Location	32°25'32.17"S 60°46'57.56"E	S57 Encoding		MARSYS=9			
			TOPMAR(P)	TOPSHP=1			
			, ,	COLOUR=3			

			BOYLAT(P) TOPMAR(P) LIGHTS(P)	LITCHR=2 COLOUR=3 SIGGRP=(1) SIGPER=4 BOYSHP=1 CATLAM=1 COLOUR=4 MARSYS=9 TOPSHP=5 COLOUR=4 LITCHR=2 COLOUR=4 SIGGRP=(1) SIGPER=4
Screen Capture	FI.G4s T1729: 6warnings "wrong 'colour' of navigations		F ROYLAT and I	IGHTS" must not
Expected test results	be triggered.			
Secondary errors	None.			
Test Case No. 3	Captured BOYLAT BCNLAT and LIGHTS objects o	pposite to IALA sy	stem with attri	bute MARSYS.
Location	32°25'23.65"S 60°46'57.61"E	S57 Encoding	BCNLAT(P) TOPMAR(P) LIGHTS(P) BOYLAT(P) TOPMAR(P) LIGHTS(P)	BCNSHP=1 CATLAM=2 COLOUR=3 MARSYS=10 TOPSHP=1 COLOUR=3 LITCHR=2 COLOUR=3 SIGGRP=(1) SIGPER=4 BOYSHP=1 CATLAM=1 COLOUR=4 MARSYS=10 TOPSHP=5 COLOUR=4 LITCHR=2 COLOUR=4 SIGGRP=(1)

			SIGPER=4
Screen Capture	FI.G4s	-I.R4s	
Expected test results	T1729: 6warnings "wrong 'colour' of navigationa be triggered.	al mark in BCNLA	T, BOYLAT and LIGHTS" must not
Secondary errors	None		

Test Dataset:AA500007

List of S58 Recommended ENC Validation Checks covered in this section:

S58 Test	Description
2	Check that all VE edges have a beginning node and an end node.
11	Check that all segments with USAG = 3 [exterior boundary truncated By the data limit] are linked to an object M_COVR.
13	Check that for linear features comprising multiple edges, the vector records making up the linear feature are referenced sequentially and that the end node of a vector record is the same as the start node of The following vector record.
15	Check that the first and last edges bounding an area meet at a common connected node.
19	Check that all spatial edges which coincide with data limit borders (i.e. limits of M_COVR with CATCOV = 1 [coverage available]) are using USAG = 3 [Exterior boundary truncated by the data limit].
21	Check that all vector record pointer (VRPT) fields are pointed to by an edge vector record.
40	Check that any two feature objects of type Line satisfying all of the following conditions are chained together:
42	Check that VE edges linked to Group 1 objects appear twice with different ORNT values, or are linked to objects M_COVR with CATCOV = 1 [coverage available].
71	Check that no object of type Area (except for objects where all of the edges have USAG = 3) has all of its edges masked (i.e. USAG = 3 [exterior boundary truncated by the data limit] or MASK = 1 [mask]). Check that no object of type Line has any of its edges masked (i.e. MASK = 1 [mask]).
527	Check that all files referenced by TXTDSC, NTXTDS and PICREP attributes exist and that the file names are in accordance with the ENC Product Specification.
528	Check for existence of a catalogue file.
554	Check for any edge used by only one M_COVR object with CATCOV = 1 [coverage available], that it is also shared with one, and only one, Group 1 object.
566	Check that there is no NEWOBJ object in the data that has not been approved by an IHO ENC Encoding Bulletin.
25	 Check that the beginning and end of an edge are explicitly encoded as connected nodes. Check that the geometry of the connected node is not part of an edge. Check that edges directly reference their begin/end nodes using the vector record pointer.
28	Check that the count of records in DSSI is correct.

Dataset Name	AA500007	S-58 test No.	T0002	Туре	Е	
S-58 Description	Check that all VE edges have a beginning	ng node and an end	d node.	- 1 - 2 - 2		
Test Case No. 1	Cable submarine line captured without connected nodes.					
Location	32°24'54.03"S 60°44'54.20"E	S57 Encoding	CBLSUB(L)			
Screen Capture		7 ₆				
Expected test results	T0002: An error "Edge does not point t	o two nodes" must	be triggered.			
Secondary Errors	T0084: An error "isolated node marked T0012: An error "CBLSUB object has no T0021: An error "orphan" must be trigg	geometry".	ist be triggered.			
Dataset Name	AA500007	S-58 test No	T0011	Туре	E	
S-58 Description	Check that all segments with USAG = 3 to an object M_COVR.	[exterior boundary	r truncated By the data		inked	
Test Case No. 1	Anchorage area with truncated edges of	captured.				
Location	32°23'51.34"S 60°43'36.08"E	S57 Encoding	ACHARE (A)			
Screen Capture Expected test results	T0011: An error "edge is not shared by	I'm court with last	orago available! but be		io.	

	object ACHARE" must be triggered.				
Secondary Errors	None.				
Dataset Name	AA500007	S-58 test No.	T0013	Тур	e W
S-58 Description	Check that for linear features comprisi feature are referenced sequentially an start node of The following vector reco	d that the end nod			
Test Case No. 1	Cable submarine line captured single of	bject and two edge	es.	1	
Location	32°24'39.15"S 60°45'00.11"E	S57 Encoding	CBLSUB(L)		
Screen Capture	82	8,	· "		
Expected test results	T0013: A warning "line primitive conta	ins gap" must be tr	iggered.		
Expected test results Secondary Errors	T0013: A warning "line primitive conta None.	ins gap" must be tr	iggered.		
-		ins gap" must be tr	iggered.		
-		ins gap" must be tr	iggered.	Тур	e E
Secondary Errors	None.	S-58 test No.	T0015	L	
Secondary Errors Dataset Name	None. AA500007	S-58 test No. nding an area mee	T0015	onnected node).
Dataset Name S-58 Description	AA500007 Check that the first and last edges bou	S-58 test No. nding an area mee	T0015	onnected node).
Dataset Name S-58 Description Test Case No. 1	AA500007 Check that the first and last edges bou Cable submarine area captured bound	S-58 test No. nding an area meeting an area without	T0015 t at a common co	onnected node).

Dataset Name AA500007 S-58 test No. T0019 Type W Check that all spatial edges which coincide with data limit borders (i.e. limits of M_COVR with CATCOV = 1 [coverage available]) are using USAG = 3 [Exterior boundary truncated by the data limit] limit]. Test Case No. 1 M_COVR Exterior boundary truncated captured. Location 32°25'40.43"S 60°44'02.86"E S57 Encoding M_COVR (A) T0019: A warning "edge coincides with data limit border, but has no USAG=C in object M_COVR" must be triggered. None. Dataset Name AA500007 S-58 test No. T0021 Type E	Secondary Errors	TOO/11: An orror "Chock that all areas a	ara clasad" must ha	triggorod for the	objects created	
Check that all spatial edges which coincide with data limit borders (i.e. limits of M_COVR with CATCOV = 1 (coverage available)) are using USAG = 3 (Exterior boundary truncated by the data limit). Test Case No. 1	Secondary Errors	10041. All error Check that all areas a	ire closed. Illust be	triggered for the	objects created.	
Check that all spatial edges which coincide with data limit borders (i.e. limits of M_COVR with CATCOV = 1 (coverage available)) are using USAG = 3 (Exterior boundary truncated by the data limit). Test Case No. 1	Detect Name	AAE00007	C FO to at No	T0010	T	T 14/
Screen Capture CATCOV = 1 [coverage available]) are using USAG = 3 [Exterior boundary truncated by the data limit]. Test Case No. 1	Dataset Name					
Screen Capture T0019: A warning "edge coincides with data limit border, but has no USAG=C in object M_COVR" must be triggered. None. Dataset Name AA500007 S-58 Description Check that all vector record pointer (VRPT) fields are pointed to by an edge vector record. Test Case No. 1 Captured Spatial node with null class. Location Test Case No. 2 Captured Spatial node with null class. Screen Capture	S-58 Description	CATCOV = 1 [coverage available]) are				
Screen Capture T0019: A warning "edge coincides with data limit border, but has no USAG=C in object M_COVR" must be triggered. Secondary Errors None. Dataset Name AA500007 S-58 test No. T0021 Type E S-58 Description Check that all vector record pointer (VRPT) fields are pointed to by an edge vector record. Test Case No. 1 Captured Spatial node with null class. Location 32°24′54.47″5 60′43′47.10″E S57 Encoding VE 7 8 Screen Capture	Test Case No. 1	M_COVR Exterior boundary truncated	captured.			
Screen Capture T0019: A warning "edge coincides with data limit border, but has no USAG=C in object M_COVR" must be triggered. None. Type E	Location	32°25'40.43"S 60°44'02.86"E	S57 Encoding	M COVR (A)		
must be triggered. Secondary Errors None. Dataset Name AA500007 S-58 test No. T0021 Type E S-58 Description Check that all vector record pointer (VRPT) fields are pointed to by an edge vector record. Test Case No. 1 Location 32°24'54.47"S 60°43'47.10"E S57 Encoding VE 7 6 Screen Capture	Screen Capture		•			
Dataset Name AA500007 S-58 test No. T0021 Type E S-58 Description Check that all vector record pointer (VRPT) fields are pointed to by an edge vector record. Test Case No. 1 Location Captured Spatial node with null class. S57 Encoding VE 7 8 Screen Capture	Expected test results		n data limit border,	but has no USAG	=C in object M_C	COVR"
S-58 Description Check that all vector record pointer (VRPT) fields are pointed to by an edge vector record. Test Case No. 1 Location Captured Spatial node with null class. S57 Encoding VE 7 8 Screen Capture	Secondary Errors	None.				
S-58 Description Check that all vector record pointer (VRPT) fields are pointed to by an edge vector record. Test Case No. 1 Location Captured Spatial node with null class. S57 Encoding VE 7 8 Screen Capture						
Test Case No. 1 Location 32°24'54.47"S 60°43'47.10"E S57 Encoding VE 7 8 Screen Capture	Dataset Name	AA500007	S-58 test No.	T0021	Туре	Е
Screen Capture Scre	S-58 Description	Check that all vector record pointer (V	RPT) fields are poin	ted to by an edge	e vector record.	
Screen Capture •	Test Case No. 1	Captured Spatial node with null class.				
Screen Capture •	Location	32°24'54.47"S 60°43'47.10"E	S57 Encoding	VE		
Expected test results T0021: An error "orphan" must be triggered.	Screen Capture	•	7 ₈			
	Expected test results	T0021: An error "orphan" must be trig	gered.			

Secondary Errors	None.				
				,	
Dataset Name	AA500007	S-58 test No.	T0040	Туре	W
S-58 Description	Check that any two feature objects of following conditions are chained tog	gether: with the same class and features for which all es, ects have one (or two n end node of each li	nd attribute valu Il referenced edg) common conne near feature,	ges are encoded vected node(s) whi	ch is
Test Case No. 1	Shoreline construction lines are enc	oded with different o	_		
Location	32°25'38.79"S 60°46'22.09"E	S57 Encoding	SLCONS (L) LNDELV (L)	CATSLC=4 WATLEV=2 QUAPOS=2 and	4.4
Screen Capture					
Expected test results	T0040: Two warnings "this object ar construction" must be triggered.	nd 'slcons' can be me	rged into one ob	ject Shoreline	
Secondary Errors	None.				
Dataset Name	AA500007	S-58 test No.	T0042	Туре	E
S-58 Description	Check that VE edges linked to Groulinked to objects M_COVR with CATO	ıp 1 objects appear	twice with diffe	<u> </u>	I .
Test Case No. 1	Edge referenced by only one Group 1 feature.				
rest case No. 1	Lage referenced by only one Group	i leature.			

Screen Capture				
Expected test results	T0042: An error "edge is open border of	of TG1 coverage" n	nust be triggered.	
Secondary Errors	None.			
Dataset Name	AA500007	S-58 test No.	T0071	Type W
S-58 Description	Check that no object of type Area (exce all of its edges masked (i.e. USAG = 3 [e [mask]). Check that no object of type L	ept for objects who exterior boundary	ere all of the edges have truncated by the data li	e USAG = 3) has mit] or MASK = 3
Test Case No. 1	Land area edges masked Land elevation line edge masked Coastline line edge masked			
Location	32°25'40.30"S 60°46'22.34"E	S57 Encoding	LNDARE(A) LNDELV(L) COALNE(L)	
Screen Capture				
Expected test results	T0071: Three warnings "all edges mask	ked" must be trigge	ered.	
Secondary Errors	None.			
Dataset Name	AA500007	S-58 test No.	T0527	Type E
S-58 Description	Check that all files referenced by TXT names are in accordance with the ENC			and that the fi

Test Case No. 1	Building, single (A&P) captured.				
rest case No. 1	Building, single (Act) captarea.	1		TXTDSC=US500527.TX	
Location	32°25'34.41"S 60°44'55.10"E	S57 Encoding	BUISGL (P&A)	T NTXTDS= US500527.TXT PICREP = US500527.TIF	
Screen Capture					
Expected test results	T0527: Two errors "external file for 'n T0527: Two errors "external file for 't T0527: Two errors "external file for 'p	ktdsc' not found" mi	ust be triggered.		
Secondary Errors	None.				
Test Case No. 2	Building, single (A&P) captured.				
Location	32°25'35.57"S 60°44'55.21"E	S57 Encoding	BUISGL (P&A)	TXTDSC=GB50527.TXT NTXTDS= GB50527.TXT PICREP = GB50527.TIF	
Screen Capture					
Expected test results	T0527: Two errors "illegal file name in 'picrep'" must be triggered. T0527: Two errors "illegal file name in 'txtdsc'" must be triggered. T0527: Two errors "illegal file name in 'ntxtds'" must be triggered.				
Secondary Errors	T0073: A warning "Check that Textorialling space. Check that the format created.				

	T0073: A warning "Check that Textual contain a leading or a trailing space. Cl triggered for the objects created. T0073: A warning "Check that Pictorial trailing space. Check that the format o created.	neck that the formation (P	at of the attribute	e is valid" must b contain a leading	e or a
	created.				
Dataset Name	AA500007	S-58 test No.	T0528	Туре	E
S-58 Description	Check for existence of a catalogue file.				
Test Case No. 1	Catalogue file deleted after creating EI	NCROOT.			
Location	N/R	S-58 test No.	N/R		
Screen Capture				•	
Expected test results	T0528: An error "No catalog file detect	ted, cannot check (CRC" must be trig	gered.	
Secondary Errors	None.				
Dataset Name	AA500007	S-58 test No.	T0554	Туре	E
S-58 Description	Check for any edge used by only one N it is also shared with one, and only one	_	h CATCOV = 1 [co	verage available], that
Test Case No. 1	Floating dock area captured on DEPAR	E.			
Location	32°23'48.90"S 60°44'04.92"E	S57 Encoding	FLODOC (A) DEPARE (A)		
Screen Capture					
Expected test results	T0554: An error "edge is shared by M_must be triggered.				
Secondary Errors	T0519: Two errors "Check Group 1 covered must be triggered for the objects created. T0548: An error "edge is open border of triggered for the objects created. T0042: An error "edge is open border of the objects created.	red. of 'm_covr', but no	t on the chart bo	rders" must be	

	must be triggered for the objects create	ed.			
	T0019: A warning "edge coincides with data limit border, but has no USAG=C in object FLODOC" must be triggered for the objects created.				
			ı		T
Dataset Name	AA500007	S-58 test No.	T0566	Туре	E
S-58 Description	Check that there is no NEWOBJ object Encoding Bulletin.	t in the data that	has not been appro	oved by an IF	HO ENC
Test Case No. 1	New Object (A, P and L) captured.				
Location	32°24'26.12"S 60°44'44.35"E	S57 Encoding	NEWOBJ (A,P&L))		
Screen Capture	7 ₃ 7 ₃ 7 ₄ 7 ₅ 7 ₆ 7 _{7 7₈}	7			
Expected test results	T0566: Three errors "This use of NEWO Encoding Bulletin" must be triggered.				
Secondary Errors	T0562: Three errors "INFORM must con	nmence with the v	alue "New object" m	ust be trigge	red.
			ı		1
Dataset Name	AA500007	S-58 test No.	T0025	Туре	E .
S-58 Description	 Check that the beginning and check that the geometry of the Check that edges directly repointer. 	e connected node	is not part of an edge	e.	
Test Case No. 1	Pipeline captured.			-	
Location	32°23'53.31"S 60°46'20.89"E	S57 Encoding	PIPSOL (L)		

Screen Capture						
Expected test results	T0025: An error "Edge record does not	contain SOPT sub	field" must be tr	iggered.		
Secondary Errors	T0012: One error "PIPSOL object has n	o geometry" must	be triggered for	the obje	cts create	ed.
Dataset Name	AA500007	S-58 test No.	T0028		Type	E
S-58 Description	Check that the count of records in DSS	l is correct.				
Test Case No. 1	Created a scenario that count of record	ds is not equal to n	umber of physic	al record	ls in the c	ell.
Location	N/A	S57 Encoding	N/A	N/R		
Screen Capture		•	•	•		
Expected test results	T0028: An error "Wrong number of red	cords in DSSI" must	be triggered.			
Secondary Errors	None.					

S58 Test	Description
14	Check for any area object having outer and inner boundaries that two of these boundaries do not share more than one node.
16	Check that area outer boundaries are encoded clockwise.
17	Check that area inner boundaries are encoded counter clockwise.
20	Check that geometry primitive is compatible with object class.
80	Check that no area object has incorrect boundary nesting. i.e. at least one of the following cases detected: An internal boundary is completely within an internal boundary; An internal boundary is completely outside an external boundary; An external boundary is completely within an internal boundary.

Dataset Name	AA500008	S-58 test No.	T0014	Туре	E
S-58 Description	Check for any area object having oute share more than one node.	er and inner bounda	ries that two of t	hese boundaries	do not
Test Case No. 1	Captured two SEAARE sharing with a single node.				
Location	32°24'43.18"S 60°42'06.52"E	S57 Encoding	SEAARE(A)		
Screen Capture	2				
Expected test results	T0014: An error "SEAARE - Sea area / node" must be triggered.	named water area I	Polygon rings tou	ch at more than	one
Secondary Errors	None.				
Dataset Name	AA500008	S-58 test No.	T0016	Туре	E
S-58 Description	Check that area outer boundaries are	encoded clockwise			
Test Case No. 1	Captured SEAARE object outer bound	aries are encoded a	s clockwise.		
Location	32°25'00.42"S 60°42'18.18"E	S57 Encoding	SEAARE(A)		
Screen Capture	45				
Expected test results	T0016: An error "Area external conto	ur has wrong directi	ion" must be trig	gered.	
Expected test results Secondary Errors	T0016: An error "Area external conto None.	ur has wrong directi	ion" must be trig	gered.	

Dataset Name	AA500008	S-58 test No.	T0017	Туре	Е	
S-58 Description	Check that area inner boundaries are e	encoded counter cl	ockwise.			
Test Case No. 1	Captured SEAARE object inner boundaries are encoded as counter clockwise.					
Location	32°25'00.42"S 60°42'18.18"E	S57 Encoding	SEAARE(A)			
Screen Capture	15					
Expected test results	T0017: An error "Area internal contour	r has wrong direction	on" must be triggered.			
Secondary Errors	None.					
Dataset Name	AA500008	S-58 test No.	T0020	Туре	Е	
S-58 Description	Check that geometry primitive is comp	oatible with object o	class.			
Test Case No. 1	Captured SOUNG object to isolated no	de.				
Location	32°24'51.77"S 60°42'34.31"E	S57 Encoding	SOUNDG(P)			
Screen Capture	<u>ु</u> वाव 4 ₈					
Expected test results	T0020: An error "illegal geometry type	of Sounding" must	t be triggered.			
Secondary Errors	T0547: An error "Object contains attrik object class (as defined in the Object C related to the objects created.	outes outside of the	e list of permissible attı			

Dataset Name	AA500008	S-58 test No.	T0080	Туре	Е		
S-58 Description	Check that no area object has incorrect boundary nesting. i.e. at least one of the following cases detected: An internal boundary is completely within an internal boundary; An internal boundary is completely outside an external boundary; An external boundary is completely within an internal boundary.						
Test Case No. 1	Captured SEAARE objects.	ptured SEAARE objects.					
Location	32°24'51.50"S 60°42'09.21"E	S57 Encoding	SEAARE(A)				
Screen Capture	○)					
Expected test results	T0080: An error "Area internal contour	has wrong nesting	" must be trigger	red.			
Secondary Errors	None.						
Test Case No. 2	Captured SEAARE objects.						
Location	32°24'52.72"S 60°42'13.90"E	S57 Encoding	SEAARE(A)				
Screen Capture							
Expected test results	T0080: An error "Area internal contour	has wrong nesting	" must be trigger	red.			
Secondary Errors	None.						
Test Case No. 3	Captured SEAARE objects.						
Location	32°24'52.92"S 60°42'17.29"E	S57 Encoding	SEAARE(A)				

Screen Capture	
Expected test results	T0080: An error "Area internal contour has wrong nesting" must be triggered.
Secondary Errors	None.

S58 Test	Description
553	Check that no Group 1 object contains the attributes DATSTA, DATEND, PERSTA or PEREND.
1532	Check that if there is an attribute value for SURSTA for a given M_QUAL object that it relates to the oldest survey of two or more surveys for that M_QUAL object coverage.
1721	Check that no RADRFL object is attached to a navigational aid having CONRAD as a relevant attribute (the navigational aid must use CONRAD = (3) [radar conspicuous (has reflector radar)]).
1530	Check that no object falling within a given M_QUAL object coverage has an attribute value for SOUACC that is equivalent to the SOUACC or CATZOC attributes for the M_QUAL object.

Dataset Name	AA500009	S-58 test No.	T0553	Type E
S-58 Description	Check that no Group 1 object contains	the attributes DATS	STA, DATEND, PE	RSTA or PEREND.
Test Case No. 1	Captured PONTON object.			
Location	32°25'44.36"S 60°42'28.53"E	S57 Encoding	PONTON	PERSTA= 02.01.2010 PEREND= 12.01.2011 STATUS=5
Screen Capture	2 ₄	15		
Expected test results	T0553: An error "prohibited attribute ' T0553: An error " prohibited attribute '			
Secondary Errors	None.			
Test Case No. 2	Captured FLODOC object.			
Location	32°25'44.81"S 60°42'21.44"E	S57 Encoding	FLODOC	DATSTA= 19.07.2010 DATEND= 19.07.2011
Screen Capture	27	3 2 ₄		
Expected test results	T0553: An error "prohibited attribute to T0553: An error "prohibited attribute" to T0553: An error "prohibited attribute" to T0553: An error "prohibited attribute to T0553: An error "prohibited attribute" to T0553: An err			
Secondary Errors	None.			
Dataset Name	AA500009	S-58 test No.	T1532	Type E

S-58 Description	Check that if there is an attribute value				
-	the oldest survey of two or more surveys for that M_QUAL object coverage.				
Test Case No. 1	Captured one M_QUAL and two M_S	REL	M_QUAL	CATZOC=2 SURSTA=20120623	
Location	32°26'04.12"S 60°43'14.77"E	S57 Encoding	M_SREL	SUREND=20120723 SURSTA=20100723 SUREND=20120723	
			M_SREL	SURSTA=20110623 SUREND=20120723	
Screen Capture					
Expected test results	T1532: An error "If there is more than the value of the M_QUAL feature's SU SURSTA attribute used by the contain	JRSTA attribute, if o	lefined, is equal	to the value of the oldest	
Secondary Errors	None.				
		1			
Dataset Name	AA500009	S-58 test No.	T1721	Type E	
S-58 Description	Check that no RADRFL object is attack attribute (the navigational aid must u	_	_		
Test Case No. 1	RADRFL captured on BOYSPP.				
Location	32°26'12.90"S : 60°42'41.49"E	S57 Encoding	BOYSPP RADRFL	CONRAD=3	
Screen Capture Expected test results	3 ₃ T1721: An error" T1721: An error "pro				

Secondary Errors	T1762: An error "RADRFL object is entitle objects created. T0516: A warning "BOYSPP object has created.			
Dataset Name	AA500009	S-58 test No.	T1530	Type E
S-58 Description	Check that no object falling within a g SOUACC that is equivalent to the SOU	JACC or CATZOC attr	ibutes for the M	_QUAL object.
Test Case No. 1	Captured FAIRWY object with attribut overlying M_QUAL.	te value of SOUACC	that is equivalen	t to the SOUACC of the
Location	32°26'59.17"S 60°43'20.25"E	S57 Encoding	M_QUAL (A)	CATZOC=6 SOUACC=5 DRVAL1=5
			FAIRWY (A)	SOUACC=5
Screen Capture	T1530: An error "The value of SOUAC	45		
Expected test results	be triggered.			
Secondary Errors	None.			
Test Case No. 2	Captured FAIRWY object with attribut overlying M_QUAL.	te value of SOUACC	that is equivalen	t to the CATZOC of the
Location	32°26'50.20"S 60°43'23.07"E	S57 Encoding	M_QUAL (A) FAIRWY (A)	CATZOC=1 SOUACC=0.6 DRVAL1=5

Screen Capture	3,
Expected test results	T1530: An error "The value of SOUACC must not be equal to that of the covering M_QUAL" must be triggered.
Secondary Errors	T0513: An error "The value of SOUACC must not be equal to that of the covering M_QUAL" must be triggered for the objects created.

S58 Test	Description
1	Check that no part of an edge is duplicated (i.e. a pair of coordinates identical for two edges).
12	Check that all feature objects except C_(collection) have a FSPT.
46	Check for any object having both attributes DATEND and DATSTA encoded with explicit values that DATEND is the same or later than DATSTA.
47	Check for any LIGHTS and RTPBCN object having SECTR1 encoded that SECTR2 is also encoded (with a different value) and vice versa.
48	Check for any M_SREL object having SCVAL1 and SCVAL2 encoded that the value of SCVAL1 has been set to a larger scale than SCVAL2 (i.e. attribute value for SCVAL1 is smaller than attribute value for SCVAL2).
49	Check for any object having DRVAL1 and DRVAL2 encoded that DRVAL1 is smaller than or equal to DRVAL2.
52	Check that any LNDELV object of type Point or Line is situated within a LNDARE object of type Area, or on a LNDARE object of type Line, or shares the geometry of a LNDARE object of type Point, except where the LNDELV object is encoded on an area WRECKS object which is always dry (WATLEV = 2 [always dry]) or is partially submerged at high water (WATLEV = 1 [partly submerged at high water]).
53	Check that any SLOGRD object is covered by a LNDARE object of type Area. Check that any SLOTOP object is covered by a LNDARE object of type Area or is on its border.
83	Check that no node coincides with another node (connected or isolated).
87	Check for edges with degenerated geometry (when consecutive vertices coincide).

Dataset Name	AA500010	S-58 test No.	T0001	Туре	W		
S-58 Description	Check that no part of an edge is duplicated (i.e. a pair of coordinates identical for two edges).						
Test Case No. 1	Two SLCONS lines captured.						
Location	32°26'38.69"S 60°44'38.69"E	S57 Encoding	SLCONS (L)				
Screen Capture							
Expected test results	T0001: 4 warning "pairs of vertexes as	re identical" must b	e triggered.				
Secondary errors	None.						
Dataset Name	AA500010	S-58 test No.	T0012	Туре	E		
S-58 Description	Check that all feature objects except (C_(collection) have	a FSPT.				
Test Case No. 1	SLCONS point captured.						
Location	Nil	S57 Encoding	SLCONS(P)				
Screen Capture	No preview is available for this case.			•			
Expected test results	T0012: An error "object has no geome	etry" must be trigge	red.				
Secondary errors	T0020: An error "Geometric primitive the objects created. T0544&T0548: An error "A geographic [coverage]" must be triggered for the	c feature must be co					
Dataset Name	AA500010	S-58 test No.	T0046	Туре	ΤE		
S-58 Description	Check for any object having both attri that DATEND is the same or later than	butes DATEND and		1			
Test Case No. 1	ACHARE (P) object captured with diffe	erent dates for DATS	STA and DATEND.				

Screen Capture	42	2 ±	7	
Expected test results	T0046: ERROR "attribute conflict betw	een 'datsta' and 'da	atend'" must be tr	iggered.
Secondary errors	None.			
			1	1
Dataset Name	AA500010	S-58 test No.	T0047	Type E
S-58 Description	Check for any LIGHTS and RTPBCN objective (with a different value) and vice versa.		encoded that SECT	R2 is also encoded
Test Case No. 1	LIGHTS and RTPBCN objects are captur	ed with only SECTR	R1.	
Location	32°26'25.01"S 60°44'30.47"E	S57 Encoding	LIGHTS (P) RTPBCN (P)	SECTR1=30 SECTR1=30
Screen Capture	57	±		
Expected test results	T0047: Two errors "attribute conflict b	etween 'sectr1' and	d 'sectr2'" must be	e triggered.
Secondary errors	None.			
Test Case No. 2	LIGHTS and RTPBCN objects are captured with only SECTR2.			
Location	32°26'24.51"S 60°44'37.56"E	S57 Encoding	LIGHTS (P) RTPBCN (P)	SECTR2=30 SECTR2=30

Screen Capture	42	2 ±	2-7		
Expected test results	T0047: Two errors "attribute conflict b	etween 'sectr1' and	d 'sectr2'" must be	e triggered.	
Secondary errors	None.				
Test Case No. 3	LIGHTS and RTPBCN objects are captur	ed with SECTR1 and	d SECTR2.		
Location	32°26'24.29"S 60°44'34.29"E	S57 Encoding	LIGHTS (P) RTPBCN (P)	SECTR1=30 SECTR2=30 SECTR1=30 SECTR2=30	
Screen Capture	4,				
Expected test results	T0047: Two errors "attribute conflict b	etween 'sectr1' and	d 'sectr2'" must be	e triggered.	
Secondary errors	None.				
Dataset Name	AA500010	S-58 test No.	T0048	Type E	
S-58 Description	Check for any M_SREL object having SCVAL1 and SCVAL2 encoded that the value of SCVAL1 has been set to a larger scale than SCVAL2 (i.e. attribute value for SCVAL1 is smaller than attribute value for SCVAL2).				
Test Case No. 1	M_SREL object captured with attribute	M_SREL object captured with attributes SCVAL1 and SCVAL2.			
Location	32°26'21.86"S 60°43'57.40"E	S57 Encoding	M_SREL	SCVAL1=15000 SCVAL2=10000	

Screen Capture		, 11 , 16	1	
Expected test results	T0048: ERROR "attribute conflict between triggered.	een 'scval1' and 'sc	val2' <survey reli<="" th=""><th>ability>" must be</th></survey>	ability>" must be
Secondary errors	None.			
			1	
Dataset Name	AA500010	S-58 test No.	T0049	Type E
S-58 Description	Check for any object having DRVAL1 an DRVAL2.	nd DRVAL2 encode	d that DRVAL1 is s	smaller than or equal to
Test Case No. 1	DRGARE object captured with attribute greater than DRVAL2	es DRVAL1 and DRV		
Location	32°26'43.17"S 60°44'10.73"E	S57 Encoding	DRGARE	DRVAL1=4 DRVAL2=3
Screen Capture	9 ₄ 20 ₄ 10 ₃ 21 ₈	11 ₅ 7 15 ₂ 11 ₅ 14 ₉		
Expected test results	T0049: An error "'drval1' deeper than '	drval2'" must be ti	riggered.	
Secondary errors	None.			
2	1			
Dataset Name	AA500010	S-58 test No.	T0052	Type E
S-58 Description	Check that any LNDELV object of type I Area, or on a LNDARE object of type Lir Point, except where the LNDELV object (WATLEV = 2 [always dry]) or is partially at high water]).	ne, or shares the go	eometry of a LND area WRECKS obj	ARE object of type ect which is always dry

Test Case No. 1	LNDELV (P, L) objects captured on depth area.				
Location	32°27'25.82"S 60°43'58.53"E	S57 Encoding	LNDELV (P,L)		
Screen Capture	55	26 ₂			
Expected test results	T0052: Two errors "object within proh	ibited area" must b	e triggered.		
Secondary errors	None.				
Test Case No. 2	LNDELV (P, L) objects captured on wre	cks area and point o			
Location	32°27'31.44"S 60°44'24.19"E	S57 Encoding	LNDELV (L) 2x LNDELV (P) 2x WRECKS (A) WRECKS (A)	ELEVAT=10 ELEVAT=10 WATLEV=2 WATLEV=1	
Screen Capture		(°			
Expected test results	T0052: Four errors "object within proh	ibited area" must n	ot be triggered.		
Secondary errors	None.				
Dataset Name	AA500010	S-58 test No.	T0053	Type E	
S-58 Description	Check that any SLOGRD object is cover Check that any SLOTOP object is cover				

Test Case No. 1	SLOGRD and SLOTOP objects captured on depth area.					
Location	32°25'41.92"S 60°44'49.31"E	S57 Encoding	SLOGRD (A) SLOTOP (L)			
Screen Capture	8					
Expected test results	T0053: Two errors "object is not covere	ed by a mandatory	'Indare'" must be trigg	gered.		
Secondary errors	None.					
Dataset Name	AA500010	S-58 test No.	T0083	Туре	W	
S-58 Description	Check that no node coincides with ano	ther node (connec	ted or isolated).	- 1 - 2 -		
Test Case No. 1	Two S57 objects captured as connected	d node coincides w		ode.		
Location	32°27'25.74"S 60°44'33.23"E	S57 Encoding	LNDMRK (P) CBLOHD (L)			
Screen Capture	<u>&</u>	~ @				
Expected test results	T0083: A warning "isolated node is iden	ntical to connected	Node" must be trigge	ered.		
Secondary errors	None.					
Dataset Name	AA500010	S-58 test No.	T0087	Туре	W	
S-58 Description	Check for edges with degenerated geor				VV	

Test Case No. 1	SLCONS line captured as straight with a vertex.				
Location	32°26'08.31"S 60°44'44.61"E				
Screen Capture	27				
Expected test results	T0087: Warning "vertex lies on straigh	t line" must be trig	gered.		
Secondary errors	None.				

S58 Test	Description
91	Check for all attribute values of type "float", that the number of digits in the integer part is smaller than or equal to the number of digits given in the format statement (e.g. XX.X).
501	Check that cells are rectangular.
508	Check that COLPAT is encoded for every object (except LIGHTS) with more than one COLOUR. Check that no object with a value for COLPAT has only one COLOUR.
510	Check that HORDAT only appears in M_HOPA.
511	Check that the prohibited attributes DUNITS, HUNITS, RECDAT, RECIND, SCAMAX, PUNITS, CATQUA are not used.
521	Check that OBJNAM and NOBJNM values, or INFORM and NINFOM values, or PILDST and NPLDST values, are different for any particular object.
522	Check that if NOBJNM is encoded, then OBJNAM has also been encoded.
524	Check that DUNI = 1 [metres].
1510	Check that the value in the Sounding Datum subfield (SDAT) of the Data Set Parameter field (DSPM) is not null.
1542	Check that no object falling within a given M_ACCY object coverage has an attribute value for POSACC that is equivalent to the POSACC attribute for the M_ACCY object.

Dataset Name	AA500011	S-58 test No.	T0091		Туре	W	
S-58 Description	Check for all attribute values of type "f than or equal to the number of digits g				r part is s	maller	
Test Case No. 1	Created LNDELV (P) with attribute value ELEVAT.						
Location	32°26'59.15"S 60°47'20.75"E	S57 Encoding	LNDELV (P)	ELEVA	T=4000		
Screen Capture	. 4000						
Expected test results	T0091: A warning "Assigned float value is	s invalid for this obje	ct/attribute" mus	t be trig	gered.		
Secondary errors	None.						
		T			1		
Dataset Name	AA500011	S-58 test No.	T0501		Туре	E	
S-58 Description	Check that cells are rectangular.						
Test Case No. 1	Modified south east corner co-ordinate	e values.					
Location	32°27'32.61"S 60°49'26.23"E	S57 Encoding	M_COVR (A)				
Screen Capture							

Even stood tost vosults	T0501: An error "dataset is not rectangular: no vertexes in the south-west, south-east corner(s)"						
Expected test results	must be triggered.						
Secondary errors	T0548: 15 errors "edge is open border triggered for the objects created.	T0548: 15 errors "edge is open border of 'm_covr', but not on the chart borders" must be					
	the objects of catear						
Dataset Name	AA500011	S-58 test No.	T0508	Type E			
S-58 Description	Check that COLPAT is encoded for ever Check that no object with a value for C			than one COLOUR.			
Test Case No. 1	Created LNDMRK with attribute COLO	JR and COLPAT una	assigned.				
Location	32°26'53.54"S 60°49'09.77"E	S57 Encoding	LNDMRK(P)	CATLMK=17 COLOUR=1,3 COLPAT=UNDEFINED			
Screen Capture		COLPAT=UNDEFINED					
Expected test results	T0508: An error "mandatory 'colpat' no	ot found " must be	triggered.				
Secondary errors	None.						
Test Case No. 2	Created LNDMRK with attribute value	COLOUR and COLP	AT.				
Location	32°27'03.07"S 60°49'12.81"E S57 Encoding LNDMRK(P) CATLMK=17 COLOUR=1 COLPAT=5						

Screen Capture				
Expected test results	T0508: An error "attribute conflict be	tween 'colpat' and 'o	colour'" must be	triggered.
Secondary errors	None.			
Test Case No. 3	Created LIGHTS with attribute value C	OLOUR without CO	LPAT.	
Location	32°26'46.92"S 60°49'19.58"E	S57 Encoding	LIGHTS	COLOUR=1,3 LITCHR=1 COLPAT=UNDEFINED
Screen Capture				
Expected test results	T0508: An error "mandatory 'colpat' r	not found" must not	be triggered.	
Secondary errors	None.			
Dataset Name	AA500011	S-58 test No.	T0510	Type E
S-58 Description	Check that HORDAT only appears in N	1_HOPA.		
Test Case No. 1	Created M_HDAT object with attributes HORDAT.			
Location	32°27'27.78"S 60°48'26.95"E	S57 Encoding	M_HDAT(A)	HORDAT=UNKNOWN

Screen Capture				
Expected test results	T0510: An error "prohibited attribute	'hordat'" must be tr	iggered.	
Secondary errors	T0504: An error "prohibited object Ho created. T0545: An error "Object code, Unknov created.			
D	AA500044	5.50	T0544	- -
Dataset Name S-58 Description	AA500011 Check that the prohibited attributes D CATQUA are not used.	S-58 test No. UNITS, HUNITS, REC	T0511 CDAT, RECIND, SO	Type E
Test Case No. 1	Created M_UNIT with attribute values	PUNITS, DUNITS, H	UNITS, RECDAT	and RECIND.
Location	32°27'29.76"S 60°49'17.69"E	S57 Encoding	M_UNIT (A)	PUNITS=1 DUNITS=1 HUNITS=1 RECDAT=15.02.2010 RECIND=US,US,digi
Screen Capture				
Expected test results	T0511: An error "prohibited attribute triggered. T0511: An error "prohibited attribute triggered. T0511: An error "prohibited attribute triggered. triggered.	'dunits' in Units of n	neasurement of	data" must be

	T0511: An error "prohibited attribut triggered. T0511: An error "prohibited attribut triggered.	e 'recind' in Units of	measurement of	f data" must be
Secondary errors	T0504: An error "prohibited object lobjects created. T0545: An error "Object code, Unkn created.			
Test Case No. 2	Created M_QUAL object with attribution with attribute value SCAMAX.	ute values CATZOC a	nd CATQUA, and	MAGVAR object created
Location	32°26'05.44"S 60°49'23.46"E	S57 Encoding	MAGVAR(P) M_QUAL(A)	SCAMAX=15000 CATQUA=1
Screen Capture		4		
Expected test results	T0511: An error "prohibited attribut T0511: An error "prohibited attribut			
Secondary errors	None.			
	T	T		T_ T
Dataset Name	AA500011	S-58 test No.	T0521	Type W
S-58 Description	Check that OBJNAM and NOBJNM v values, are different for any particul		d NINFOM value:	s, or PILDST and NPLDST
Test Case No. 1	Created PILBOP(P)			
Location	32°27'22.95"S : 60°47'33.18"E	S57 Encoding	PILBOP(P)	OBJNAM= Judith Harbor NOBJNM= Judith Harbor INFORM= Judith Harbor NINFOM= Judith Harbor PILDST= Judith Harbor NPLDST= Judith

Screen Capture	•			
Expected test results	T0521: A warning "national attribute 'r T0521: A warning "national attribute 'r T0521: A warning "national attribute 'r	npldst' is identical to	o 'pildst'" must b	e triggered.
Secondary errors	None.			
		I	T	
Dataset Name	AA500011	S-58 test No.	T0522	Type W
S-58 Description	Check that if NOBJNM is encoded, ther	n OBJNAM has also	been encoded.	
Test Case No. 1	Created AIRARE with NOBJNM and no	OBJNAM.		
Location	32°26'44.54"S : 60°47'16.32"E	S57 Encoding	AIRARE(P)	NOBJNM=Judith
Screen Capture				
Expected test results	T0522: A warning "national attribute 'r	nobjnm' encoded w	ithout 'objnam'"	must be triggered.
Secondary errors	None.			
Dataset Name	AA500011	S-58 test No.	T0524	Type E
S-58 Description	Check that DUNI = 1 [metres].			
Test Case No. 1	Modified depth units in DSPM paramet	ters.		
Location	DSPM Parameters	S57 Encoding		DUNI=4
	1		l	1

Screen Capture	[DP-0000000002] DSPM i Horizontal geodetic datum [HDAT]: Vertical datum [VDAT]: Mean high water in Sounding datum [SDAT]: <empty> i Compilation scale of data [CSCL]: 1.7 i Units of depth measurement [DUNI]: i Units of height measurement [HUNI]: i Units of positional accuracy [PUNI]: I Coordinate units [COUN]: LL - Latitude in Coordinate multiplication factor [CON in 3-D (sounding) multiplication factor [Seedetic Context odes</empty>	eter 20000 fathoms and fraction metres metres de / Longitude 1F]: 10000000	ns			
Expected test results	T0524: An error "illegal value of DSPM.	DUNI" must be trig	ggered.			
Secondary errors	None.					
Dataset Name	AA500011	S-58 test No.	T1510		Type	E
S-58 Description	Check that the value in the Sounding D (DSPM) is not null.	atum subfield (SDA	ιΤ) of the Data Se	et Param	eter field	
Test Case No. 1	Modified SDAT in DSPM parameters.					
Location	DSPM Parameters	S57 Encoding		SDAT=	EMPTY	
Screen Capture	[DP-0000000002] DSPM i Horizontal geodetic datum [HDAT]: V i Vertical datum [VDAT]: Mean high wa i Sounding datum [SDAT]: <empty> i Units of depth measurement [DUNI]: i Units of height measurement [HUNI]: i Units of positional accuracy [PUNI]: I i Coordinate units [COUN]: LL - Latitude i Coordinate multiplication factor [COM i 3-D (sounding) multiplication factor [Summent [COMT]: i Geodetic Context odes</empty>	fathoms and fraction metres metres de / Longitude 1F]: 10000000	ns			
Expected test results	T1510: An error "illegal value of DSPM.	SDAT" must be trig	gered.			
Secondary errors	None.					
Dataset Name	AA500011	S-58 test No.	T1542		Type	E
S-58 Description	Check that no object falling within a given POSACC that is equivalent to the POSACC		_		e value f	or
Test Case No. 1	Created LNDELV (P) object with spatial attribute for the M_ACCY object	attribute value PO	SACC, that is equ	iivalent t	o the PO	SACC
Location	32°27'20.07"S 60°49'20.97"E	S57 Encoding	M_ACCY(A) LNDELV(P)	POSAC POSAC		

Screen Capture	
Expected test results	T1542: An error "redundant 'posacc' is defined by 'm_accy'" must be triggered.
Secondary errors	None.

S58 Test	Description
525	Check that PUNI = 1 [metres].
541	Check that the SIGGRP format is correct for all LIGHTS, except for fixed LIGHTS, which must not have a value for SIGGRP.
542	Check that any attribute value SIGGRP starts and finishes with a bracket.
547	Check that no object contains attributes outside the list of permissible attributes for the object's class (as defined in the Object Catalogue and S-57 Supplement No 2 for the specified object.
562	Check for any NEWOBJ object, that at least one of the attributes INFORM or TXTDSC contains the name of the feature object. The text must commence with the approved object class name (CLSNAM) of the feature (i.e. New Object).
1500	Check that certain area objects do not overlap for logical reasons: LNDARE and SBDARE. LNDARE and CBLARE.
1502	Check that no spatial object contains the attribute HORDAT.
1503	Check that no object has an attribute value for VERDAT without a value for at least one of ELEVAT, HEIGHT, VERCCL, VERCLR, VERCOP or VERCSA. Exceptions are M_VDAT and M_SDAT objects (subject to their own QA tests).
1504	Check that the value in the Vertical Datum subfield (VDAT) of the Data Set Parameter field (DSPM) is not null.

Dataset Name	AA500012	S-58 test No.	T0525		Туре	E
S-58 Description	Check that PUNI = 1 [metres].					
Test Case No. 1	PUNI=4(Feet) has been assigned					
Location	DSPM Parameters					
Screen Capture	i [DP-0000000002] DSPM i Horizontal geodetic datum [H i Vertical datum [VDAT]: <emp (sounding)="" 3-d="" [comt]:="" [coun]:="" [cs="" [i="" [sdat]:="" accuracy="" comment="" compilation="" context="" coordinate="" data="" datum="" depth="" fact="" geodetic="" i="" ll="" mea="" measurement="" multiplication="" nodes<="" of="" positional="" scale="" sounding="" th="" units=""><th>oty> an lower low water an lower low water CL]: 1:20000 [DUNI]: metres [HUNI]: metres PUNI]: feet - Latitude / Longitude or [COMF]: 10000000</th><th></th><th></th><th></th><th></th></emp>	oty> an lower low water an lower low water CL]: 1:20000 [DUNI]: metres [HUNI]: metres PUNI]: feet - Latitude / Longitude or [COMF]: 10000000				
Expected test results	T0525: An error" illegal value of DSPM.	PUNI" must be trig	gered.			
Secondary errors	None.					
Dataset Name	AA500012	S-58 test No.	T0541		Туре	Е
S-58 Description	Check that the SIGGRP format is correct have a value for SIGGRP.	t for all LIGHTS, exc	cept for fixed LIG	HTS, wh	ich must	not
Test Case No. 1	Light captured with attribute SIGGRP.					
Location	32°26'10.42"S 60°49'28.40"E	S57 Encoding	LIGHTS(P)	SIGGR	P=(1),(2+3	3)
Screen Capture	FI,(2	+3)R2s				
Expected test results	T0541: An error "bad format of 'siggrp'	<light> "must be t</light>	riggered.			

Secondary errors	T0073: A warning "Check that Signal Go space. Check that the format of the att					
Dataset Name	AA500012	S-58 test No.	T0542		Туре	E
S-58 Description	Check that any attribute value SIGGRP	starts and finishes	with a bracket.			
Test Case No. 1	Light captured with attribute SIGGRP.					
Location	32°26'23.10"S 60°49'26.61"E	S57 Encoding	LIGHTS(P)	SIGGR	P=1	
Screen Capture	AeroFl					
Expected test results	T0542: An error" bad format of 'siggrp'	<light> ""must be</light>	triggered.			
Secondary errors	T0073: A warning "Check that Signal Graphics space. Check that the format of the att			_	_	
Dataset Name	AA500012	S-58 test No.	T0547		Туре	E
S-58 Description	Check that no object contains attributes outside the list of permissible attributes for the object's class (as defined in the Object Catalogue and S-57 Supplement No 2 for the specified object.					
Test Case No. 1	Harbour area captured with attribute.					
Location	32°26'16.87"S 60°49'28.68"E	S57 Encoding	HRBARE (A)	_	A= 20120 ID= 2012	-

Screen Capture	
Expected test results	T0547: An error "attribute 'datend' not allowed in Harbour area (administrative)" must be triggered for the object created. T0547: An error "attribute 'datsta' not allowed in Harbour area (administrative)" must be triggered for the object created.
Secondary errors	None.
.	
Dataset Name	AA500012 S-58 test No. T0562 Type E
S-58 Description	Check for any NEWOBJ object, that at least one of the attributes INFORM or TXTDSC contains the name of the feature object. The text must commence with the approved object class name (CLSNAM) of the feature (i.e. New Object).
Test Case No. 1	NEWOBJ captured with attribute.
Location	32°26'18.63"S 60°49'53.72"E S57 Encoding NEWOBJ (A) CLSDEF=CLSDEF CLSNAM= New Object INFORM= Newobject
Screen Capture Expected test results	T0562: An error" Wrong description <new object="">" must be triggered.</new>

Secondary errors	T0566: A warning "Check that there is by an IHO ENC Encoding Bulletin" must				roved
Dataset Name	AA500012	S-58 test No.	T1500	Туре	W
S-58 Description	 Check that certain area objects do not LNDARE and SBDARE. LNDARE and CBLARE. 	overlap for logical	reasons:	,	
Test Case No. 1	SBDARE (A) captured on land area CBLARE (A) captured on land area				
Location	32°26'06.70"S 60°49'34.42"E	S57 Encoding	SBDARE (A) CBLARE (A)		
Screen Capture	2	LYLY E	çlı		
Expected test results	T1500: A warning" object overlaps the T1500: A warning" object overlaps the				
Secondary errors	T0093: A warning "SBDARE 'covers and objects created.	uncovers' object i	n land area" mus	t be triggered for	the
Dataset Name	AA500012	S-58 test No.	T1502	Туре	E
S-58 Description	Check that no spatial object contains the	ne attribute HORD	AT.		
Test Case No. 1	Anchorage area point captured.				
Location	32°26'15.08"S 60°49'28.50"E	S57 Encoding	ACHARE (P)	HORDAT=2	

Screen Capture	‡			
Expected test results	T1502:Error " prohibited attribute 'hor	dat'" must be trigge	ered.	
Secondary errors	None.			
		ı		
Dataset Name	AA500012	S-58 test No.	T1503	Type W
S-58 Description	Check that no object has an attribute v ELEVAT, HEIGHT, VERCCL, VERCLR, VER objects (subject to their own QA tests).	COP or VERCSA. Ex		
Test Case No. 1	Bridge area captured			
Location	32°26'13.47"S 60°49'35.55"E	S57 Encoding	BRIDGE (A)	VERDAT=3
Screen Capture		Aqui		
Expected test results	T1503: A warning" prohibited attribute	'verdat' in <bridge< th=""><th>>" must be trigg</th><th>gered.</th></bridge<>	>" must be trigg	gered.
Secondary errors	None.			
		I		
Dataset Name	AA500012	S-58 test No.	T1504	Type E
S-58 Description	Check that the value in the Vertical Dat is not null.	tum subfield (VDAT) of the Data Set	t Parameter field (DSPM)
Test Case No. 1	"VDAT" has been assigned "0" null valu	ue.		
Location	DSPM Parameters			
	I	1		

Screen Capture	i [DP-0000000002] DSPM i Horizontal geodetic datum [HDAT]: WGS 84 i Vertical datum [VDAT]: <empty> i Sounding datum [SDAT]: Mean lower low water i Compilation scale of data [CSCL]: 1:20000 i Units of depth measurement [DUNI]: metres i Units of height measurement [HUNI]: metres i Units of positional accuracy [PUNI]: feet i Coordinate units [COUN]: LL - Latitude / Longitude i Coordinate multiplication factor [COMF]: 10000000 i 3-D (sounding) multiplication factor [SOMF]: 10 i Geodetic Context Nodes</empty>
Expected test results	T1504: An error "illegal value of DSPM.VDAT" must be triggered.
Secondary errors	None.

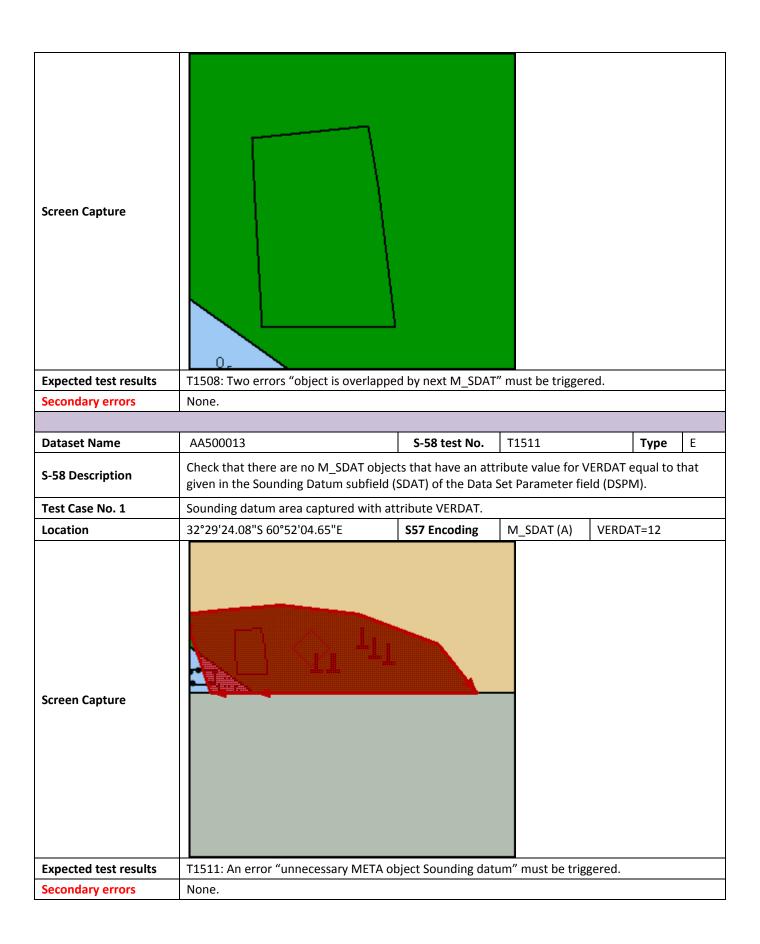
Test Dataset:AA500013

List of S58 Recommended ENC Validation Checks covered in this section:

S58 Test	Description			
1505	Check that there are no M_VDAT objects which have an attribute value for VERDAT equal to that given in the Vertical Datum subfield (VDAT) of the Data Set Parameter field (DSPM).			
1506	Check that all Geo objects which have attribute values relative to a Height Datum and which cross a M_VDAT object boundary are split at That boundary.			
1507	1507 Check that no M_VDAT objects overlap one another.			
1508	Check that no M_SDAT objects overlap one another.			
1511	Check that there are no M_SDAT objects that have an attribute value for VERDAT equal to that given in the Sounding Datum subfield (SDAT) of the Data Set Parameter field (DSPM).			
1512	Check that all SOUNDG objects and all those objects that have at least one of VALSOU, VALDCO, WATLEV, EXPSOU, DRVAL1 or DRVAL2			
	encoded with an explicit value and which cross a M_SDAT object boundary are split at that boundary.			
1513	Check that the value for the Units of Height measurement subfield (HUNI) of the Data Set Parameter field (DSPM) is (1) [metre].			
1515	Check that if an object contains a value for the attributes DATEND, DATSTA, PEREND, PERSTA, SORDAT, CPDATE, SUREND or SURSTA, that this value conforms to ISO 8601:1988.			
1516	Check that any Group 2 seasonal/periodic object (if the object class is concerned at once by the attributes STATUS, PERSTA and PEREND) with the attribute STATUS containing the value (5) [periodic/intermittent] also has the start and end of the active period encoded in PERSTA and PEREND, and vice versa.			
1517	Check that if an object contains values for the attributes TIMSTA and TIMEND, that these values conform to the format defined in Chapter 2 of S-57 Appendix A.			
1520	Check that the value of the Edition Number (EDTN) subfield of the Data Set Identification field (DSID) is correct.			
1523	Check that the value of the Issue date (ISDT) subfield of the Data Set Identification field (DSID) is correct, and that for data sets with a file name extension of ".000" it is greater than or equal to the value of the Update application date (UADT) subfield.			
1525	Check that no M_QUAL object that has an attribute value for DRVAL1 contains a value for POSACC.			
1526	Check that any M_QUAL object, which has an attribute value for SOUACC, also has an attribute value for DRVAL1.			
1529	Check that no object falling within a given M_QUAL object coverage has an attribute value for TECSOU that is equivalent to an attribute value for TECSOU on the M_QUAL object.			
1535	Check that no UWTROC object has a value for SOUACC that is equivalent to or degrades the SOUACC attribute on the object M_QUAL.			

Dataset Name	AA500013	S-58 test No.	T1505	Type [E
S-58 Description	Check that there are no M_VDAT object given in the Vertical Datum subfield (VI			•	that
Test Case No. 1	Captured M_VDAT object with attribut subfield (VDAT) of the Data Set Parame	•	that given in the	Vertical Datum	
Location	32°29'06.92"S 60°51'26.34"E	S57 Encoding	M_VDAT(A)	VERDAT=16	
Screen Capture					
Expected test results	T1505: An error "unnecessary META ob	oject Vertical datur	n of data" must k	e triggered.	
Secondary errors	None.				
Dataset Name	AA500013	S-58 test No.	T1506	Type E	E
S-58 Description	Check that all Geo objects which have a a M_VDAT object boundary are split at		ative to a Height	Datum and which c	cross
Test Case No. 1	Captured a BRIDGE cross a M_VDAT ob	ject boundary.			
Location	32°29'07.50"S 60°51'36.99"E	S57 Encoding	BRIDGE (A) M_VDAT (A)	VERDAT=17 VERDAT=16	
Screen Capture					

Secondary errors	T0513: An error "Check that an attril the general value defined by the me subfield (VDAT) of the Data Set Para created.	ta object. Attribute \	/ERDAT equals the	e Vertical Datum
Dataset Name	AA500013	S-58 test No.	T1507	Type E
S-58 Description	Check that no M_VDAT objects over	ap one another.		
Test Case No. 1	Vertical datum of data area captured	d overlapping with a	nother Vertical da	tum of data area.
Location	32°29'02.21"S 60°51'18.76"E	S57 Encoding	M_VDAT (A) M_VDAT (A)	VERDAT=12 VERDAT=16
Screen Capture				
Expected test results	T1507:Two errors "M_VDAT object i	s overlapped by next	: M_VDAT" must I	be triggered.
Secondary errors	None.			
		T	T	
Dataset Name	AA500013	S-58 test No.	T1508	Type E
S-58 Description	Check that no M_SDAT objects overl	ap one another.		
Test Case No. 1	Sounding datum area captured over	apping with another	sounding datum	area.
Location	32°29'23.65"S 60°52'01.12"E	S57 Encoding	M_SDAT (A) M_SDAT (A)	VERDAT=27 VERDAT=12



Dataset Name	AA500013	S-58 test No.	T1512	Type E
S-58 Description Test Case No. 1	Check that all SOUNDG objects and all WATLEV, EXPSOU, DRVAL1 or DRVAL2 object boundary are split at that bound SOUNDG, DEPARE (A), DEPCNT (L) and boundary captured.	encoded with an e dary.	xplicit value and w	vhich cross a M_SDAT
Location	32°29'24.21"S 60°52'00.02"E	S57 Encoding	DEPARE (A) DEPCNT (L) OBSTRN (A) SOUNDG (P)	DRVAL1=0 DRVAL2=1.8 VALDCO=0 VALSOU=2 EXPSOU=3 WATLEV=3
Screen Capture	05	2 0		
Expected test results	T1512: An error "spatial conflict betwee T1512: An error "spatial conflict betwee T1512: Two errors "spatial conflict betwee triggered. T1512: An error "spatial conflict betwee	en 'depcnt' and mo ween 'depare' and	eta object 'm_sdat meta object 'm_so	t' "must be triggered. dat' "must be
Secondary errors	None.			
		ı		
Dataset Name	AA500013	S-58 test No.	T1513	Type E
S-58 Description	Check that the value for the Units of Parameter field (DSPM) is (1) [metre].	of Height measure	ement subfield (H	HUNI) of the Data Set
Test Case No. 1	Assigned HUNI = feet(2) of the Data Set	t Parameter field (I	DSPM)	
Location	DSPM Parameters			
	I .	1	1	_1

Screen Capture	i [DP-0000000002] DSPM i Horizontal geodetic datum [HD i Vertical datum [VDAT]: Mean h i Sounding datum [SDAT]: Mean i Compilation scale of data [CSC i Units of depth measurement [I Units of positional accuracy [PI i Coordinate units [COUN]: LL - i Coordinate multiplication facto i 3-D (sounding) multiplication facto i Comment [COMT]: i Geodetic Context Nodes	nigh water In lower low water IL]: 1:20000 DUNI]: metres HUNI]: feet UNI]: metres Latitude / Longitude I (COMF]: 10000000		
Expected test results	T1513: An error "illegal value of DSPN	M.HUNI" must be tri	ggered.	
Secondary errors	None.			
Dataset Name	AA500013	S-58 test No.	T1515	Type E
S-58 Description	Check that if an object contains a v SORDAT, CPDATE, SUREND or SURST		•	
Test Case No. 1	BCNLAT x3 points with attributes cap M_QUAL (A) with attributes captured			
Location	32°29'23.80"S 60°52'03.92"E	S57 Encoding	BCNLAT (P) BCNLAT(P) BCNLAT(P) M_QUAL (A)	SORDAT=11112012 PERSTA=3101 PEREND=3107 DATSTA=25062010 DATEND=25122010 SURSTA=25252011 SUREND=25252010
Screen Capture	1	1		
Expected test results	T1515: Four errors "Check that if an open PEREND, PERSTA, SORDAT, CPDATE, \$8601:1988" must be triggered.	SUREND or SURSTA	that this value co	nforms to ISO
Secondary errors	T0073: Three warnings "Check that P trailing space. Check that the format created.			

Test Case No. 2	M_PROD (A) with attributes captured			
Location	32°29'03.14"S 60°52'09.90"E	S57 Encoding	M_PROD	CPDATE=27112012
Screen Capture				
Expected test results	T1515: errors "Check that if an object PEREND, PERSTA, SORDAT, CPDATE, S 8601:1988" must be triggered.			
Secondary errors	T0504: An error "prohibited object Pro	oduction informatio	on" must be trigg	ered.
Dataset Name	AA500013	S-58 test No.	T1516	Type W
S-58 Description	Check that any Group 2 seasonal/per attributes STATUS, PERSTA and PER [periodic/intermittent] also has the seasonal personal pers	END) with the att	ribute STATUS (containing the value (5)
Test Case No. 1	Captured BCNLAT point with attribute Captured BCNLAT point with attribute		ND.	
Location	32°29'24.12"S 60°52'02.71"E	S57 Encoding	BCNLAT(P)	STATUS=5 PERSTA=30.06 PEREND=01.01
Screen Capture	1	1		
Expected test results	T1516: A warning "periodic object wit T1516: A warning "periodic object wit T0073: A warning "Check that Periodic	hout 'persta'/'perer	nd' Beacon latera	al "must be triggered.
Secondary errors	space. Check that the format of the at	· ·		

S-58 Description Check that if an object contains values for the attributes TIMSTA and TIMEND, that these values conform to the format defined in Chapter 2 of 5-57 Appendix A. Test Case No. 1 Captured TS_TIS point with attribute value TIMSTA and TIMEND Location 32°29'23.68"S 60°52'02.38"E S57 Encoding T11517: An error "Check that if an object contains values for the attributes TIMSTA and TIMEND Screen Capture T1517: An error "Check that if an object contains values for the attributes TIMSTA and TIMEND 200629 TIMEND=210701T201 20629 TIMEND=210701T201 20630 T11517: An error "Check that if an object contains values for the attributes TIMSTA and TIMEND 200630 T0073: A warnings "Check that Time End (TIMEND) does not contain a leading or a trailing space. Check that the format of the attribute is valid* must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid* must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid* must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid* must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid* must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a lea							
conform to the format defined in Chapter 2 of S-57 Appendix A. Test Case No. 1 Captured TS_TIS point with attribute value TIMSTA and TIMEND TIMSTA=210708T201 20629 TIMEND=210701T201 20630 Screen Capture T1517: An error "Check that if an object contains values for the attributes TIMSTA and TIMEND, that these values conform to the format defined in Chapter 2 of S-57 Appendix A" must be triggered. T0073: A warnings "Check that Time End (TIMEND) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be trig	Dataset Name	AA500013	S-58 test No.	T1517		Туре	E
Screen Capture T1517: An error "Check that if an object contains values for the attributes TIMSTA and TIMEND, that these values conform to the format defined in Chapter 2 of S-57 Appendix A" must be triggered. T0073: A warnings "Check that Time End (TIMEND) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered.	S-58 Description	·					
Screen Capture T1517: An error "Check that if an object contains values for the attributes TIMSTA and TIMEND, that these values conform to the format defined in Chapter 2 of S-57 Appendix A" must be triggered. T0073: A warnings "Check that Time End (TIMEND) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered.	Test Case No. 1	Captured TS_TIS point with attribute value TIMSTA and TIMEND					
Expected test results T1517: An error "Check that if an object contains values for the attributes TIMSTA and TIMEND, that these values conform to the format defined in Chapter 2 of S-57 Appendix A" must be triggered. T0073: A warnings "Check that Time End (TIMEND) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered. T1520 Type E Check that the value of the Edition Number (EDTN) subfield of the Data Set Identification field (DSID) is correct. Test Case No. 1 Assigned EDTN = 0 of the Data Set Identification field (DSID)	Location	32°29'23.68"S 60°52'02.38"E	S57 Encoding	TS_TIS (P)	20629 TIMEN	ID=21070	
that these values conform to the format defined in Chapter 2 of S-57 Appendix A" must be triggered. T0073: A warnings "Check that Time End (TIMEND) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered. T1520 Type E Check that the value of the Edition Number (EDTN) subfield of the Data Set Identification field (DSID) is correct. Test Case No. 1 Assigned EDTN = 0 of the Data Set Identification field (DSID)	Screen Capture						
Check that the format of the attribute is valid" must be triggered. T0073: A warnings "Check that Time End (TIMSTA) does not contain a leading or a trailing space. Check that the format of the attribute is valid" must be triggered. Dataset Name AA500013 S-58 test No. T1520 Type E Check that the value of the Edition Number (EDTN) subfield of the Data Set Identification field (DSID) is correct. Test Case No. 1 Assigned EDTN = 0 of the Data Set Identification field (DSID)	Expected test results	that these values conform to the formatriggered.	at defined in Chapt	er 2 of S-57 Appe	endix A"	must be	
S-58 Description Check that the value of the Edition Number (EDTN) subfield of the Data Set Identification field (DSID) is correct. Test Case No. 1 Assigned EDTN = 0 of the Data Set Identification field (DSID)	Secondary errors	Check that the format of the attribute is volume T0073: A warnings "Check that Time End	alid" must be trigger d (TIMSTA) does not	red.			
S-58 Description Check that the value of the Edition Number (EDTN) subfield of the Data Set Identification field (DSID) is correct. Test Case No. 1 Assigned EDTN = 0 of the Data Set Identification field (DSID)	Dataset Name	AAE00013	C EQ tost No	T1E20		Tuna	
		Check that the value of the Edition N			a Set Ide	1	
Location DSID Parameters S57 Encoding	Test Case No. 1	Assigned EDTN = 0 of the Data Set Iden	tification field (DSI	D)			
	Location	DSID Parameters	S57 Encoding				

	1			
Screen Capture	Data set description i [DS-0000000001] DSID i Exchange Purpose [EXPP]: N - New i Intended usage [INTU]: 5 i Data set name [DSNM]: AA500013.000 i Edition number [EDTN]: 0 i Update number [UPDN]: 0 i Update application date [UADT]: 27-11-2012 i Issue date [ISDT]: 27-11-2011 i Edition number of S-57 [STED]: 03.1 Product specification [PRSP]: ENC i Product specification description [PSDN]: Product specification edition number [PRED]: 2.0 i Application profile identification [PROF]: EN - ENC New i Producing agency [AGEN]: AA i Comment [COMT]:			
Expected test results	T1520: An error "illegal value of DSID.E	DTN" must be trigg	gered.	
Secondary errors	T0534: An error "a delete cell message triggered.			DTN = 0" must be
		T	T	
Dataset Name	AA500013	S-58 test No.	T1523	Type E
S-58 Description	Check that the value of the Issue date (correct, and that for data sets with a fil the value of the Update application dat	le name extension		• • •
Test Case No. 1	Assigned ISDT =27-11-2011 of the Data date(UADT)	Set Identification f	field (DSID) less t	nan Update application
Location	DSID Parameters	S57 Encoding		
Screen Capture	Data set description Description Exchange Purpose [EXPP]: N - N Intended usage [INTU]: 5 Data set name [DSNM]: AA5000 Edition number [EDTN]: 0 Update number [UPDN]: 0 Update application date [UADT] Update application date [UADT] Edition number of S-57 [STED]: Product specification [PRSP]: EN Product specification description Product specification edition num Application profile identification Producing agency [AGEN]: AA Comment [COMT]:	013.000 : 27-11-2012 03.1 NC n [PSDN]: mber [PRED]: 2.0		
Expected test results	T1523: An error "illegal value of DSID.U	JADT - not equal to	ISDT" must be tr	iggered.
Secondary errors	None.			
Dataset Name	AA500013	S-58 test No.	T1525	Type E
S-58 Description	Check that no M_QUAL object that POSACC.	has an attribute v	value for DRVAL	
Test Case No. 1	Captured M_QUAL area with attribute	values DRVAL1 and	I POSACC.	
Location	32°29'24.06"S 60°51'58.85"E	S57 Encoding	M_QUAL (A)	DRVAL1=5 POSACC=10

Screen Capture	0.5			
Expected test results	T1525: An error "attribute conflict bet	ween 'drval1' and '	posacc' in Qualit	y of data" must be
Secondary errors	triggered.			
Secondary errors	None.			
Dataset Name	AA500013	S-58 test No.	T1526	Type E
S-58 Description	Check that any M_QUAL object, whic value for DRVAL1.			71
Test Case No. 1	Captured M_QUAL area with attribute	SOUACC and without	out attribute DR\	/AL1.
Location	32°29'24.18"S 60°51'59.18"E	S57 Encoding	M_QUAL(A)	SOUACC=10
Screen Capture				
Screen Capture Expected test results	T1526: An error "meaningless value of	'souacc' in Quality	of data" must be	e triggered.
•	T1526: An error "meaningless value of None.	'souacc' in Quality	of data" must be	e triggered.
Expected test results Secondary errors	None.		1	
Expected test results		S-58 test No.	T1529 ject coverage ha	Type E as an attribute value for
Expected test results Secondary errors Dataset Name	None. AA500013 Check that no object falling within a	S-58 test No. given M_QUAL obute value for TECSO otured.	T1529 ject coverage ha	Type E as an attribute value for

Screen Capture	1			
Expected test results	T1529: An error "redundant 'tecsou' is	defined by 'm_qua	l' " must be trigg	ered.
Secondary errors	None.			
			1	
Dataset Name	AA500013	S-58 test No.	T1535	Type E
S-58 Description	Check that no UWTROC object has a SOUACC attribute on the object M_QU		C that is equival	ent to or degrades the
Test Case No. 1	Captured UWTROC object with attribut SOUACC.	te SOUACC, falling		
Location	32°29'24.46"S 60°51'58.91"E	S57 Encoding	M_QUAL(A) UWTROC(P)	SOUACC=2 SOUACC=2 VALSOU=10
Screen Capture	10)			
Expected test results	T1535: An error "redundant 'souacc' is	defined by 'm_qua	ıl' must be trigge	ered.
Secondary errors	T1530: An error "Check that no object attribute value for SOUACC that is equi M_QUAL object" must be triggered for	ivalent to the SOUA the objects create	ACC or CATZOC a	ttributes for the
Test Case No. 2	Captured UWTROC object with attributed SOUACC.	te SOUACC, falling	within a given N	1_QUAL has an attribute
Location	32°29'24.45"S 60°51'59.07"E	S57 Encoding	M_QUAL(A) UWTROC(P)	SOUACC=0.6 CATZOC=5 SOUACC=1

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Screen Capture	+ + + + + + + + + + + + + + + + + + + +
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Expected test results	T1535: An error "redundant 'souacc' is defined by 'm_qual' " must be triggered.
Secondary errors	None.

Test Dataset:AA500014

List of S58 Recommended ENC Validation Checks covered in this section:

S58 Test	Description
1537	Check that no WRECKS object has a value for SOUACC that is equivalent to or degrades the SOUACC attribute on the object M_QUAL.
1539	Check that no OBSTRN object has a value for SOUACC that is equivalent to or degrades the SOUACC attribute on the object M_QUAL.
1541	Check that QUASOU when used on SOUNDG is not identical to the value in M_SREL.
1544	Check that no M_ACCY object contains the attributes HORACC, SOUACC and VERACC.
1545	Check that no object has an attribute value for HORACC without an attribute value for HORCLR.
1546	Check that no object has an attribute value for VERACC without a corresponding attribute value for at least one of VERCLR, VERCOP, VERCSA or VERCCL.
1548	Check that any non-bathymetric object, which has an attribute value for SORIND has a corresponding attribute value for SORDAT.
1550	Check that no M_CSCL object has a value for the attribute CSCALE equal to that given in the Compilation Scale of data subfield (CSCL) of the Data Set Parameter field (DSPM).
1551	Check that no two M_CSCL objects overlap.
1553	Check that any value of SCAMIN is set to a scale value smaller than or equal to the compilation scale of the data for the area.
1554	Check that no Group 1 objects and no meta objects have been encoded with the attribute SCAMIN.
1557	Check that all T_HMON objects have a value of (1) [simplified harmonic method of tidal prediction] or (2) [full harmonic method of tidal prediction] for the attribute T_MTOD.
1558	Check that all T_NHMN objects have a value of (3) [time and height difference non-harmonic method] for the attribute T_MTOD.
1560	Check that all TS_PRH objects have a value of (1) [simplified harmonic method of tidal prediction] or (2) [full harmonic method of tidal prediction] for the attribute T_MTOD.
1561	Check that all TS_PNH objects have a value of (3) [time and height difference non-harmonic method] for the attribute T_MTOD.
1563	Check that any RIVERS, CANALS, LAKARE, DOCARE or LOKBSN objects are covered by a LNDARE or UNSARE object of type Area.
1564	Check that no CTRPNT object contains the attributes VERDAT and VERACC.
1567	Check that no COALNE object contains the attributes VERDAT and VERACC.

Dataset Name	AA500014			S-58 test No.	T1537	Туре	E
S-58 Description		WRECKS object has a he object M_QUAL.	value for SO	UACC that is equiv	valent to or degra	des the S	SOUACC
Test Case No. 1	Captured WR	ECKS, SWPARE and M	_QUAL object	ts with attribute S	OUACC.		
Location	32°29'14.87"\$	S 60°47'35.78"E		S57 Encoding	WRECKS(P, A) SWPARE (A) M_QUAL(A)	CATWR SOUAC WATLE QUASO VALSOU DRVAL:	C=1 V=3 IU=6 J=10 1=10 C=5 C=2
Screen Capture	10	(10)					
Expected test results		rrors "no WRECKS obj bute on the object M_			it is equivalent to	or degra	des the
Secondary Errors	T1655: An err M_QUAL obje	or "no SWPARE object contains the attribe objects created.	t sharing the	same geo-spatial	-	-	
Test Case No. 2	Captured WR	ECKS, SWPARE and M	_QUAL object	ts with attribute S	OUACC.		
Location	32°29'14.89	"S 60°47'40.75"E		S57 Encoding	WRECKS(P, A) SWPARE (A)	CATWR SOUAC WATLE QUASO VALSOU	C=0.5 V=3 U=6 J=10
					M_QUAL(A)	CATZO(SOUAC DRVAL	C=1

Screen Capture		1					
Expected test results	SOUACC attri	rrors "no WRECKS obje bute on the object M_(QUAL." must	be triggered.	·		
Secondary Errors	M_QUAL obj	or "no SWPARE object ect contains the attribue objects created.					
Dataset Name	AA500014			S-58 test No.	T1539	Type	E
S-58 Description	Check that no	AA500014 S-58 test No. T1539 Type E Check that no OBSTRN object has a value for SOUACC that is equivalent to or degrades the SOUACC attribute on the object M_QUAL.					
Test Case No. 1	Captured OB	STRN (A), SWPARE (A) a	nd M_QUAL	objects with attri	bute SOUACC.		
Location	32°29'13.66"	S 60°47'56.18"E		S57 Encoding	OBSTRN(P, L, A) SWPARE (A) M_QUAL(A)	WATLE VALSOI QUASO SOUAC DRVAL: CATZOG SOUAC DRVAL:	J=10 U=6 C=1 1=10 C=5 C=2
Screen Capture	18	14 ₆	14.				
Expected test results	SOUACC attri	errors "no OBSTRN obj bute on the object M_0	QUAL." must	be triggered.	·		
Secondary Errors	M_QUAL obj	or "no SWPARE object ect contains the attribu e objects created.					
Test Case No. 2		STRN (A) and M_QUAL	objects with	attribute SOUACC	·•		
Location	32°29'15.53	"S 60°47'48.28"E		S57 Encoding	OBSTRN(P, L, A)	WATLE VALSON QUASO SOUAC	J=10 U=6

Screen Capture		(18)			SWPARE (A) M_QUAL(A)	DRVAL CATZO SOUAC DRVAL	C=5 C=1
Expected test results	SOUACC attri	errors "no OBSTRN obj bute on the object M_C	QUAL." must	be triggered.			
Secondary Errors	M_QUAL obje	or "no SWPARE object ect contains the attribute e objects created.	-	• .		•	
Dataset Name	AA500014			S-58 test No	. T1541	Туре	E
S-58 Description	Check that QI	JASOU when used on S	OUNDG is no	ot identical to the	value in M_SRE	L.	
Test Case No.1	Captured SOI	JNDG and M_SREL with	identical at	tribute QUASOU.			
Location	32°28'05.46"5	5 60°46'33.46"E		S57 Encoding	SOUNDG(P) M_SREL(A)	QUASC QUASC	
Screen Capture		6					
Expected test results		or "redundant 'quasou					
Secondary Errors		or "The feature's value ring the feature" must					the
						1	
Dataset Name	AA500014			S-58 test No	. T1544	Type	E

S-58 Description	Check that no	M_ACCY object conta	ins the attrib	utes HORACC, SC	OUACC and VERA	CC.	
Test Case No.1	Captured M_/	ACCY object with attrib	ute HORACC	, SOUACC and VE	RACC.		
Location	32°29'12.53"S	6 60°49'03.38"E		S57 Encoding	M_ACCY (A)	HORAC SOUAC VERAC POSSA	CC=1 C=1
Screen Capture							
Expected test results	T1544: An err	or "prohibited attribut or "prohibited attribut or "prohibited attribut	e 'souacc' in	Accuracy of data	" must be trigger	ed.	
Secondary Errors	T547: An erro	r "Object contains attr e triggered for the obje	ibutes outsid				e object
Dataset Name	AA500014			S-58 test No	. T1545	Tura	E
S-58 Description		object has an attribut	e value for H		L	Type for HOR	
Test Case No.1	Captured BRII	DGE object with attribu	ite HORACC	without an attrib	ute value for HO	RCLR.	
Location	32°29'14.81"S	660°48'38.94"E		S57 Encoding	BRIDGE (P, L, A)	CATBR HORAG	CC=10
			<u> </u>		PYLONS(A,P)	CATPY	L=4

Screen Capture			0				
Expected test results	T1545: Three	errors "prohibited attr	ibute 'horacc'	in Bridge" must	be triggered.		
Secondary Errors	T1797: A war	ning "the object bridge d.	cannot be dis	played in ECDIS"	must be trigger	ed for the	e point
Dataset Name	AA500014			S-58 test No.	T1546	Туре	E
S-58 Description		object has an attribute ERCLR, VERCOP, VERCS		RACC without a c	corresponding at	tribute v	alue for at
Test Case No.1	•	DGE object with attribu R, VERCOP, VERCSA or		thout a correspo	onding attribute	_	
Location	32°29'17.70"5	660°48'36.76"E		S57 Encoding	BRIDGE(P, L, A) PYLONS(A,P)	CATBROVERACO CATPYI	C=10

Screen Capture	· · · · · · · · · · · · · · · · · · ·			
Expected test results	T1546: Three errors "prohibited attribute			
Secondary Errors	T1797: A warning "the object bridge cann object created.	ot be displayed in ECDIS	' must be trigge	red for the point
Dataset Name	AA500014	S-58 test No	. T1548	Type W
S-58 Description	Check that any non-bathymetric object, wattribute value for SORDAT.	hich has an attribute va	ue for SORIND h	as a corresponding
Test Case No.1	Captured CBLARE object with attribute SC	RIND without SORDAT.		
Location	32°29'21.68"S 60°48'39.72"E	S57 Encoding	CBLARE (A)	CATCBL=1 SORIND=AA,AA,g raph,chart0014
Screen Capture	48			
Expected test results	T1548: Three warnings "'sorind' without 's	sordat' (or vice versa) in	CBLARE" must b	e triggered.
Secondary Errors	None.			
Dataset Name	AA500014	S-58 test No	. T1550	Type E

S-58 Description	Check that no M_CSCL object has a v Compilation Scale of data subfield (C			
Test Case No.1	Captured M_CSCL object with attributions and the Data Set Parameter fi	-	given in the comp	ilation scale of data
Location	32°28'46.54"S 60°47'33.94"E	S57 Encodin	g M_CSCL (A)	CSCALE=20000
Screen Capture	25 27 ₁ 28 23 41 23 ₁ 41 20 20 24 27	11 ₂ 8 11 ₃ 6 4 11 ₄ 6 4 11 ₆ 12 ₁ 6 4 10 ₂ 12 ₃ 14 ₃ 10 ₃ 10 ₄ 10 ₅ 12 ₆ 10 ₆ 11 ₆		
Expected test results	T1550: An error "unnecessary META	object of Compilation scal	e of data" must be	triggered.
Secondary Errors	None.	· · · · · · · · · · · · · · · · · · ·		
Dataset Name	AA500014	S-58 test	No. T1551	Type E
S-58 Description	Check that no two M_CSCL objects of	l .	1	7 7
Test Case No.1	Captured M_CSCL object overlapping	g with each other with diff	erent compilation :	scales.
Location	32°28'32.43"S 60°48'59.49"E	S57 Encodin	M_CSCL(A) M_CSCL(A)	CSCALE=25000 CSCALE=30000
Screen Capture				
Expected test results	T1551: An error "object is overlappe T1551: An error "object is overlappe			

Dataset Name	AA500014			S-58 test No.	T1553	Туре	E
S-58 Description	Check that an	y value of SCAMIN is se r the area.	et to a scale v	value smaller thar	or equal to the	compilat	ion scale
Test Case No.1	Captured AIR	ARE with attribute SCA	MIN smaller	than and equal to	the compilation	scale.	
Location	32°27'56.67"5	60°48'56.00"E		S57 Encoding	AIRARE (P, A)	SCAMI	N=10000
Screen Capture		소 소 소 소 소 소 소 소 소 소 소 소		3			
Expected test results	T1553: Two e must be trigg	rrors "value of 'scamin' ered.	is above cor	npilation scale (ol	oject is invisible)	in Airpor	t area"
Secondary Errors	None.						
Dataset Name	AA500014			S-58 test No.	T1554	Туре	Е
S-58 Description	Check that no	Group 1 objects and n	o meta obje	cts have been enc	oded with the a	ttribute S	CAMIN.
Test Case No.1	Assigned attri	ibute SCAMIN for 7 Gro	up 1 objects	and meta M_NS\	'S object.		
Location	32°28'34.91"5	5 60°48'25.59"E		S57 Encoding	DEPARE(A) LNDARE(A) UNSARE(A) FLODOC(A) PONTON(A) HULKES(A) DRGARE(A)	SCAMI	N=25000
					M_NSYS	MARSY ORIEN' SCAMI	

Screen Capture	3 B A /			
Expected test results	T1554: An error "prohibited attribute 's triggered.	scamin' in Land area" must becamin' in Pontoon" must becamin' in Unsurveyed area scamin' in Hulk" must be triscamin' in Floating dock" mecamin' in Dredged area" mecamin' in navigational systems	be triggered. e triggered. " must be trigger ggered. ust be triggered. ust be triggered. em of marks in N	1_NSYS" must be
Secondary Errors	T547: Three errors "Object contains att object class" must be triggered for the		f permissible att	ributes for the
Dataset Name	AA500014	S-58 test No	. T1557	Type E
S-58 Description	Check that all T_HMON objects have a v (2) [full harmonic method of tidal predi			tidal prediction] or
Test Case No.1	Captured T_HOMN object with attribut	e T_MTOD.	I =	
Location	32°27'37.14"S 60°47'57.01"E	S57 Encoding	T_HMON (P, A)	T_MTOD=3
Screen Capture		=		
Expected test results	T1557: Two errors "meaningless value of	of 't_mtod' in Tide - harmo	nic prediction" m	nust be triggered.
Expected test results	T2000: Two warnings "T_HMON should			

Dataset Name	AA500014			S-58 test No	. T1558	Туре	Е
S-58 Description	Check that al for the attrib	IT_NHMN objects have ute T_MTOD.	a value of (3) [time and heigh	nt difference non	-harmoni	c method]
Test Case No.1	Captured T_N	NHMN object with attri	oute T_MTO).			
Location	32°27'43.98"	S 60°47'52.54"E		S57 Encoding	T_NHMN (P, A)	т_мтс	D=1
Screen Capture	4	- - -	\ \frac{1}{2}				
Expected test results	triggered.	errors "meaningless val					
Secondary Errors		varnings "T_NHMN sho or T_MTOD" must be tr					lal
Data at Name	A A 50004 A		T	C	T4560	T	 -
Dataset Name	AA500014	LTC DDILL I : I		S-58 test No		Туре	E 1
S-58 Description		ITS_PRH objects have a onic method of tidal pr		- •		idai predi	ction] or
Test Case No.1	Captured TS_	PRH object with attribu	ite T_MTOD.		T	1	
Location	32°27'51.80"	S 60°47'52.06"E		S57 Encoding	TS_PRH (P, A)	T_MTC	D=3
Screen Capture	❖	 - -					
Expected test results	T1560: Two 6	errors "meaningless val	ue of 't_mtoo	d' in <tidal strear<="" th=""><th>m - harmonic pre</th><th>diction></th><th></th></tidal>	m - harmonic pre	diction>	
Secondary Errors	T2000: Two v	varnings "TS_PRH shou 「_MTOD" must be trigg	ld not have v	alue 3 [height an	d time difference		monic

Dataset Name	AA500014		S-58	test No.	T1561	Туре	Е
S-58 Description	Check that		e a value of (3) [time an				
Test Case No.1	Captured 1	S_PNH object with attr	ibute T_MTOD.				
Location	32°28'02.1	0"S 60°47'56.41"E	S57 Enc	oding	TS_PNH (P, A)	T_MTC)D=1
Screen Capture		•>					
Expected test results	T1561: Two	o errors "meaningless v	alue of 't_mtod' in Tidal	stream - I	non-harmonic p	redictio	n" must b
	T2000: Tw		ould not have value 1 [si triggered related to the	-			al .
Secondary Errors							
Secondary Errors	I						
Secondary Errors Dataset Name	AA500014		S-58	test No.	T1563	Туре	E
Dataset Name	AA500014 Check that		S-58 AKARE, DOCARE or LOKE		<u> </u>		I .
	AA500014 Check that UNSARE ol	any RIVERS, CANALS, Loject of type Area.	L	SN objec	ts are covered b	by a LND	1

Screen Capture	T1562: An orr	or "River object is cove)	hitad 'danara" r	must k	oo triggorad		
Expected test results	T1563: An err T1563: An err T1563: An err	or "Canal object is cove or "Lake object is cove or "Dock area object is or "Lock basin object is	ered by proh red by prohil covered by	ibited 'depare" oited 'depare" n prohibited 'depa	must l nust b are" m	be triggered. e triggered. nust be trigge	ered.	
Secondary Errors	None.							
Dataset Name	A A F 0 0 0 1 4			C FO toot N	_	T1F64	Tuna	Te
Dataset Name	AA500014			S-58 test N		T1564	Type	E
S-58 Description	Check that no	CTRPNT object contain	ns the attribu	utes VERDAT an	d VER	ACC.		
Test Case No.1	Captured CTR	PNT object with attribu	ites VERDAT	and VERACC.			_	
Location	32°28'49.13"5	5 60°48'47.10"E		S57 Encoding	СТ	TRPNT(P)	VERDA VERAC ELEVA	C=1
Screen Capture		•						
Expected test results	T1564: An err	or "prohibited attribut or "prohibited attribut	e 'veracc' in	Control point" n	nust b	e triggered.		
Secondary Errors		r "Object contains attri e triggered for the obje		le of the list of p	ermis	sible attribu	tes for th	e object
Dataset Name	AA500014			S-58 test N	о.	T1567	Туре	E

S-58 Description	Check that no COALNE object contains th	e attributes VERDAT and	VERACC.			
Test Case No.1	Assigned VERDAT and VERACC attribute values for COALNE.					
Location	32°29'04.15"S 60°47'32.72"E	S57 Encoding	COALNE(L)	VERDAT=27 VERACC=1 ELEVAT=10		
Screen Capture						
Expected test results	T1567: An error "prohibited attribute 've T1567: An error "prohibited attribute 've					
Secondary Errors	T547: An error "Object contains attribute class" must be triggered for the objects c		rmissible attribu	utes for the object		

Test Dataset:AA500015

List of S58 Recommended ENC Validation Checks covered in this section:

S58 Test	Description
1570	Check that no SLCONS object contains the attributes VERDAT and VERACC.
1571	Check that no BERTHS object contains the attribute VERDAT.
1572	Check that no DRYDOC object contains the attribute VERDAT.
1575	Check that no FLODOC object contains the attributes VERDAT and VERACC.
1577	Check that no DOCARE object shares the same geo-spatial position and geometry as a SEAARE object.
1578	Check that no GATCON object has an attribute value for VERDAT without an attribute value for VERCLR.
1581	Check that no LOKBSN object shares the same geo-spatial position and geometry as a SEAARE object.
1582	Check that no GRIDRN object contains the attributes HORACC and VERACC.
1583	Check that no MORFAC object contains the attributes VERDAT and VERACC.
1584	Check that any area MORFAC object with a WATLEV attribute value of 1 [partly submerged at high water], 2 [always dry] or 6 [subject to inundation or flooding] is covered by a LNDARE object of type Area.
1585	Check that no PILPNT object contains the attributes VERDAT and VERACC.
1586	Check that no PONTON object contains the attribute VERACC.
1587	Check that no HULKES object contains the attributes HORACC and VERACC.
1589	Check that any object having a value of (1) [under construction], (3) [under reclamation] or (5) [planned construction] for the attribute CONDTN contains the year or date of the information in SORDAT.
1590	Check that any LNDRGN object is covered (partially or entirely) by a LNDARE object of type Area (or contains a point or a line LNDARE).
1591	Check that no LNDELV object contains the attributes VERDAT and VERACC.
1592	Check that any COALNE object adjacent to a LNDRGN object with a value of (2) [marsh] for CATLND contains a value of (8) [marshy shore] for the attribute CATCOA, and that the coastline's spatial object has a value of (4) [approximate] for the attribute QUAPOS.
1593	Check that no SLOGRD object contains the attributes NATCON and NATQUA.
1594	Check that no SLOTOP object contains the attributes NATCON, NATQUA, VERACC and VERDAT.

Dataset Name	AA500015	S-58 test No.	T1570	Туре	E		
S-58 Description	Check that no SLCONS object contains t	the attributes VERI	DAT and VERACC.				
Test Case No. 1	Captured SLCONS (P, L, A) object with a	ttributes VERDAT	and VERACC.				
Location	32°28'57.01"S 60°44'50.90"E	32°28'57.01"S 60°44'50.90"E					
Screen Capture		7					
Expected test results	T1570:Three errors "prohibited attribut T1570: Three errors "prohibited attribu	ite 'veracc' in Shore	eline construction" mu	ust be trigge	ered.		
Secondary Errors	T547: Three errors "Object contains att object class" must be triggered for the		the list of permissible	attributes f	or the		
Dataset Name	AA500015	S-58 test No.	T1571	Туре	E		
S-58 Description	Check that no BERTHS object contains t			1700	-		
Test Case No. 1	Captured BERTHS (P, L, A) objects with	attribute VERDAT					
		attribute vend/tr.					
Location	32°29'00.52"S 60°46'01.31"E	S57 encoding	BERTHS (P, L, A)	VERDAT=	3		
Location Screen Capture			BERTHS (P, L, A)	VERDAT=	3		
		S57 encoding		VERDAT=	3		
Screen Capture	32°29'00.52"S 60°46'01.31"E	ute 'verdat' in Bert	h" must be triggered.				
Screen Capture Expected test results	32°29'00.52"S 60°46'01.31"E T1571: Three errors: "prohibited attributed attr	ute 'verdat' in Bert	h" must be triggered.				

S-58 Description	Check that no DRYDOC object contains the attribute VERDAT.						
Test Case No. 1	Dry dock area captured with attribute VERDAT.						
Location	32°29'00.30"S 60°45'59.19"E	S57 encoding	DRYDOC (A)	VERDAT=3			
Screen Capture							
Expected test results	T1572: An error "prohibited attribute						
Secondary Errors	T547: An error "Object contains attrib object class" must be triggered for the		ist of permissible attrib	outes for the			
Data at Nama	AA500015	C FO to at No	T4575	Time 5			
Dataset Name	AA500015	S-58 test No.	T1575	Type E			
S-58 Description	Check that no FLODOC object contain	s the attributes VER	RDAT and VERACC.				
Test Case No. 1	Captured FLODOC (L, A) object with a	ttributes VERDAT ar	nd VERACC.	1			
Location	32°28'56.55"S 60°46'01.05"E	S57 encoding	FLODOC (L, A)	VERDAT=3 VERACC=3			
Screen Capture	24						
Expected test results	T1575: Two errors "prohibited attribu T1575: Two errors "prohibited attribu						
Secondary Errors	T547: Two errors "Object contains att object class" must be triggered for the		he list of permissible a	ttributes for the			
				, , , , , , , , , , , , , , , , , , ,			
Dataset Name	AA500015	S-58 test No.	T1577	Type E			
Dataset Name S-58 Description	AA500015 Check that no DOCARE object shares object.			71: -			
	Check that no DOCARE object shares	the same geo-spatia		71: -			

	1		DOCARE (A)		
Screen Capture					
Expected test results	T1577: Two errors "object overlaps the triggered.	prohibited 'docar	e' Sea area/named wa	ter area" m	ust be
Secondary Errors	None.				
				1	
Dataset Name	AA500015	S-58 test No.	T1578	Туре	E
S-58 Description	Check that no GATCON object has an a VERCLR.	ttribute value for \	/ERDAT without an att	ribute value	for
Test Case No. 1	Captured GATCON (P, L, A) objects with	attribute VERDAT	-		
Location	32°29'01.19"S 60°45'58.35"E	S57 encoding	GATCON(P, L, A)	VERDAT= HORCLR= line featu	3 (for
Screen Capture					
Expected test results	T1578: Three errors "prohibited attribu				
Secondary Errors	T1503: warning "no object has an attril ELEVAT, HEIGHT, VERCCL, VERCLR, VER objects (subject to their own QA tests)'	COP or VERCSA. E	xceptions are M_VDA	Γand M_SD	AT
Dataset Name	AA500015	S-58 test No.	T1581	Туре	E
S-58 Description	Check that no LOKBSN object shares object.		<u> </u>	1	l .
Test Case No. 1	Lock basin area object captured overla	pping with sea are	a.		
Location	32°28'58.28"S 60°45'58.82"E	S57 encoding	LOKBSN (A) SEAARE (P, A)	OBJNAM=	-Denis

Screen Capture					
Expected test results	T1581: Two errors "object overlaps the triggered.	e prohibited 'lokbsı	n' Sea area/named w	ater area" m	nust be
Secondary Errors	None.				
Dataset Name	AA500015	S-58 test No.	T1582	Туре	E
S-58 Description	Check that no GRIDRN object contains	the attributes HOF	RACC and VERACC.		
Test Case No. 1	Captured GRIDRN (P, A) objects with a	ttributes HORACC a	and VERACC.		
Location	32°28'37.15"S 60°46'17.65"E	S57 encoding	GRIDRN (P, A)	HORACC VERACC=	
Screen Capture					
Expected test results	T1582: Two errors "prohibited attribut T1582: Two errors "prohibited attribut	e 'veracc' in Gridir	on" must be triggered	d.	
Secondary Errors	T1797: warning "the object gridrn [FE-for the point feature created. T547: Two errors "Object contains attrobject class" must be triggered for the	ibutes outside of t			
D	4.4500045		T4500	_	
Dataset Name	AA500015	S-58 test No.	T1583	Туре	E
S-58 Description	Check that no MORFAC object contains	s the attributes VE	RDAT and VERACC.		_
Test Case No. 1	Captured MORFAC (P, L, A) with attribu	utes VERDAT and V	ERACC.		

	1	_	T	T
Location	32°28'36.20"S 60°46'19.83"E	S57 encoding	MORFAC (P, L, A)	VERDAT=3 VERACC=3 CATMOR=1 HEIGHT=3
Screen Capture				
Expected test results	T1583: Three errors "prohibited attributions". T1583: Three errors "prohibited attributions". T1583: Three errors "Object to the control of t	ute 'veracc' in Moo	ring/warping facility"	must be triggered.
Secondary Errors	T547: Three errors "Object contains at object class" must be triggered for the		the list of permissible	attributes for the
				Τ_ Τ_
Dataset Name	AA500015	S-58 test No.	T1584	Type E
S-58 Description	Check that any area MORFAC object w high water], 2 [always dry] or 6 [su LNDARE object of type Area.			-
Test Case No. 1	Captured MORFAC (A) objects with att	ribute WATLEV wit	hout covering a LNDA	RE (A) object.
Location	32°28'42.07"S 60°46'08.40"E	S57 encoding	MORFAC (A)	WATLEV=1,2 and 6 CATMOR=1
Screen Capture				
Expected test results	T1584: "object is not covered by a ma triggered.	•		
Secondary Errors	T1786: A warning "any objects of type LNDARE object of type Area" must be to			•
	14500045		T1585	T - T-
Dataset Name	AA500015	S-58 test No.	11303	Type E
S-58 Description	Check that no PILPNT object contains t			Type E

Location	32°28'14.89"S 60°45'34.56"E	S57 encoding	PILPNT (P)	VERDAT=3 VERACC=3 HEIGHT=3		
Screen Capture	•					
Expected test results	T1585: An error "prohibited attribute T1585: An error "prohibited attribute	'veracc' in Pile" mu	st be triggered.			
Secondary Errors	T547: An error "Object contains attrib object class" must be triggered for the		list of permissible at	tributes for the	e	
Dataset Name	AA500015	S-58 test No.	T1586	Туре	E	
S-58 Description	Check that no PONTON object contain			1700		
Test Case No. 1	PONTON (L, A) captured with attribute VERACC.					
rest case No. 1	PONTON (L, A) captured with attribute	e VERACC.				
Location	32°28'58.93"S 60°44'48.40"E	S57 encoding	PONTON(L, A)	VERACC=3		
	32°28'58.93"S 60°44'48.40"E	S57 encoding				
Location	32°28'58.93"S 60°44'48.40"E T1586: Two errors "prohibited attribu"	s57 encoding	on" must be triggere	d.		
Location Screen Capture	32°28'58.93"S 60°44'48.40"E	te 'veracc' in Ponto	on" must be triggere	d.		
Screen Capture Expected test results Secondary Errors	T1586: Two errors "prohibited attributed to be provided by the contains at object class" must be triggered for the	te 'veracc' in Ponto tributes outside of e objects created.	on" must be triggere the list of permissibl	d. e attributes fo	rthe	
Screen Capture Expected test results	32°28'58.93"S 60°44'48.40"E T1586: Two errors "prohibited attributed attribu	te 'veracc' in Ponto tributes outside of e objects created.	on" must be triggere the list of permissibl T1587	d.		
Expected test results Secondary Errors Dataset Name	32°28'58.93"S 60°44'48.40"E T1586: Two errors "prohibited attributed to the second of	s57 encoding te 'veracc' in Ponto ctributes outside of e objects created. S-58 test No. the attributes HOR	on" must be triggere the list of permissibl T1587 ACC and VERACC.	d. e attributes fo	rthe	

Screen Capture				
Expected test results	T1587: Two errors "prohibited attribut T1587:Two errors "prohibited attribute	e 'veracc' in Hulk" n	nust be triggered.	
Secondary Errors	T547: Two errors "Object contains attri object class" must be triggered for the		ne list of permissible a	ttributes for the
Dataset Name	AA500015	S-58 test No.	T1589	Type W
S-58 Description	Check that any object having a value of or (5) [planned construction] for information in SORDAT.			
Test Case No. 1	Captured SLCONS (P, L, A) objects with	attribute CONDTN		
Location	32°28'31.85"S 60°46'24.83"E	S57 encoding	SLCONS (P, L, A)	CONDTN=1,3 and 5
Screen Capture				
Expected test results	T1589:3 Warning "'sordat' must exist for T1589:3 Warning "'sordat' must exist	or 'condtn:3' Shore	line construction" mu	st be triggered.
Secondary Errors	None			
Dataset Name	AA500015	S-58 test No.	T1590	Type E
S-58 Description	Check that any LNDRGN object is cover (or contains a point or a line LNDARE).	red (partially or ent	irely) by a LNDARE ob	ject of type Area
Test Case No. 1	Captured LNDRGN (P, A) objects within	a DEPARE.		
Location	32°28'33.73"S 60°46'23.75"E	S57 encoding	LNDRGN (P, A)	OBNMAM=Denis
	İ		· · ·	

Screen Capture				
Expected test results	T1590: Two errors "land region withou	t land area Land re	gion" must be triggere	ed.
Secondary Errors	None			
Dataset Name	AA500015	S-58 test No.	T1591	Type E
S-58 Description	Check that no LNDELV object contains	the attributes VERE	DAT and VERACC.	
Test Case No. 1	LNDELV (P, L) captured with attributes	VERDAT, ELEVAT aı	nd VERACC.	
Location	32°27'55.76"S 60°45'50.11"E	S57 encoding	LNDELV (P, L)	VERDAT=3 VERACC=3 ELEVAT=10
Screen Capture				
Expected test results	T1591:Two errors "prohibited attributed T1591:Two errors "prohibited attributed attribut	'verdat' in Land el	evation" must be trigg	gered.
Secondary Errors	T547: Two errors "Object contains attri object class" must be triggered for the		ne list of permissible at	tributes for the
	object class infust be triggered for the	objects created.		
Dataset Name	AA500015	S-58 test No.	T1592	Type W
S-58 Description	Check that any COALNE object adjace CATLND contains a value of (8) [marsh spatial object has a value of (4) [approx	ent to a LNDRGN y shore] for the at	object with a value tribute CATCOA, and t	of (2) [marsh] for
Test Case No. 1	 Captured LNDRGN (A) object with attril Assigned attributes CATCOA=8 Assigned attributes CATCOA= 	3 for COALNE.	UAPOS=4 for COALNE.	
Location	32°27'57.68"S 60°45'59.63"E	S57 encoding	COALNE (L) LNDRGN (A)	CATCOA=8 CATLND =2

Screen Capture	本 本 本 本 本 本 本 不 不 不 不 不 不 不 不 不 不 不 不 不				
Expected test results	T1592: 2 Warnings "marshy shore with	out 'catcoa: 8' or 'o	quapos: 4'" must be	triggered.	
Secondary Errors	None				
			_		
Dataset Name	AA500015	S-58 test No.	T1593	Туре	Е
S-58 Description	Check that no SLOGRD object contains	the attributes NAT	CON and NATQUA.		
Test Case No. 1	Sloping ground (P, A) captured with att	ributes NATCON a	nd NATQUA.		
Location	32°28'08.40"S 60°46'23.28"E	S57 encoding	SLOGRD(P, A)	NATCON NATQUA CATSLO=	=3
Screen Capture	*				
Expected test results	T1593: Two errors "prohibited attribut T1593: Two errors "prohibited attribut	e 'natqua' in Slopir	ng ground" must be t	riggered.	
Secondary Errors	T547: Two errors "Object contains attr object class" must be triggered for the		ne list of permissible	attributes fo	r the
	Object class Hust be triggered for the	objects created.			
Dataset Name	AA500015	S-58 test No.	T1594	Туре	E
S-58 Description	Check that no SLOTOP object contains	I			
Test Case No. 1	SLOTOP (L) objects captured with attril	butes NATCON, NA	TQUA, VERACC and V	VERDAT.	
Location	32°28'07.69"S 60°46'04.80"E	S57 encoding	SLOTOP (L)	NATCON NATQUA VERACC= VERDAT= ELEVAT=	=3 :3 :3

Screen Capture	O ₆
Expected test results	T1594: An error "prohibited attribute 'natcon' in Slope topline" must be triggered. T1594: An error "prohibited attribute 'natqua' in Slope topline" must be triggered. T1594: An error "prohibited attribute 'veracc' in Slope topline" must be triggered. T1594: An error "prohibited attribute 'verdat' in Slope topline" must be triggered.
Secondary Errors	T547: An error "Object contains attributes outside of the list of permissible attributes for the object class" must be triggered for the objects created.

Test Dataset:AA500016

List of S58 Recommended ENC Validation Checks covered in this section:

S58 Test	Description
1595	Check that no SLOTOP object with a value of (6) [cliff] for the attribute CATSLO shares the same geo-spatial position and geometry as a COALNE object.
1597	Check that no RIVERS object shares the same geo-spatial position and geometry as a SEAARE object.
1598	Check that no RAPIDS object contains the attribute VERACC.
1600	Check that no WATFAL object contains the attribute VERACC.
1601	Check that no LAKARE object contains the attributes VERACC and VERDAT.
1602	Check that no LAKARE object shares the same geo-spatial position and geometry as a SEAARE object.
1604	Check that any COALNE object adjacent to a LNDRGN object with a value of (15) [salt pan] for CATLND contains a value of (2) [flat coast] for the attribute CATCOA.
1606	Check that any COALNE object adjacent to an ICEARE object with a value of (5) [glacier] for CATICE contains a value of (6) [glacier (seaward end)] for the attribute CATCOA.
1608	Check that no VEGATN object contains the attributes VERACC and VERDAT.
1609	Check that no CANALS object shares the same geo-spatial position and geometry as a SEAARE object.
1610	Check that no RAILWY object contains the attribute VERACC.
1611	Check that no TUNNELS object contains the attribute BURDEP.
1613	Check, for any TUNNEL object, which covers a CANALS object, that the attributes HORACC, HORCLR, VERACC and VERCLR are not encoded.
1614	Check that no TUNNEL objects has any other non-hydrographic object (RAILWY, ROADWY etc) encoded within it.
1616	Check that no DAMCON object contains the attributes VERACC and VERDAT.
1618	Check that no DYKCON object contains the attributes VERDAT and VERACC.
1620	Check for any edge of a DYKCON object which is shared by both a LNDARE object of type area and a DEPARE, DRGARE or UNSARE object of type area, that it is also shared by a linear SLCONS object without a value for CATSLC.
1623	Check that if an object BRIDGE overlaps navigable water, its supports are encoded as PYLONS with a value of (4) [bridge pylon/tower] or (5) [bridge pier] for the attribute CATPYL.
1626	Check that no AIRARE object contains the attribute CONVIS.
1627	Check that no RUNWAY object contains the attribute CONVIS.

spatial position and geometry as a COALNE object		bute CATSI	I O shara					
Captured SLOTOP (L) object with attribute CATSL	Check that no SLOTOP object with a value of (6) [cliff] for the attribute CATSLO shares the same geospatial position and geometry as a COALNE object.							
Captured SLOTOP (L) object with attribute CATSLO, shares the same geometry of COALNE.								
32°27'33.01"S 60°43'03.10"E	S57 Encoding SLOTOP (L) CATSLO=6 COALNE (L)							
T1595: A warning "cliff along coast line" must be	triggered.							
None.								
				1	ı			
AA500016	S-58 test N	o. T	1597	Туре	E			
Check that no RIVERS object shares the same geo	o-spatial position	and geome	etry as a	SEAARE o	bject.			
Captured RIVERS (A) object shares with the same	geometry as SEA	ARE (A) ob	bject.					
32°27'36.20"S 60°43'03.57"E	S57 Encoding		(A)		=UNK			
T1507. An arron "object to the scale of the								
	AA500016 Check that no RIVERS object shares the same geo Captured RIVERS (A) object shares with the same 32°27'36.20"S 60°43'03.57"E	AA500016 Check that no RIVERS object shares the same geo-spatial position Captured RIVERS (A) object shares with the same geometry as SEA 32°27'36.20"S 60°43'03.57"E S57 Encoding	AA500016 S-58 test No. T Check that no RIVERS object shares the same geo-spatial position and geom Captured RIVERS (A) object shares with the same geometry as SEAARE (A) of RIVERS ()	AA500016 S-58 test No. T1597 Check that no RIVERS object shares the same geo-spatial position and geometry as a Captured RIVERS (A) object shares with the same geometry as SEAARE (A) object. 32°27'36.20"S 60°43'03.57"E S57 Encoding RIVERS (A) SEAARE (A)	AA500016 S-58 test No. T1597 Type Check that no RIVERS object shares the same geo-spatial position and geometry as a SEAARE of Captured RIVERS (A) object shares with the same geometry as SEAARE (A) object. 32°27'36.20"S 60°43'03.57"E S57 Encoding RIVERS (A) SEAARE (A) OBJNAM: NOWN			

Secondary errors	None.				
Secondary errors	None.				
Dataset Name	AA500016	S-58 test N	o. T1598	Type E	
S-58 Description	Check that no RAPIDS object contains the attribu	ute VERACC.			
Test Case No.1	Captured RAPIDS (P, L, A) object with attribute \	/ERACC of the ove	erlying River area.		
Location	32°27'37.61"S 60°43'03.97"E	S57 Encoding RAPIDS VERAC (P,L&A)			
Screen Capture	0				
Expected test results	T1598: Three errors "prohibited attribute 'verac				
Secondary errors	T1797: A warning "the object rapids cannot be object created.	displayed in ECDIS	" must be triggere	ed for the point	
Dataset Name	AA500016	S-58 test N	o. T1600	Type E	
S-58 Description	Check that no WATFAL object contains the attrib	oute VERACC.			
Test Case No.1	Captured WATFAL (P, L) objects with attribute V	ERACC of the ove	rlying RIVERS (A).		
Location	32°27'39.33"S 60°43'04.55"E	S57 Encoding	RIVERS(A) WATFAL (P&L)	VERACC=1	
Screen Capture	0				
Expected test results	T1600: Two errors "prohibited attribute 'veracc'	in Waterfall" mus	st be triggered.		

Secondary errors	T1797: A warning "the object watfal cannot be object created.	displayed in ECDIS	" must l	oe triggere	ed for the p	oint
Dataset Name	AAE00016	C EQ tost N	lo.	T1601	Tymo	E
Dataset Name	AA500016 S-58 test No. T1601 Type					E
S-58 Description	Check that no LAKARE object contains the attrib	utes VERACC and	VERDA1	г.		
Test Case No.1	Captured Lake area object with attributes VERA	CC and VERDAT.				
Location	32°27'41.50"S 60°43'02.88"E	S57 Encoding	LAKAF	RE(A)	VERACC=1 VERDAT=1	
Screen Capture						
Expected test results	T1601: An error "prohibited attribute 'veracc' in T1601: An error "prohibited attribute 'verdat' in					
Secondary errors	None.		00			
Dataset Name	AA500016	S-58 test N	lo.	T1602	Туре	Е
S-58 Description	Check that no LAKARE object shares the same g object.	eo-spatial position	n and ge	ometry as	a SEAARE	
Test Case No.1	Captured Lake area object shares with the same	geometry as SEA	ARE (A)	object.		
Location	32°27'44.84"S 60°43'01.29"E	S57 Encoding	LAKAF SEAAF		OBJNAM: NOWN	=UNK

Screen Capture						
Expected test results	T1602: An error "seaare object overlaps the prob	nibited lakare" mu	ust be tr	iggered.		
Secondary errors	None.					
Dataset Name	AA500016	S-58 test N	0.	T1604	Туре	W
S-58 Description	Check that any COALNE object adjacent to a LND CATLND contains a value of (2) [flat coast] for the	-		of (15) [sa	It pan] for	
Test Case No.1	Captured LNDRGN (A) object with attribute CATL CATCOA.	ND, adjacent to (
Location	32°28'45.10"S 60°42'40.61"E	S57 Encoding	LNDRO		CATLND=	15
Screen Capture						
Expected test results	T1604: A warning "salt pan without catcoa: 2" m	ust be triggered.				
Secondary errors	None.					
Dataset Name	AA500016	S-58 test N	0.	T1606	Туре	W
S-58 Description	Check that any COALNE object adjacent to an ICE contains a value of (6) [glacier (seaward end)] for	·-		of (5) [glac	ier] for CA	TICE
Test Case No.1	Captured ICEARE (A) object with attribute CATIC	E, adjacent to CO	ALNE wi	thout attr	ibute CATC	OA.
Location	32°28'35.43"S 60°42'43.50"E	S57 Encoding	ICEAR	E(A)	CATICE=5	;
			•		•	

		1	COALNE (L)		
Screen Capture					
Expected test results	T1606: A warning "glacier without catcoa: 6" mu	ist be triggered.			
Secondary errors	None.				
		1			
Dataset Name	AA500016	S-58 test N	o. T1608	Туре	E
S-58 Description	Check that no VEGATN object contains the attrib	outes VERACC and	VERDAT.		
Test Case No.1	Captured VEGATN (A, L & P) object with attribute	es VERACC and VE	RDAT.		
Location	32°28'30.06"S 60°42'45.07"E		VEGATN(P,L,A)	VERACC=	1
	32 26 30.00 3 00 42 43.07 E	S57 Encoding	(1.72)	VERDAT=	
Screen Capture				VERDAT=	
Expected test results	T1608: Three errors "prohibited attribute 'verace T1608: Three errors "prohibited attribute 'verda	c' in Vegetation" r	must be triggered.	VERDAT=	
·	T1608: Three errors "prohibited attribute 'verace	c' in Vegetation" r	must be triggered.	VERDAT=	
Expected test results Secondary errors	T1608: Three errors "prohibited attribute 'veract T1608: Three errors "prohibited attribute 'verda None.	c' in Vegetation" r	must be triggered. must be triggered.	VERDAT=	-1
Expected test results	T1608: Three errors "prohibited attribute 'verace T1608: Three errors "prohibited attribute 'verda None. AA500016	c' in Vegetation" r t' in Vegetation" r	must be triggered. must be triggered. o. T1609	VERDAT=	
Expected test results Secondary errors	T1608: Three errors "prohibited attribute 'veract T1608: Three errors "prohibited attribute 'verda None.	c' in Vegetation" r t' in Vegetation" r	must be triggered. must be triggered. o. T1609	VERDAT=	-1

Location	32°28'18.41"S 60°42'43.63"E	S57 Encoding	CANALS (A) SEAARE (A)	OBJNAM NOWN	=UNK
Screen Capture					
Expected test results	T1609: An error "seaare object overlaps the pro	hibited canals" m	ust be triggered.		
Secondary errors	None.				
Dataset Name	AA500016	S-58 test N	lo. T1610	Туре	Е
S-58 Description	Check that no RAILWY object contains the attrib	oute VERACC.			
Test Case No.1	Captured RAILWY object with attribute VERACC.	•			
Location	32°27'40.25"S 60°42'09.61"E	S57 Encoding	RAILWY (L)	VERACC=	:1
Screen Capture		•			
Expected test results	T1610: An error "prohibited attribute 'veracc' in	Railway" must be	e triggered.		
Secondary errors	None.				
Dataset Name	AA500016	S-58 test N	lo. T1611	Туре	Е
S-58 Description	Check that no TUNNELS object contains the attr	ibute BURDEP.			

Test Case No.1	Captured TUNNELS (L, A & P) objects with at	tribute BURDEP.		
Location	32°27'41.02"S 60°42'43.57"E	S57 Encoding	TUNNEL(L,A& P)	BURDEP=1
Screen Capture		→		
Expected test results	T1611: Three errors "prohibited attribute 'bu			
Secondary errors	T1797: A warning "the object tunnel cannot object created.	be displayed in ECDIS	" must be trigger	ed for the point
Dataset Name	AA500016	S-58 test N	o. T1613	Type E
S-58 Description	Check, for any TUNNEL object, which covers VERACC and VERCLR are not encoded.	a CANALS object, tha	t the attributes H	ORACC, HORCLR,
Test Case No.1	Captured TUNNEL (L&A) objects with attributovers CANALS (L&A).	tes HORACC, HORCLF	R, VERACC and VE	RCLR, which
Location	32°27'51.57"S 60°42'41.77"E	S57 Encoding	CANALS (L&A) TUNNEL (L&A)	HORCLR=1 HORACC=1 VERACC=1 VERCLR=1
Screen Capture				
Expected test results	T1613: Two errors "meaningless value of 'ho T1613: Two errors "meaningless value of 'ho T1613: Two errors "meaningless value of 've	rclr' in Tunnel" must	be triggered.	

	T1613: Two errors "meaningless value of 'verclr'	in Tunnel" must	be triggered.			
Secondary errors	None.					
Dataset Name	AA500016	S-58 test N	o. T1614	Туре	E	
S-58 Description	Check that no TUNNEL objects has any other non-hydrographic object (RAILWY, ROADWY etc) encoded within it.					
Test Case No.1	Captured TUNNEL (L & A) objects have a non-hy	drographic object	ROADWY (L & A)			
Location	32°28'03.57"S 60°42'19.06"E	S57 Encoding TUNNEL (A,L&P) ROADWY(L&A				
Screen Capture		-				
Expected test results	T1614: Four errors "tunnel with roadwy" must b	e triggered.				
Secondary errors	T1797: A warning "the object tunnel cannot be object created.	displayed in ECDIS	" must be trigger	ed for the p	ooint	
Dataset Name	AA500016	S-58 test N	o. T1616	Туре	Е	
S-58 Description	Check that no DAMCON object contains the attr	ibutes VERACC an	d VERDAT.			
Test Case No.1	Captured DAMCON (P, L, A) objects with attribute	tes VERACC and V	ERDAT.			
Location	32°28'09.87"S 60°42'55.19"E	S57 Encoding	DAMCON(L,A &P)	VERACC= VARDAT=		

Screen Capture						
Expected test results	T1616: Three errors "prohibited attribute 'verac T1616: Three errors "prohibited attribute 'verda					
Secondary errors	T1797: additional warning "DAMCON of type po display in ECDIS, are present in the dataset" must created.	int, with attribute	CATDAN	1 ≠ 3", wł		:
Dataset Name	AA500016	S-58 test N	lo.	T1618	Туре	E
S-58 Description	Check that no DYKCON object contains the attrib	outes VERDAT and	d VERACC.		7.	1
Test Case No.1	Captured DYKCON (L & A) objects with attribute	s VERDAT and VE				
Location	32°28'05.49"S 60°42'57.94"E	S57 Encoding	DYKCOI	N(L&A)	VERACC= VERDAT=	
Screen Capture						
Expected test results	T1618: Two errors "prohibited attribute 'veracc' T1618: Two errors "prohibited attribute 'verdat'					
Secondary errors	None.					
			,			
Dataset Name	AA500016	S-58 test N		T1620	Туре	E
S-58 Description	Check for any edge of a DYKCON object which is DEPARE, DRGARE or UNSARE object of type ar without a value for CATSLC.					

Test Case No.1	Captured DYKCON (A) object which is shared by that it is also not shared by a linear SLCONS object.		PARE (A), DRGAR	E and UNSARE,
Location	32°28'39.16"S 60°40'46.90"E	S57 Encoding	DRGARE (A) DYKCON (A) UNSARE (A)	DRVAL1=1
Screen Capture		-		
Expected test results	T1620: Three errors "open border of dykcon" m	ust be triggered.		
Secondary errors	None.			
Test Case No.2	Captured DYKCON (A) object which is shared by that it is also shared by a linear SLCONS object w		PARE (A), DRGAR	E and UNSARE,
Location	32°28'51.47"S 60°40'52.58"E	S57 Encoding	DYKCON (A) UNSARE (A) DRGARE(A) SLCONS (L)	DRVAL1=1 CTASLC=10 WATLEV=2
Screen Capture				
Expected test results	T1620: Three errors "open border of dykcon" m	ust be triggered.		
Secondary errors	None.			
Dataset Name	AA500016	S-58 test N	lo. T1623	Type E
S-58 Description	Check that if an object BRIDGE overlaps navigab value of (4) [bridge pylon/tower] or (5) [bridge pylon/tower]	• •		as PYLONS with a

Test Case No.1	Captured PYLONS (P, A) objects, which supports the bridge in a navigable water with attribute CATPYL.					
Location	32°29'15.69"S 60°41'04.90"E	S57 Encoding	BRIDGE (A) PYLONS(P&A)	CATBRG= VERCLR= OWN CATPYL= 3	UNKN	
Screen Capture		7				
Expected test results	T1623: 12 errors "wrong 'catpyl' for bridge supp	ort Pylon" must b	e triggered.			
Secondary errors	None.					
Dataset Name	AA500016	S-58 test N	o. T1626	Type	E	
S-58 Description	Check that no AIRARE object contains the attribu	ute CONVIS.				
Test Case No.1	Captured AIRARE (P, A) objects with attribute CC	NVIS.				
Location	32°29'11.95"S 60°42'33.72"E	S57 Encoding	AIRARE(P&A)	CONVIS=	:1	
Screen Capture		<u>-</u>				
Expected test results	T1626: Two errors "prohibited attribute 'convis'	in Airport area" n	nust be triggered			
Secondary errors	None.					
Dataset Name	AA500016	S-58 test N	o. T1627	Туре	E	

S-58 Description	Check that no RUNWAY object contains the attribute CONVIS.				
Test Case No.1	Captured RUNWAY (P, L, A) objects with attribu	te CONVIS.			
Location	32°29'18.96"S 60°42'37.14"E	S57 Encoding	RUNWAY(P, L & A)	CONVIS=1	
Screen Capture		□			
Expected test results	T1627: Three errors "prohibited attribute 'convis' in Runway" must be triggered.				
Secondary errors	T1797: A warning "the object runway cannot be object created.	T1797: A warning "the object runway cannot be displayed in ECDIS" must be triggered for the point object created.			

Test Dataset:AA500017

List of S58 Recommended ENC Validation Checks covered in this section:

S58 Test	Description
1628	Check that no PRDARE object contains the attributes VERDAT and VERACC.
1629	Check that no BUAARE object contains the attributes VERDAT and VERACC.
1630	Check that no RIVERS, LOKBSN, DOCARE, LAKARE or CANALS object of type Area overlaps a BUAARE object.
1631	Check that no BUISGL object contains the attributes VERDAT and VERACC.
1632	Check that no SILTNK object contains the attributes VERDAT and VERACC.
1633	Check that no LNDMRK object contains the attributes VERDAT and VERACC.
1634	Check that no FNCLNE object contains the attributes VERDAT and VERACC.
1635	Check that no FORSTC object contains the attributes VERDAT and VERACC.
1636	Check that no PYLONS object contains the attributes VERDAT and VERACC.
1638	Check that any picture files that form part of the ENC are in TIFF format.
1639	Check that no DEPCNT object contains the attribute VERDAT.
1640	Check that no SOUNDG object contains the attribute VERDAT.
1641	Check that no UWTROC object shares the same spatial position as a SOUNDG object.
1642	Check that no DEPARE object contains the attributes VERDAT and SOUACC.
1644	Check that the data set's outermost DEPARE objects of type Area are bounded by line spatial objects without associated geo objects.
1646	Check for any DRGARE object, if a value exists for the attribute DRVAL2, that it is different to the value for DRVAL1.
1647	Check that no DRGARE object contains the attribute VERDAT.
1650	Check that no SWPARE object contains the attribute VERDAT.
1653	Check that where a SWPARE falls within an M_QUAL object and the attribute SOUACC is encoded for M_QUAL the SOUACC value refers to the area inside the SWPARE as well as the soundings outside.
1654	Check for any SWPARE object, if the attribute TECSOU is encoded, that the value is (6) [swept by wire-drag], (8) [swept by vertical acoustic system] or (13) [swept by side-scan sonar].

Dataset Name	AA500017	S-58 test No.	T1628	Type E			
S-58 Description	Check that no PRDARE object contains the attributes VERDAT and VERACC.						
Test Case No. 1	PRDARE (A&P) captured with attribute	s VERDAT and VER	ACC.				
Location	32°29'28.91"S 60°42'36.35"E	S57 Encoding	PRDARE(A&P)	CATPRA=8 or 1 VERACC=3 VERDAT=3 HEIGHT=1.0			
Screen Capture	*						
Expected test results	T1628: Two errors "prohibited attribut T1628: Two errors "prohibited attribut						
Secondary errors	T1546: Two errors "Check that no object has an attribute value for VERACC without a corresponding attribute value for at least one of VERCLR, VERCOP, VERCSA or VERCCL" must be triggered related to the feature objects created. T547: Two errors "Object contains attributes outside of the list of permissible attributes for the object class" must be triggered related to the feature objects created.						
		T					
Dataset Name	AA500017	S-58 test No.	T1629	Type E			
S-58 Description	Check that no BUAARE object contains the attributes VERDAT and VERACC.						
Test Case No. 1	BUAARE (A &P) captured with attributes VERDAT and VERACC.						
Location	32°29'42.40"S 60°42'29.21"E	S57 Encoding	BUAARE(A &P)	VERACC=3 VERDAT=3 HEIGHT=1.0			

Screen Capture	•				
Expected test results	T1629: Two errors "prohibited attribut T1629: Two errors "prohibited attribut	te 'verdat' in Built-u	up area" must be triggere	ed.	
Secondary errors	T1546: Two errors "Check that no object corresponding attribute value for at le triggered related to the feature object T547: Two errors "Object contains attrobject class" must be triggered related	ast one of VERCLR, s created. ibutes outside of t	VERCOP, VERCSA or VER	CCL" mus	
	T=	T	I =	T _	T _
Dataset Name	AA500017	S-58 test No.	T1630	Type	E
S-58 Description	Check that no RIVERS, LOKBSN, DOCAF BUAARE object.	RE, LAKARE or CAN	ALS object of type Area o	verlaps a	
Test Case No. 1	RIVERS (A) captured on Built-up area LOKBSN (A) captured on Built-up area DOCARE (A) captured on Built-up area LAKARE (A) captured on Built-up area CANALS (A) captured on Built-up area				
Location	32°29'49.62"S 60°42'51.53"E	S57 Encoding	BUAARE(A) RIVERS(A) LOKBSN(A) DOCARE(A) LAKARE(A) CANALS(A)		

Screen Capture				
Expected test results	T1630: An error "object overlaps the prohibited rivers" must be triggered. T1630: An error "object overlaps the prohibited lokbsn" must be triggered. T1630: An error "object overlaps the prohibited docare" must be triggered. T1630: An error "object overlaps the prohibited lakare" must be triggered. T1630: An error "object overlaps the prohibited canals" must be triggered.			
Secondary errors	None.			
Dataset Name	AA500017	S-58 test No.	T1631	Type E
S-58 Description	Check that no BUISGL object contains t	l		Type L
Test Case No. 1	BUISGL (A &P) captured with attributes	s VERDAT and VERA	ACC.	
Location	32°29'56.73"S 60°42'51.39"E	S57 Encoding	BUISGL(P&A)	VERACC=3 VERDAT=3 HEIGHT=1.0
Screen Capture		•		
Expected test results	T1631: Two errors "prohibited attribut			
Secondary errors	T1631: Two errors "prohibited attribut T1546: Two errors "Check that no obje corresponding attribute value for at lea triggered related to the feature objects T547: Two errors "Object contains attr	ect has an attribute ast one of VERCLR, s created.	value for VERACO VERCOP, VERCSA	C without a or VERCCL" must be

	object class" must be triggered related	d to the feature obj	ects created.		
Dataset Name	AA500017	S-58 test No.	T1632	Туре	E
S-58 Description	Check that no SILTNK object contains	the attributes VERD	OAT and VERACC.		
Test Case No. 1	SILTNK (A&P) captured with attributes	VERDAT and VERA	CC.		
Location	32°30'06.75"S 60°42'50.07"E	S57 Encoding	SILTNK(P&A)	CATSIL=2 VERACC=3 VERDAT=3 HEIGHT=1.0	
Screen Capture		•			
Expected test results	T1632: Two errors "prohibited attribu" T1632: Two errors "prohibited attribu"			_	
Secondary errors	T1632: Two errors "prohibited attribute 'verdat' in Silo/tank" must be triggered. T1546: Two errors "Check that no object has an attribute value for VERACC without a corresponding attribute value for at least one of VERCLR, VERCOP, VERCSA or VERCCL" must be triggered related to the feature objects created. T547: Two errors "Object contains attributes outside of the list of permissible attributes for the object class" must be triggered related to the feature objects created.				
.	AA500047		T4 C22		T _
Dataset Name	AA500017	S-58 test No.	T1633	Туре	E
S-58 Description	Check that no LNDMRK object contain	s the attributes VE	RDAT and VERAC	C.	
Test Case No. 1	LNDMRK (A&P) captured with attribut	es VERDAT and VE	RACC.		
Location	32°30'18.20"S 60°42'45.79"E	S57 Encoding	LNDMRK(A&P)	CATLMK=9 or 1 CONVIS=2 VERACC=3 VERDAT=3 HEIGHT=1.0	7

Screen Capture		A			
Expected test results	T1633: Two errors "prohibited attributions of the state o				
Secondary errors	T1633: Two errors "prohibited attribute 'verdat' in Landmark" must be triggered. T1546: Two errors "Check that no object has an attribute value for VERACC without a corresponding attribute value for at least one of VERCLR, VERCOP, VERCSA or VERCCL" must be triggered related to the feature objects created. T547: Two errors "Object contains attributes outside of the list of permissible attributes for the object class" must be triggered related to the feature objects created.				
5	A A E 0 0 0 4 7	6.50	T4.62.4		
Dataset Name	AA500017	S-58 test No.	T1634	Type E	
S-58 Description	Check that no FNCLNE object contain	is the attributes VER	DAT and VERACC		
Test Case No. 1	FNCLNE (L) captured with attributes	VERDAT and VERACO	<u> </u>		
Location	32°30'19.36"S 60°42'18.89"E	S57 Encoding	FNCLNE(L)	VERACC=3 VERDAT=3 HEIGHT=1.0	
Screen Capture					
Expected test results	T1634: An error "prohibited attribute				
Expected test results	T1634: An error "prohibited attribute				
Secondary errors	T1546: An error "Check that no object attribute value for at least one of VEF to the feature objects created.			-	

	T547: An error "Object contains attri object class" must be triggered relate		•	e attributes for t	he
		,			
Dataset Name	AA500017	S-58 test No.	T1635	Туре	E
S-58 Description	Check that no FORSTC object contain	s the attributes VER	DAT and VERACC	-	
Test Case No. 1	FORSTC (A&P) captured with attribut	es VERDAT and VER	ACC.		
Location	32°30'35.41"S 60°41'59.42"E	S57 Encoding	FORSTC(P&A)	CATFOR=1 VERACC=3 VERDAT=3 HEIGHT=1.0	
Screen Capture					
Expected test results	T1635: Two errors "prohibited attriber T1635: Two errors				
Secondary errors	T1546: Two errors "Check that no ob corresponding attribute value for at triggered related to the feature object T547: Two errors "Object contains at object class" must be triggered related	ject has an attribute east one of VERCLR, cts created. tributes outside of t	value for VERACO VERCOP, VERCSA he list of permiss	C without a A or VERCCL" mu	
	1	1 ::	T=		T_
Dataset Name	AA500017	S-58 test No.	T1636	Туре	E
S-58 Description	Check that no PYLONS object contain	s the attributes VER	DAT and VERACC		
Test Case No. 1	PYLONS (P, A) captured with attribut	es VERDAT and VERA	ACC.	_	
Location	32°30'56.29"S 60°42'02.96"E	S57 Encoding	PYLONS(P, A)	CATPYL=1 VERACC=3 VERDAT=3 HEIGHT=1.0	

Screen Capture	•				
Expected test results	T1636: Two errors "prohibited attrib	-			
Secondary errors	T1636: Two errors "prohibited attribute 'verdat' in Pylon/bridge support" must be triggered. T1546: Two errors "Check that no object has an attribute value for VERACC without a corresponding attribute value for at least one of VERCLR, VERCOP, VERCSA or VERCCL" must be triggered related to the feature objects created. T547: Two errors "Object contains attributes outside of the list of permissible attributes for the object class" must be triggered related to the feature objects created.				
Dataset Name	AA500017	S-58 test No.	T1638	Type E	
S-58 Description	Check that any picture files that form			1160 2	
Test Case No. 1	Land mark point captured.				
Location	32°31'09.56"S 60°42'07.20"E	S57 Encoding	LNDMRK(P)	PICREP=AA123456.TX	
Screen Capture	1				
Expected test results	T1638: An error "unexpected format of external file in 'picrep' landmark" must be triggered.				
Secondary errors	T0073: A warning "Check that no attaction and the attribute of type List contains any specific strength of the	ace" must be trigger s referenced by TXT	ed related to the	e feature objects created. d PICREP attributes exist	

	related to the feature objects created.				
Dataset Name	AA500017	S-58 test No.	T1639	Туре	E
S-58 Description	Check that no DEPCNT object contains the attribute VERDAT.				
Test Case No. 1	Depth contour line captured with attrib	oute VERDAT.			
Location	32°31'00.27"S 60°42'46.34"E	S57 Encoding	DEPCNT(L)	VALDCO=3.6 VERDAT=3	
Screen Capture					
Expected test results	T1639: An error "prohibited attribute '\				
Secondary errors	T1503: A warning "Check that no object least one of ELEVAT, HEIGHT, VERCCL, M_SDAT objects (subject to their own Coreated. T547: An error "Object contains attribut object class" must be triggered related	VERCLR, VERCOP o QA tests)" must be tes outside of the	r VERCSA. Except triggered related list of permissible	ions are M_VDA1 I to the feature o	and bjects
Dataset Name	AA500017	S-58 test No.	T1640	Туре	E
S-58 Description	Check that no SOUNDG object contains	the attribute VERI	DAT.		
Test Case No. 1	Sounding captured with attribute VERDAT.				
	Sounding captured with attribute vend	<u>/A1.</u>			

Screen Capture	14				
Expected test results	T1640: An error "prohibited attrib	oute 'verdat' in Sounding	" must be trigge	ered.	
Secondary errors	T1503: A warning "Check that no least one of ELEVAT, HEIGHT, VER M_SDAT objects (subject to their created. T547: An errors "Object contains object class" must be triggered re	RCCL, VERCLR, VERCOP or own QA tests)" must be attributes outside of the	VERCSA. Excep triggered relate list of permissib	tions are M_VDA ⁻ d to the feature o	Γ and bjects
Dataset Name	AA500017	S-58 test No.	T1641	Туре	E
S-58 Description	Check that no UWTROC object sh	ares the same spatial po	sition as a SOUN	IDG object.	
Test Case No. 1	Underwater rock and sounding po	pints captured using sam	e spatial node.		
Location	32°31'09.85"S 60°42'40.71"E	S57 Encoding	SOUNDG(P) UWTROC(P)	QUASOU=2 WATLEV=3 VALSOU=UNKN	IOWN
Screen Capture	10 ₆	11 ₅			
Screen Capture Expected test results	₩ 4		tion Underwate	r/awash rock" mu	ıst be

Dataset Name	AA500017	S-58 test No.	T1642	Т	уре	E
S-58 Description	Check that no DEPARE object contains	Check that no DEPARE object contains the attributes VERDAT and SOUACC.				
Test Case No. 1	Depth area captured with attributes VE	ERDAT and SOUAC	C.			
Location	32°30'26.25"S 60°43'16.18"E	S57 Encoding	DEPARE(A)	DRVAL1= DRVAL2= SOUACC= VERDAT=	9.1 =3	
Screen Capture	11 ₅		14			
Expected test results	T1642: An error "prohibited attribute 'T1642: An error "p	-		_		
Secondary errors	T1503: A warning "Check that no object least one of ELEVAT, HEIGHT, VERCCL," M_SDAT objects (subject to their own created. T547: An error "Object contains attribut object class" must be triggered related	VERCLR, VERCOP of QA tests)" must be utes outside of the	or VERCSA. Except e triggered related list of permissible	tions are M d to the fea	I_VDAT ature of	and ojects
		ı				
Dataset Name	AA500017	S-58 test No.	T1644	Т	ype	W
S-58 Description	Check that the data set's outermost DE objects without associated geo objects	•	pe Area are bour	nded by line	e spatia	nl
Test Case No. 1	Depth contour line extended along the	data limit border.				-
Location	32°29'24.55"S 60°42'57.47"E	S57 Encoding	DEPCNT (L)	VALDCO=	=5.4	

Screen Capture	3,			
Expected test results	T1644: A warning "depare is bounded I			
Secondary errors	T0043: An error "Check that all DEPCN" except for cases where they appear with the feature objects created.			
Dataset Name	AA500017	S-58 test No.	T1646	Type W
S-58 Description	Check for any DRGARE object, if a value value for DRVAL1.	e exists for the attr	ibute DRVAL2, th	nat it is different to the
Test Case No. 1	Captured DRGARE object with attribute	es DRVAL1 and DR	VAL2.	
Location	32°31'09.12"S 60°40'54.00"E	S57 Encoding	DRGARE(A)	DRVAL1=4.5 DRVAL2=4.5
Screen Capture				
Expected test results	T1646: A warning "drval1 equal to drva	ıl2 Dredged area" ı	must be triggered	d.
Secondary errors	None.			
Dataset Name	AA500017	S-58 test No.	T1647	Type E
S-58 Description	Check that no DRGARE object contains	the attribute VERI	DAT.	

Location	32°30'54.96"S 60°40'54.79"E	S57 Encoding	DRGARE(A)	DRVAL1=3 VERDAT=3
Screen Capture		7		
Expected test results	T1647: An error "prohibited attribute	'verdat' in Dredged	area" must be tr	iggered.
Secondary errors	T1503: A warning "Check that no objet least one of ELEVAT, HEIGHT, VERCCL, M_SDAT objects (subject to their own created. T547: An error "Object contains attribed object class" must be triggered related.	VERCLR, VERCOP o QA tests)" must be utes outside of the	r VERCSA. Exceptiriggered related	tions are M_VDAT and d to the feature objects
	ı		T.	
Dataset Name	AA500017	S-58 test No.	T1650	Type E
S-58 Description	Check that no SWPARE object contain	s the attribute VERD	DAT.	
Test Case No. 1	Swept area captured with attribute VI	RDAT.		
Location	32°30'42.87"S 60°41'01.70"E	S57 Encoding	SWPARE(A)	DRVAL1=1 VERDAT=3
Screen Capture		7		
Expected test results	T1650: An error "prohibited attribute	'verdat' in Swept ar	ea" must be trigg	gered.
Secondary errors	T1503: A warning "Check that no objet least one of ELEVAT, HEIGHT, VERCCL,	ct has an attribute v	value for VERDAT	without a value for at

	M_SDAT objects (subject to their own created.	QA tests)" must be	triggered related	d to the feature o	bjects
	T547: An error "Object contains attrib object class" must be triggered related			e attributes for th	ie
Dataset Name	AA500017	S-58 test No.	T1653	Туре	E
S-58 Description	Check that where a SWPARE falls with for M_QUAL that the SOUACC value routside.				
Test Case No. 1	Swept area and Quality of data Area c	aptured with attrib	utes.		
Location	32°30'56.72"S 60°43'16.00"E	S57 Encoding	SWPARE(A) M_QUAL(A)	DRVAL1=2 SOUACC=1 CATZOC=2 DRVAL1=2 SOUACC=10	
			SOUNDG	SOUACC=1	
Screen Capture	12 ₄	4			
Expected test results	T1653: An error "Check that where a SOUACC is encoded for M_QUAL that well as the soundings outside" must b	the SOUACC value			
Secondary errors	T1530: An error "Check that no object attribute value for SOUACC that is equinomized M_QUAL object" must be triggered re T1531: An error "Check that no M_QUQUASOU or TECSOU which are equivalue of CATZOC" must be triggered re	livalent to the SOU, lated to the feature IAL object has attrik	ACC or CATZOC as objects created oute values for PC the accuracy indicates accuracy indic	ttributes for the . DSACC, SOUACC, cated by the attri	
Dataset Name	AA500017	S-58 test No.	T1654	Туре	Е
S-58 Description	Check for any SWPARE object, if the a wire-drag] (8) [swept by vertical acoust			e value is (6) [swe	1
Test Case No. 1	SWPARE(A) captured with attribute TE SWPARE(A) captured with attribute TE SWPARE(A) captured with attribute TE SWPARE(A) captured with attribute TE	ECSOU=2 ECSOU=3			

T .				
	SWPARE(A) captured with attribute TEC SWPARE(A) captured with attribute TEC			
	SWPARE(A) captured with attribute TE(
	SWPARE(A) captured with attribute TEG SWPARE(A) captured with attribute TEG			
	SWPARE(A) captured with attribute TE			
!	SWPARE(A) captured with attribute TE	CSOU=14		T =======
Location	32°30'03.73"S 60°41'04.53"E	S57 Encoding	SWPARE(A)	DRVAL1=1 TECSOU=1,2,3,4,5,7,9, 10,11,12 or 14
Screen Capture				
	T1654: 11 errors "meaningless value of			
Secondary errors	T2000: 11 warnings "Check for any SW the value is (6) [swept by wire-drag], (8 side-scan sonar]" must be triggered rel	s) [swept by vertical	acoustic system	n] or (13) [swept by
Test Case No. 2	SWPARE(A) captured with attribute TE(SWPARE(A) captured with attribute TE(SWPARE(A) captured with attribute TE(CSOU=8		
Location	32°30'13.30"S 60°41'03.49"E	S57 Encoding	SWPARE(A)	DRVAL1=1 TECSOU=6,8 or 13
Screen Capture				
Expected test results	T1654: Three errors "meaningless value	e of 'tecsou' in Swe	pt area" must no	ot be triggered.

Test Dataset:AA500018

List of S58 Recommended ENC Validation Checks covered in this section:

S58 Test	Description
1655	Check that no SWPARE object sharing the same geo-spatial position and geometry as a M_QUAL object contains the attribute POSACC if
1656	the SOUACC is encoded. Check that no UWTROC object contains the attribute VERDAT.
1658	Check that no WRECKS object contains the attributes VERDAT, VERACC and VERLEN.
1659	Check for any WRECKS object with VALSOU encoded with an explicit attribute value, if the value for EXPSOU is (1) [within the range of
1033	depth of the surrounding depth area] or if EXPSOU is not
	Used, that the value for VALSOU is greater than DRVAL1 and less than or equal to DRVAL2 of the overlying DEPARE or DRGARE object. Remark: This check must only be applied if both DRVAL1 and DRVAL2 for the overlying Group 1 object are encoded with explicit and different attribute values.
1660	Check for any WRECKS object with VALSOU encoded with an explicit attribute value, if the value for EXPSOU is (2) [shoaler than the range of depth of the surrounding depth area], that the value for VALSOU is less than or equal to DRVAL1 of the overlying DEPARE or DRGARE object.
	Remark: This check must only be applied if DRVAL1 for the overlying Group 1 object is not encoded as "unknown".
1661	Check for any WRECKS object with VALSOU encoded with an explicit attribute value, if the value for EXPSOU is (3) [deeper than the range of depth of the surrounding depth area], that the value for VALSOU is: • greater than DRVAL2 of the overlying DEPARE, or
	greater than DRVAL2 of the overlying DRGARE, when both DRVAL1 and DRVAL2 of the DRGARE are encoded, or
	Greater than DRVAL1 of the overlying DRGARE, when only DRVAL1 of the DRGARE is encoded. This is a second of the overlying DRGARE, when only DRVAL1 of the DRGARE is encoded.
	Remark: This check must only be applied if DRVAL2 for the overlying DEPARE object or DRVAL1 for the overlying DRGARE object are not encoded as "unknown".
1664	Check that no OBSTRN object contains the attribute VERACC or VERDAT.
1665	Check for any OBSTRN object with VALSOU encoded with an explicit attribute value, if the value for EXPSOU is (1) [within the range of depth of the surrounding depth area] or if EXPSOU is not used, that the value for VALSOU is greater than DRVAL1 and less than or equal to DRVAL2 of the overlying DEPARE or DRGARE object.
	Remark: This check must only be applied if both DRVAL1 and DRVAL2 for the overlying Group 1 object are encoded with explicit and different attribute values.
1666	Check for any OBSTRN object with VALSOU encoded with an explicit attribute value, if the value for EXPSOU is (2) [shoaler than the range of depth of the surrounding depth area], that the value for VALSOU is less than or equal to DRVAL1 of the overlying DEPARE or DRGARE object.
	Remark: This check must only be applied if DRVAL1 for the overlying Group 1 object is not encoded as "unknown".
1667	Check for any OBSTRN object with VALSOU encoded with an explicit attribute value, if the value for EXPSOU is (3) [deeper than the range of depth of the surrounding depth area], that the value for VALSOU is: • greater than DRVAL2 of the overlying DEPARE, or
	 greater than DRVAL2 of the overlying DRGARE, when both DRVAL1 and DRVAL2 for the DRGARE are encoded, or
	Greater than DRVAL1 of the overlying DRGARE, when only DRVAL1 for the DRGARE is encoded.
	Remark: This check must only be applied if DRVAL2 for the overlying DEPARE object or DRVAL1 for the overlying DRGARE object are not encoded as "unknown".
1668	Check that no OBSTRN object has a value for the attribute PRODCT without a value of (2) [wellhead] or (3) [diffuser] for CATOBS.
1675	Check that no SNDWAV object contains the attribute VERACC.
1677	Check that no MORFAC object has a value for the attribute BOYSHP unless the object contains a value of (7) [mooring buoy] for the attribute CATMOR.
1678	Check that no RECTRC object contains the attributes VERDAT and DRVAL2.
1689	Check that no TSSCRS object overlaps a TSEZNE object.
1690	Check that no TSSRON object overlaps a TSEZNE object.
1691	Check that no DWRTPT object contains the attributes VERDAT and DRVAL2.
1695	Check that no DWRTCL object contains the attributes VERDAT and DRVAL2.
1697	Check that no RCRTCL object contains the attributes VERDAT and DRVAL2.

Dataset Name	AA500018	S-58 test No	. T1655	Туре	E
S-58 Description	Check that no SWPARE object sharing the same gobject contains the attribute POSACC if the SOU		on and geomet	ry as a M_	QUAL
Test Case No. 1	Captured SWPARE object sharing the same geom and SOUACC.	netry of M_QUAL	object with att	ributes PO	SACC
Location	32°30'36.02"S 60°45'57.44"E	S57 Encoding	SWPARE (A) M_QUAL(A)	DRVAL1: POSACC: SOUACC	=1
Screen Capture	swept to 18.2				
Expected test results	T1655: Two errors "prohibited attribute 'posacc'	in Quality of data	a" must be trigg	gered.	
Secondary errors	T1525: One additional error "Check that no M_C DRVAL1 contains a value for POSACC" must be to				ted.
	T			T_	T _
Dataset Name	AA500018	S-58 test No	T1656	Туре	E
S-58 Description	Check that no UWTROC object contains the attri	bute VERDAT.			
Test Case No. 1	Captured UWTROC object with attribute VERDAT	Г.			
Location	32°30'53.69"S 60°44'40.05"E	S57 Encoding	UWTROC(P)	VERDAT:	=1
Screen Capture	24				

Expected test results	T1656: An error "prohibited attribute 'verdat' i	n Underwater/aw	ash rock" must	be triggered.
Secondary errors	T1503: One additional warning "Check that no value for at least one of ELEVAT, HEIGHT, VERC M_VDAT and M_SDAT objects (subject to their feature objects created. T547: An error "Object contains attributes outs object class" must be triggered related to the form	CL, VERCLR, VERC own QA tests)" m	OP or VERCSA. I ust be triggered ermissible attril	Exceptions are d related to the
	1170010		74650	T _ T_
Dataset Name	AA500018	S-58 test No	T 1658	Type E
S-58 Description	Check that no WRECKS object contains the attr	ibutes VERDAT, VI	ERACC and VERI	LEN.
Test Case No. 1	Captured WRECKS (P, A) objects with attributes	s VERDAT, VERACO	and VERLEN.	
Location	32°30'58.48"S 60°44'49.88"E	S57 Encoding	WRECKS (P&A)	VERDAT=1 VERACC=1 VERLEN=1
Screen Capture	*	8,5		
Expected test results	T1658: Two errors "prohibited attribute 'verace T1658: Two errors "prohibited attribute 'verler T1658: Two errors "prohibited attribute 'verda	n' in Wreck" must	be triggered.	
Secondary errors	T1546: Two additional errors "Check that no observed corresponding attribute value for at least one of triggered related to the feature objects created to the feature objects created object class" must be triggered related to the feature object class.	of VERCLR, VERCO	P, VERCSA or VE f permissible at	RCCL" must be
			1	T
Dataset Name	AA500018	S-58 test No		Type E
S-58 Description	Check for any WRECKS object with VALSOU end for EXPSOU is (1) [within the range of depth of used, that the value for VALSOU is greater than overlying DEPARE or DRGARE object. Remark: This check must only be applied if both object are encoded with explicit and different and differe	the surrounding done of the surrounding done of the second terms of the surrounding done of the surrou	epth area] or if than or equal to	EXPSOU is not o DRVAL2 of the
Test Case No. 1	Captured WRECKS (P, A) objects with attributes WRECKS less than DRVAL1 and greater than DR	s VALSOU and EXP		

Location	32°30'57.39"S 60°45'05.14"E	S57 Encoding	WRECKS(A,P) DRGARE(A) DEPARE(A)	EXPSOU=1 VALSOU=15 & 55 DRVAL1=20 DRVAL2=40 DRVAL1=18.2 DRVAL2=54.8
Screen Capture	15 (55) 15 (55) (15) (15) (15)	55		
Expected test results	T1659: Eight errors "spot sounding shallower that triggered.			
Secondary errors	T1662: One additional error "Check that any are DEPARE, LNDARE or UNSARE object of type Area created.		-	•
Test Case No. 2	Captured WRECKS (P, A) objects with attribute V DRVAL1 and greater than DRVAL2 of the overlying	_		RECKS less than
Location	32°31'01.09"S 60°45'05.65"E	S57 Encoding	WRECKS(A,P) DRGARE(A) DEPARE(A)	VALSOU=15 & 55 DRVAL1=20 DRVAL2=40 DRVAL1=18.2 DRVAL2=54.8
Screen Capture	15 15 55 1 1 1 1 1 1 1	65 /		
Expected test results	T1659: Eight errors "spot sounding shallower that triggered.	an enclosing 'dep	are' of Wreck" r	nust be
Secondary errors	T1662: One additional error "Check that any are DEPARE, LNDARE or UNSARE object of type Area created.			

Dataset Name	AA500018	S-58 test No	. T1660	Туре	E	
S-58 Description	Check for any WRECKS object with VALSOU encoded with an explicit attribute value, if the value for EXPSOU is (2) [shoaler than the range of depth of the surrounding depth area], that the value for VALSOU is less than or equal to DRVAL1 of the overlying DEPARE or DRGARE object. Remark: This check must only be applied if DRVAL1 for the overlying Group 1 object is not encoded as "unknown".					
Test Case No. 1	Captured WRECKS (P, A) objects with attributes than DRVAL1 of the overlying DEPARE (A) and DF		OU. Assigned V	/ALSOU gre	eater	
Location	32°30'52.31"S 60°45'07.62"E	S57 Encoding	DRGARE(A) WRECKS(A,P) DEPARE(A)	DRVAL1= EXPSOU= VALSOU= DRVAL1= DRVAL2=	=2 =25 =18.2	
Screen Capture		28				
Expected test results	T1660: Four errors "bad sounding exposition in \	Wreck" must be tr	iggered.			
Secondary errors	T1662: One additional error "Check that any area DEPARE, LNDARE or UNSARE object of type Area created.		•		,	
Dataset Name	AA500018	S-58 test No	. T1661	Туре	E	
S-58 Description	Check for any WRECKS object with VALSOU encored for EXPSOU is (3) [deeper than the range of dept for VALSOU is: • greater than DRVAL2 of the overlying D preater than DRVAL2 of the overlying D DRGARE are encoded, or • Greater than DRVAL1 of the overlying D encoded. Remark: This check must only be applied if DRVA for the overlying DRGARE object are not encoded.	ded with an expli h of the surround EPARE, or RGARE, when bot RGARE, when onl	cit attribute val ling depth area h DRVAL1 and l	lue, if the v], that the DRVAL2 of e DRGARE	value value the	
Test Case No. 1	 Captured WRECKS (P, A) objects with attribute V Assigned VALSOU for WRECKS less than DRGARE objects, when both DRVAL1 and DRGARE. Assigned VALSOU for WRECKS less than only DRVAL1 attribute is encoded for DI 	ALSOU and EXPSO DRVAL2 of the ord d DRVAL2 attribu DRVAL1 of the or	verlying the DEI te are encoded	for DEPAR	RE (A)	

Location	32°30'38.89"S 60°45'16.73"E	S57 Encoding	WRECKS(P&A) DRGARE(A) DEPARE(A)	EXPSOU=3 VALSOU=25 or 19 DRVAL1=20 DRVAL2=40 DRVAL1=18.2 DRVAL2=54.8
Screen Capture	25	9		
Expected test results	T1661: 6 errors "bad sounding exposition in Wr	eck" must be trigg	gered.	
Secondary errors	T1662: Two additional errors "Check that any and DEPARE, LNDARE or UNSARE object of type Arecreated.		-	•
Dataset Name	AAF00019	S-58 test No	D. T1664	Type E
Dataset Name	AA500018	5-58 test NO	11004	Type E
S-58 Description	Check that no OBSTRN object contains the attri	oute VERACC or V	ERDAT.	
Test Case No. 1	Captured OBSTRN (P, L, A) objects with attribute	es VERACC and VE		1
Location	32°31'11.72"S 60°43'39.19"E	S57 Encoding	OBSTRN(P,L &A)	VERACC=1
1			Q/ I/	VERDAT=1
Screen Capture			a.y	VERDAT=1
Screen Capture Expected test results	T1664: Three errors "prohibited attribute 'verac T1664: Three errors "prohibited attribute 'verda attribute		' must be trigge	red.

	corresponding attribute value for at least one of triggered related to the feature objects created.	·	P, VERCSA or VE	RCCL" mus	st be
	T547: Three errors "Object contains attributes o object class" must be triggered related to the fe		•	ttributes fo	or the
		I			T
Dataset Name	AA500018	S-58 test No		Туре	E
S-58 Description	Check for any OBSTRN object with VALSOU enco for EXPSOU is (1) [within the range of depth of t used, that the value for VALSOU is greater than overlying DEPARE or DRGARE object. Remark: This check must only be applied if both object are encoded with explicit and different at	he surrounding done of the sur	epth area] or if I than or equal to	EXPSOU is DRVAL2 o	not of the
Test Case No. 1	Captured OBSTRN (P, L, A) objects with attribute OBSTRN less than DRVAL1 and greater than DRV		_		
			OBSTRN(A,P,	EXPSOU= VALSOU= 55	=15 &
Location	32°31'11.05"S 60°44'52.32"E	S57 Encoding	DRGARE(A) DEPARE(A)	DRVAL1= DRVAL2= DRVAL1= DRVAL2=	=40 =18.2
Screen Capture	15 15 55 55 21	55			
Expected test results	T1665: 12 errors "spot sounding shallower than triggered				
Secondary errors	T1662: One additional error "Check that any are DEPARE, LNDARE or UNSARE object of type Area created.		-		•
Test Case No. 2	Captured OBSTRN (P, L, A) objects with attribute DRVAL1 and greater than DRVAL2 of the overlying	_		DBSTRN les	ss than
Location	32°31'14.75"S 60°44'50.31"E	S57 Encoding	OBSTRN(P,A &L) DRGARE(A) DEPARE(A)	VALSOU= 55 DRVAL1= DRVAL2= DRVAL1= DRVAL2=	=20 =40 =18.2

Screen Capture	15 (15) 5 15 (15)	5 55 1 55		
Expected test results	T1665: 12 errors "spot sounding shallower the triggered			
Secondary errors	T1662: One additional error "Check that any DEPARE, LNDARE or UNSARE object of type of created.		-	•
Dataset Name	AA500018	S-58 test N	o. T1666	Type E
S-58 Description	Check for any OBSTRN object with VALSOU of for EXPSOU is (2) [shoaler than the range of for VALSOU is less than or equal to DRVAL1 of Remark: This check must only be applied if E encoded as "unknown".	depth of the surrou of the overlying DEP RVAL1 for the overl	nding depth area ARE or DRGARE ying Group 1 obj	a], that the value object. ject is not
Test Case No. 1	Captured OBSTRN (P, L, A) objects with attrib than DRVAL1 of the overlying DEPARE (A) an			
Location	32°30'45.90"S 60°45'13.04"E	S57 Encoding	OBSTRN(A,L &P) DRGARE(A) DEPARE(A)	VALSOU=25 EXPSOU=2 DRVAL1=20 DRVAL1=18.2 DRVAL2=54.8
Screen Capture	25	5		
Expected test results	T1666: 6 errors "bad sounding exposition in			
Secondary errors	T1662: One additional error "Check that any DEPARE, LNDARE or UNSARE object of type of created.			

Dataset Name	AA500018	S-58 test No	T1667	Type E		
S-58 Description	Check for any OBSTRN object with VALSOU enco for EXPSOU is (3) [deeper than the range of dept for VALSOU is: • greater than DRVAL2 of the overlying Diversity of the overlying DROMARE object are not encoded.	h of the surround EPARE, or RGARE, when bo RGARE, when on AL2 for the overly	ding depth area th DRVAL1 and], that the value DRVAL2 for the he DRGARE is		
Test Case No. 1	 Captured OBSTRN (P, L, A) objects with attribute Assigned VALSOU for OBSTRN less than DRGARE objects, when both DRVAL1 an and DRGARE. 	 Assigned VALSOU for OBSTRN less than DRVAL2 of the overlying the DEPARE (A) and DRGARE objects, when both DRVAL1 and DRVAL2 attributes are encoded for DEPARE (A) and DRGARE. Assigned VALSOU for OBSTRN less than DRVAL1 of the overlying DRGARE object, when 				
Location	32°30'31.87"S 60°45'22.98"E	S57 Encoding	DRGARE(A) OBSTRN(P,L &A) DEPARE	DRVAL1=20 DRVAL2=40 VALSOU=25, 19 EXPSOU=3 DRVAL1=18.2 DRVAL2=54.8		
Screen Capture	26 26 19 19 20 ₇ 25 25 19					
Expected test results	T1667: Nine errors "bad sounding exposition in C	Dbstruction" mus	st be triggered.			
Secondary errors	T1662: Two additional errors "Check that any are DEPARE, LNDARE or UNSARE object of type Area created.		•	•		
Dataset Name	AA500018	S-58 test No	T1668	Type W		
S-58 Description	Check that no OBSTRN object has a value for the [wellhead] or (3) [diffuser] for CATOBS.	attribute PRODO	CT without a val	ue of (2)		
Test Case No. 1	Captured OBSTRN (P, L, A) objects with attribute	s CATOBS and PR	RODCT.			
Location	32°31'00.78"S 60°43'40.35"E	S57 Encoding	OBSTRN (P,L&A)	PRODCT=1 CATOBS=1,4,5,		

			6,7,8,9 or 10
Screen Capture		17 ₈	
Expected test results	T1668: 24 warnings "meaningless value of 'prodo	ct' in obstruction" mu	st be triggered
Secondary errors	None		
			1 1
Dataset Name	AA500018	S-58 test No.	T1675 Type E
S-58 Description	Check that no SNDWAV object contains the attri	oute VERACC.	
Test Case No. 1	Captured SNDWAV (P, L, A) objects with attribute	e VERACC.	
Location	32°30'44.77"S 60°43'40.00"E	S57 Encoding SN &A	DWAV(P,L VERACC=1
Screen Capture	~~		
Expected test results	T1675: Three errors "prohibited attribute 'veraco		
Secondary errors	T1546: Three additional errors "Check that no obsorresponding attribute value for at least one of triggered related to the feature objects created. T547: Three errors "Object contains attributes of object class" must be triggered related to the feature.	VERCLR, VERCOP, VE	RCSA or VERCCL" must be ermissible attributes for the
Dataset Name	AA500018	S-58 test No.	T1677 Type E

S-58 Description	Check that no MORFAC object has a value for th value of (7) [mooring buoy] for the attribute CA		SHP unless the ol	oject contains a	
Test Case No. 1	Captured MORFAC (P, L, A) objects with attributes BOYSHP and CATMOR.				
Location	32°30'51.57"S 60°43'45.69"E			BOYSHP=7 CATMOR=1,2,3 ,4,5 or 6	
Screen Capture		•			
Expected test results	T1677: 18 errors "meaningless value of 'boyshp'	' in Mooring/war	ping facility" mu	st be triggered.	
Secondary errors	None				
Dataset Name	AA500018	S-58 test N	o. T1678	Type E	
S-58 Description	Check that no RECTRC object contains the attrib	utes VERDAT an	d DRVAL2.		
Test Case No. 1	Captured RECTRC (L, A) objects with attributes \	/ERDAT and DRV			
Location	32°31'09.22"S 60°44'58.87"E	S57 Encoding	RECTRC(A&L)	VERDAT=1 DRVAL2=25	
Screen Capture	19 ₅	34			
Expected test results	T1678: Two errors "prohibited attribute 'verdat' T1678: Two errors "prohibited attribute 'drval2'				
Secondary errors	T1503: Two additional warnings "Check that no a value for at least one of ELEVAT, HEIGHT, VERO	-			

Dataset Name S-58 Description	M_VDAT and M_SDAT objects (subject to their of feature objects created. T547: Two errors "Object contains attributes out object class" must be triggered related to the feature object class" be triggered related to the feature object overlaps a TSEZNE object overlaps a T	tside of the list of ature objects crea S-58 test No	f permissible att		
Test Case No. 1	Captured TSSCRS object overlapping with TSEZN				
Location	32°31'08.01"S 60°45'30.79"E	S57 Encoding	TSSCRS (A) TSEZNE (A)		
Screen Capture	36				
Expected test results	T1689: An error "tsscrs object overlaps the proh	ibited 'tsezne'" n	nust be triggere	d.	
Secondary errors	None				
Dataset Name	AA500018	S-58 test No	T 1690	Туре	E
S-58 Description	Check that no TSSRON object overlaps a TSEZNE	object.	1		L
Test Case No. 1	Captured TSSRON (A) object overlapping with TS	SEZNE (A) object.			
Location	32°30'45.03"S 60°45'55.25"E	S57 Encoding	TSSRON (A) TSEZNE (A)		

Screen Capture	31	4			
Expected test results	T1690: An error "tssron object overlaps the proh	nibited 'tsezne'" r	nust be triggere	d.	
Secondary errors	T1687: One additional warning "Check that any of following: 1) Two traffic lanes, 2) Traffic lane and must be triggered related to the feature objects	l Inshore traffic z			
	1			T_	_
Dataset Name	AA500018	S-58 test No	T1691	Туре	E
S-58 Description	Check that no DWRTPT object contains the attrib	outes VERDAT an	d DRVAL2.		
Test Case No. 1	Captured DWRTPT (A) object with attributes VER	RDAT and DRVAL	2.	•	
Location	32°30'23.94"S 60°46'20.78"E	S57 Encoding	DWRTPT (A)	VERDAT= DRVAL2=	
Screen Capture	DW DW	DW C			
Expected test results	T1691: An error "prohibited attribute 'verdat' in				
Secondary errors	T1691: An error "prohibited attribute 'drval2' in T1503: One additional warning "Check that no o value for at least one of ELEVAT, HEIGHT, VERCC M_VDAT and M_SDAT objects (subject to their of feature objects created. T547: An error "Object contains attributes outside object class" must be triggered related to the feature.	bject has an attri L, VERCLR, VERCO wn QA tests)" m de of the list of po	bute value for N DP or VERCSA. E ust be triggered ermissible attrib	'ERDAT with exceptions a related to	are the

Dataset Name	AA500018	S-58 test No	T1695	Туре	E		
S-58 Description	Check that no DWRTCL object contains the attributes VERDAT and DRVAL2.						
Test Case No. 1	Captured DWRTCL object with attributes VERDA	T and DRVAL2.					
Location	32°30'45.86"S 60°45'25.18"E	S57 Encoding	DWRTCL (L)	VERDAT= DRVAL2=			
Screen Capture	058 deg DN L 7 DN	7 DW					
Expected test results	T1695: An error "prohibited attribute 'drval2' in T1695: An error "prohibited attribute 'verdat' in	-					
Secondary errors	T1503: One additional warning "Check that no o value for at least one of ELEVAT, HEIGHT, VERCO M_VDAT and M_SDAT objects (subject to their of feature objects created. T547: An error "Object contains attributes outside object class" must be triggered related to the feature.	L, VERCLR, VERCO own QA tests)" m de of the list of po	OP or VERCSA. I ust be triggered ermissible attril	Exceptions and related to	are the		
		T			I		
Dataset Name	AA500018	S-58 test No	T1697	Туре	E		
S-58 Description	Check that no RCRTCL object contains the attribu	utes VERDAT and	DRVAL2.				
Test Case No. 1	Captured RCRTCL object with attributes VERDAT	and DRVAL2.					
Location	32°31'07.52"S 60°45'48.69"E	S57 Encoding	RCRTCL (L)	VERDAT= DRVAL2=	_		

Screen Capture	⟨
Expected test results	T1697: An error "prohibited attribute 'verdat' in Recommended route centerline" must be triggered. T1697: An error "prohibited attribute 'drval2' in Recommended route centerline" must be triggered.
Secondary errors	T1503: One additional warning "Check that no object has an attribute value for VERDAT without a value for at least one of ELEVAT, HEIGHT, VERCCL, VERCLR, VERCOP or VERCSA. Exceptions are M_VDAT and M_SDAT objects (subject to their own QA tests)" must be triggered related to the feature objects created. T547: An error "Object contains attributes outside of the list of permissible attributes for the object class" must be triggered related to the feature objects created.

Test Dataset:AA500019

List of S58 Recommended ENC Validation Checks covered in this section:

S58 Test	Description
1699	Check that no FAIRWY object contains the attribute VERDAT.
1700	Check that no TESARE object overlaps an EXEZNE object.
1701	Check that no CBLSUB object contains the attribute VERDAT.
1702	Check that no CBLSUB object that has a value of (4) [not in use] for the attribute STATUS has a value for the attribute CATCBL.
1703	Check for any CBLSUB object, if the attribute CATCBL is encoded, that the value is (1) [power line], (4) [telephone], (5) [telegraph] or (6) [mooring cable/chain].
1704	Check that no CBLOHD object contains an attribute value for VERDAT, without an attribute value for at least one of VERCLR or VERCSA.
1706	Check for any CBLOHD, CBLSUB, PIPSOL or PIPOHD object, if the attribute CONDTN is encoded, that the value is (1) [under construction] or (5) [planned construction].
1707	Check for any CBLARE object, if the attribute CATCBL is encoded, that the value is (1) [power line], (4) [telephone] or (5) [telegraph].
1708	Check that no PIPSOL object contains the attributes VERDAT and VERACC.
1709	Check that no PIPSOL object that has a value of (4) [not in use] for the attribute STATUS has a value for the attribute CATPIP.
1712	Check that no PIPOHD object that has a value of (4) [not in use] for the attribute STATUS has a value for the attributes CATPIP or PRODCT.
1713	Check that no PIPARE object contains the attribute CONDTN.
1715	Check that no OFSPLF object contains the attributes VERDAT and VERACC.
1716	Check that no OSPARE object contains the attribute VERACC.
1717	Check that no FSHFAC object contains the attribute VERACC.
1718	Check that no MARCUL object contains the attribute VERDAT.
1720	Check that no ICEARE object contains the attributes VERDAT and VERACC.
1723	Check that all point objects comprising a navigational aid are pointing to the same point spatial object.
1727	Check that no M_NSYS object with a value for MARSYS overlaps any other M_NSYS object that contains a value for MARSYS.
1728	Check that no M_NSYS object with a value for ORIENT overlaps any other M_NSYS object that contains a value for ORIENT.

Dataset Name	AA500019	S-58 test No.	T1699	Туре	Е
S-58 Description	Check that no FAIRWY object contains the attrib	ute VERDAT.			
Test Case No. 1	Captured FAIRWY (A) object with attribute VERD	OAT.			
Location	32°30'17.01"S 60°48'00.87"E	S57 Encoding	FAIRWY (A)	VERDAT=	:1
Screen Capture	4 4 ₈ 4 ₉ 4 ₈	4.			
Expected test results	T1699: An error "prohibited attribute 'verdat' in				
Secondary errors	T547: An error "Object contains attributes outside object class" must be triggered related to the feature object class" must be triggered related to the feature for at least one of ELEVAT, HEIGHT, VERCOM_VDAT and M_SDAT objects (subject to their of feature objects created.	ature objects crea has an attribute v	ted. value for VERD P or VERCSA. E	AT without	: a are
		Ī			T
Dataset Name	AA500019	S-58 test No.	T1700	Type	E
S-58 Description	Check that no TESARE object overlaps an EXEZNI	E object.			
Test Case No. 1	Captured TESARE (A) object overlapping with EX	EZNE (A) object.			
Location	32°29'44.73"S 60°48'15.84"E	S57 Encoding	TESARE (A) EXEZNE (A)		

Screen Capture	8 10 6- 57	6 ₄			
Expected test results	T1700: An error "Territorial sea area object over	laps the prohibited 'ex	ezne'" must	be trigge	ered.
Secondary errors	None.				
-	11500010			Ι_	l _
Dataset Name	AA500019	S-58 test No.	T1701	Type	Е
S-58 Description	Check that no CBLSUB object contains the attribu	ute VERDAT.			
Test Case No. 1	Captured CBLSUB (L) object with attribute VERDA	AT.	1		
Location	32°29'25.75"S 60°48'14.88"E	S57 Encoding CB	LSUB (L)	VERDAT=	1
Screen Capture	-~ 5~				
Expected test results	T1701: An error "prohibited attribute 'verdat' in	Cable, submarine" mu	ıst be trigge	red.	
Secondary errors	T547: An error "Object contains attributes outsice object class" must be triggered related to the feat T1503: additional warning "Check that no object value for at least one of ELEVAT, HEIGHT, VERCC M_VDAT and M_SDAT objects (subject to their of feature objects created.	has an attribute value L, VERCLR, VERCOP or	e for VERDA ⁻ VERCSA. Ex	Γ without ceptions a	a are
	1				

S-58 Description	Check that no CBLSUB object that has a value of (4) [not in use] for the attribute STATUS has a value for the attribute CATCBL.				
Test Case No. 1	Captured CBLSUB (L) objects with attributes CAT	CBL and STATUS.			
Location	32°29'35.60"S 60°48'12.99"E	S57 Encoding	CBLSUB (L)	CATCBL=1, ,6 STATUS=4	
Screen Capture	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\				
Expected test results	T1702: Five warnings "attribute conflict betweer be triggered	'status' and 'catc	bl' in Cable, su	bmarine" m	ust
Secondary errors	T1700: Four warnings "if the feature is a CBLSUB and the value of STATUS is 4 [disused], then it should not have the attribute CATCBL" must be triggered related to the objects created. T1703: A warning "Check for any CBLSUB object, if the attribute CATCBL is encoded, that the value is (1), (4), (5) or (6)" must be triggered related to the objects created. T2000: One error "CBLSUB should not have value 3 [transmission line] for CATCBL" must be triggered related to the feature objects created.				
Dataset Name	AA500019	S-58 test No.	T1703	Туре	E
S-58 Description	Check for any CBLSUB object, if the attribute CATCBL is encoded, that the value is (1) [power line], (4) [telephone], (5) [telegraph] or (6) [mooring cable/chain].				
Test Case No. 1	Captured CBLSUB (L) object with attribute CATCBL.				
Location	32°29'43.54"S 60°46'52.21"E	S57 Encoding	CBLSUB (L)	CATCBL=2,	,3

Screen Capture	6 ₄ 29 ₅	ر مرار سرار		
Expected test results	T1703: Two errors "meaningless value of 'catcbl'	in Cable, submar	ine" must be tr	iggered.
Secondary errors	T2000: Two errors "CBLSUB should not have valueriggered related to the feature objects created.			
Dataset Name	AA500019	S-58 test No.	T1704	Type E
S-58 Description	Check that no CBLOHD object contains an attributor at least one of VERCLR or VERCSA.	ite value for VERD	OAT, without ar	n attribute value
Test Case No. 1	Captured CBLOHD (L) objects with attribute VERI or VERCSA	DAT, with an attri	bute for at leas	t one of VERCLR
Location	32°30'32.37"S 60°47'47.98"E	S57 Encoding	CBLOHD (L)	VERCLR=UNKN OWN VERCSA=UNKN OWN VERDAT=1
Screen Capture	3 ₃ 2 ₇ 0 ₈			
Expected test results	T1704: Two errors "prohibited attribute 'verdat'	in Cable, overhea	d" must be trig	gered.
Secondary errors	None.			
Test Case No. 2	Captured CBLOHD (L) object with attribute VERD VERCSA.	AT, without an at	tribute value V	ERCLR and
	1 2 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2			

Screen Capture	0,				
Expected test results	T1704: An error "prohibited attribute 'verdat' in				
Secondary errors	T0507: Three errors "mandatory 'vercsa' and 've triggered related to the objects created. T1503: Three additional warnings "Check that no without a value for at least one of ELEVAT, HEIGI Exceptions are M_VDAT and M_SDAT objects (surelated to the feature objects created.	o object has an attribu HT, VERCCL, VERCLR, \	te value for /ERCOP or V	VERDAT 'ERCSA.	
Dataset Name	AA500019	S-58 test No.	T1706	Туре	Е
S-58 Description	Check for any CBLOHD, CBLSUB, PIPSOL or PIPOL that the value is (1) [under construction] or (5) [p	-		l is encod	ed,
Test Case No. 1	Captured CBLOHD (L) object with attribute CONI	OTN.			
Location	32°29'59.32"S 60°46'39.64"E	S57 Encoding CB	LOHD (L)	CONDTN=	=2,3,4
Screen Capture	15				
Expected test results	T1706: Three errors "meaningless value of 'cond				
Secondary errors	T1785: A warning "Check that only LNDMRK objet 19 [windmotor], have been encoded with CONDT the objects created. T2000: Three errors "CBLOHD should not have very street that the condition of t	ΓN = 4 [wingless]" mus	t be triggere	ed related	

	must be triggered related to the objects created.
Test Case No. 2	Captured CBLSUB (L) object with attribute CONDTN.
Location	32°29'40.62"S 60°46'30.09"E
Screen Capture	
Expected test results	T1706: Three errors "meaningless value of 'condtn' in Cable, submarine" must be triggered.
Secondary errors	T1785: A warning "Check that only LNDMRK objects having CATLMK = 18[windmill] or 19[windmotor], have been encoded with CONDTN = 4 [wingless]" must be triggered related to the feature objects created. T2000: Three errors "CBLSUB should not have value 2,3,4 [under reclamation] for CONDTN" must be triggered related to the feature objects created.
Test Case No. 3	Captured PIPSOL (P, L) object with attribute CONDTN.
Location	32°30'06.31"S 60°46'32.58"E
Screen Capture	134
Expected test results	T1706: 6 errors "meaningless value of 'condtn' in Pipeline, submarine/on land" must be triggered
Secondary errors	T1785: A warning "Check that only LNDMRK objects having CATLMK = 18[windmill] or 19[windmotor], have been encoded with CONDTN = 4 [wingless]" must be triggered related to the feature objects created. T1797: Three warnings "PIPSOL the object pipsol cannot be displayed in ECDIS" must be triggered related to the features objects created.

	T2000 : 6 Errors "PIPSOL should not have value 2,3,4 [under reclamation] for CONDTN" must be				
Test Case No. 4	triggered related to the feature objects created. Captured PIPOHD (L) object with attribute COND				
Location	32°30'34.04"S 60°48'10.24"E				
Screen Capture					
Expected test results	T1706: Three errors "meaningless value of 'cond	ltn' in Pipeline, ove	rhead" must l	oe triggere	d.
Secondary errors	T2000: Three errors "PIPOHD should not have va triggered related to the features objects created		for CONDTN	' must be	
					1
Dataset Name	AA500019	S-58 test No.	T1707	Type	E
S-58 Description	Check for any CBLARE object, if the attribute CA (4) [telephone] or (5) [telegraph].	TCBL is encoded, th	nat the value i	s (1) [powe	r line],
Test Case No. 1	Captured CBLARE (A) objects with attribute CAT	CBL.			
Location	32°29'33.14"S 60°49'01.88"E	S57 Encoding	CBLARE (A)	CATCBL=	2,3,6
Screen Capture					
Expected test results	T1707: Three errors "meaningless value of 'catch	ol' in Cable area" m	ust be trigger	ed.	
Secondary errors	T2000: Three errors "CBLARE should not have vamust be triggered related to the feature objects		n value 2,3,6]	for CATCBI	
		1			
Dataset Name	AA500019	S-58 test No.	T1708	Type	E

S-58 Description	Chack that no DIDSOL object contains the attribut	utos VEDDAT and V	/EDACC		
3-36 Description	Check that no PIPSOL object contains the attributes VERDAT and VERACC.				
Test Case No. 1	Captured PIPSOL (P, L) objects with attributes VE	RDAT and VERAC	С		
Location	32°29'45.06"S 60°48'21.85"E	S57 Encoding	PIPSOL (P,L)	VERDAT=1 VERACC=1	
Screen Capture					
Expected test results	T1708: Two errors "prohibited attribute 'veracc' T1708: Two errors "prohibited attribute 'verdat'				
Secondary errors	T1797: A warning "PIPSOL the object pipsol canning related to the features objects created. T547: Two errors "Object contains attributes out object class" must be triggered related to the features. T1503: Two additional warnings "Check that no a value for at least one of ELEVAT, HEIGHT, VEROM_VDAT and M_SDAT objects (subject to their of feature objects created.	tside of the list of ature objects crea object has an attri CCL, VERCLR, VERC	permissible at ted. bute value for COP or VERCSA	tributes for the VERDAT withou Exceptions are	ut e
Dataset Name	AA500019	S-58 test No.	T1709	Type W	1
S-58 Description	Check that no PIPSOL object that has a value of (value for the attribute CATPIP.	(4) [not in use] for	the attribute S	STATUS has a	
Test Case No. 1	Captured PIPSOL (P, L) object with attributes STA	ATUS and CATPIP.			
Location	32°29′30.60″S 60°48′14.84″E	S57 Encoding	PIPSOL (P,L)	CATPIP=4 STATUS=4	

Screen Capture	• — o — o — o				
Expected test results	T1709: Two warnings "attribute conflict betweer must be triggered.				
Secondary errors	T1797: A warning "PIPSOL the object pipsol cann related to the features objects created.	ot be displayed in	n ECDIS" must l	oe triggered	
	1		T = . = . =	T_ T	
Dataset Name	AA500019	S-58 test No.	T1712	Type W	
S-58 Description	Check that no PIPOHD object that has a value of value for the attributes CATPIP or PRODCT.	(4) [not in use] fo	r the attribute	STATUS has a	
Test Case No. 1	Captured PIPOHD (L) objects with attributes CAT	PIP and STATUS			
Location	32°30'38.34"S 60°48'14.79"E	S57 Encoding	PIPOHD (L)	CATPIP=4 STATUS=4	
Screen Capture					
Expected test results	T1712: A warning "attribute conflict between 'striggered.	atus' and 'catpip'	in Pipeline, ove	erhead" must be	
Secondary errors	None.				
Test Case No. 2	Captured PIPOHD (L) objects with attributes PRC	DCT and STATUS			
Location	32°30'29.72"S 60°48'06.96"E	S57 Encoding	PIPOHD (L)	PRODCT=3 STATUS=4	

Screen Capture					
Expected test results	T1712: A warning "attribute conflict between 'st triggered.	atus' and 'prodct' in P	ipeline, ove	erhead" m	ust be
Secondary errors	None.				
Dataset Name	AA500019	S-58 test No.	T1713	Туре	E
S-58 Description	Check that no PIPARE object contains the attribu	ite CONDTN			
Test Case No. 1	Captured PIPARE (P, A) objects with attribute CO				
Location	32°29'50.26"S 60°46'44.51"E	\$57 Encoding	PARE ,A)	CONDTN:	=1
Screen Capture					
Expected test results	T1713: Two errors "prohibited attribute 'condtn'				
Secondary errors	T547: Two errors "Object contains attributes out object class" must be triggered related to the feature.	•		ributes for	the
Dataset Name	AA500019	S-58 test No.	T1715	Туре	E
S-58 Description	Check that no OFSPLF object contains the attribu			. , , , ,	<u> - </u>
Test Case No. 1	Captured OFSPLF (P, A) objects with attributes V	ERDAT and VERACC			

Location	32°30'08.68"S 60°46'32.41"E	S57 Encoding	OFSPLF (P,A)	VERDAT=	
Screen Capture		•		VEIGLE	•
Expected test results	T1715: Two errors "prohibited attribute 'veracc' T1715: Two errors "prohibited attribute 'verdat'	in Offshore platfo	rm" must be t	riggered.	41
Secondary errors	T547: Two errors "Object contains attributes ou object class" must be triggered related to the fe			tributes for	tne
Dataset Name	AA500019	S-58 test No.	T1716	Туре	E
S-58 Description	Check that no OSPARE object contains the attrib	oute VERACC	1		
Test Case No. 1	Captured OSPARE (A) object with attribute VERA	ACC.			
Location	32°30'08.63"S 60°46'32.91"E	S57 Encoding	OSPARE (A)	VERACC=	1
Screen Capture	134				
Expected test results	T1716: An error "prohibited attribute 'veracc' in				
Secondary errors	T547: An error "Object contains attributes outside object class" must be triggered related to the fe	•		outes for th	е
					ı
Dataset Name	AA500019	S-58 test No.	T1717	Туре	E
S-58 Description	Check that no FSHFAC object contains the attrib	ute VERACC			

Test Case No. 1	Captured FSHFAC (P, L, A) object with attribute V	VERACC.		
Location	32°30'03.93"S 60°48'46.21"E	S57 Encoding	FSHFAC (P, L, A)	VERACC=1
Screen Capture		<u>`</u>		
Expected test results	T1717: Three errors "prohibited attribute 'verac	c' in Fishing facilit	y" must be trig	gered.
Secondary errors	T547: Three errors "Object contains attributes o object class" must be triggered related to the fe		•	ttributes for the
Dataset Name	AA500019	S-58 test No	. T1718	Type E
S-58 Description	Check that no MARCUL object contains the attri	l	. 11/10	.,,,,,
Test Case No. 1	Captured MARCUL (P, L, A) object with attribute	VERDAT.		
Location	32°30'07.78"S 60°48'36.11"E	S57 Encoding	MARCUL (P, L, A)	VERDAT=1
Screen Capture				
Expected test results	T1718: Three errors "prohibited attribute 'verda	t' in Marine farm,	/culture" must	be triggered.
Secondary errors	T547: Three errors "Object contains attributes of object class" must be triggered related to the few T1503: Three additional warnings "Check that no without a value for at least one of ELEVAT, HEIG Exceptions are M_VDAT and M_SDAT objects (so	ature objects crea o object has an at HT, VERCCL, VERC	ited. tribute value fo CLR, VERCOP or	or VERDAT VERCSA.

	related to the feature objects created.				
Dataset Name	AA500019	S-58 test No.	T1720	Туре	Е
S-58 Description	Check that no ICEARE object contains the attribu	tes VERDAT and V	ERACC.		
Test Case No. 1	Captured ICEARE (A) object with attributes VERD	AT and VERACC.			
Location	32°29'30.41"S 60°49'14.14"E	S57 Encoding	ICEARE (A)	VERDAT= VERACC=	
Screen Capture					
Expected test results	T1720: An error "prohibited attribute 'veracc' in T1720: An error "prohibited attribute 'verdat' in				
Secondary errors	T547: An error "Object contains attributes outsic object class" must be triggered related to the feat	•		outes for th	ie
Dataset Name	AA500019	S-58 test No.	T1723	Туре	Е
S-58 Description	Check that all point objects comprising a navigational aid are pointing to the same point spatial object.				
Test Case No. 1	Captured LNDMRK(P) and LIGHTS (P) objects and created master/slave relationship between these two objects, having the different point spatial object.				
Location	32°30'48.69"S 60°47'54.53"E	S57 Encoding	LNDMRK (P) LIGHTS (P)		

Screen Capture				
Expected test results	T1723: An error "master and its slave do not sha	re geometry" mus	st be triggered	
Secondary errors	T0516: A warning "If the master object is of type same node as the master object" must be trigge	•	-	_
Dataset Name	AA500019	S-58 test No.	T1727	Type E
S-58 Description	Check that no M_NSYS object with a value for M contains a value for MARSYS.	1	L	71
Test Case No. 1	Captured M_NSYS (A) object overlapping with o	ther M_NSYS obje	ct.	
Location	32°31'05.86"S 60°46'55.12"E	S57 Encoding	M_NSYS (A)	MARSYS=1,2
Screen Capture				
Expected test results	T1727: Two errors "M_NSYS is overlapped by pr	evious M_NSYS" n	nust be trigger	ed.
Secondary errors	T1726: An error "edge is open border of 'm_nsys	s' coverage"		
				,
Dataset Name	AA500019	S-58 test No.	T1728	Type E
S-58 Description	Check that no M_NSYS object with a value for O contains a value for ORIENT.			
Test Case No. 1	Captured M_NSYS (A) object with attribute ORIE contains a value with ORIENT.	NT overlapping w	ith other M_N	SYS object that
Location	32°31'05.86"S 60°46'55.12"E	S57 Encoding	M_NSYS	MARSYS=1,2

			(A)	ORIENT=60
Screen Capture				
Expected test results	T1728:Two errors "object with ORIENT is overla	pped by next M_N	SYS" must be t	riggered.
Secondary errors	None.			

Test Dataset:AA500020

List of S58 Recommended ENC Validation Checks covered in this section:

S58 Test	Description
1730	Check that no BCNCAR object contains the attributes VERDAT and VERACC.
1731	Check that no BCNISD object contains the attributes VERDAT and VERACC.
1733	Check that no BCNSAW object contains the attributes VERDAT and VERACC.
1734	Check that no BCNSPP object contains the attributes VERDAT and VERACC.
1735	Check that no Beacon object contains a value for the attribute MARSYS that is identical to the value for MARSYS within the object M_NSYS that covers the Beacon object.
1736	Check that no DAYMAR object contains the attributes VERDAT and VERACC.
1737	Check that no BOYCAR object contains the attribute VERACC.
1738	Check that no BOYINB object contains the attribute VERACC.
1739	Check that no BOYISD object contains the attribute VERACC.
1740	Check that no BOYLAT object contains the attribute VERACC.
1741	Check that no BOYSPP object contains the attribute VERACC.
1742	Check that no BOYSAW object contains the attribute VERACC.
1743	Check that no Buoy object contains a value for the attribute MARSYS that is identical to the value for MARSYS within the object M_NSYS that covers the Buoy object.
1744	Check that no LITVES object contains the attributes HORACC and VERACC.
1745	Check that no LITFLT object contains the attributes HORACC and VERACC.
1746	Check that no TOPMAR object contains the attributes VERACC, VERDAT, VERLEN, HEIGHT and MARSYS.
1747	Check that no RETRFL object contains the attributes VERACC and MARSYS.
1748	Check that no RETRFL object contains the attribute VERDAT.
1749	Check that no LIGHTS object contains the attribute VERACC.
1750	Check that no LIGHTS object that is a slave to a buoy object, has a value for the attribute HEIGHT.

Dataset Name	AA500020	S-58 test No.	T1730	Type E		
S-58 Description	Check that no BCNCAR object contains	the attributes VER	DAT and VERACO	C.		
Test Case No. 1	BCNCAR object captured with attribute	es VERDAT and VER	RACC.			
Location	32°30'31.87"S 60°51'11.79"E	S57 Encoding	BCNCAR(P) VERDAT=3 VERACC=3 HEIGHT=1.0			
Screen Capture	1	12	2.8			
Expected test results	T1730: An error "prohibited attribute" T1730: An error "prohibited attribute"					
Secondary errors	T1730: An error "prohibited attribute 'veracc' in Beacon, cardinal" must be triggered. T547: An error "Object contains attributes outside of the list of permissible attributes for the object class" must be triggered related to the feature objects created. T1546: An error "Check that no object has an attribute value for VERACC without a corresponding attribute value for at least one of VERCLR, VERCOP, VERCSA or VERCCL" must be triggered related to the features objects created.					
Dataset Name	AA500020	S-58 test No.	T1731	Type E		
S-58 Description	Check that no BCNISD object contains	the attributes VERI	DAT and VERACC			
Test Case No. 1	BCNISD object captured with attributes	s VERDAT and VER	ACC.			
Location	32°30'33.85"S 60°51'34.53"E	S57 Encoding	BCNISD(P)	VERDAT=3 VERACC=3 HEIGHT=1.0		

Screen Capture		149			
Expected test results	T1731: An error "prohibited attribute T1731: An error "prohibited attribute		_		
Secondary errors	T547: An error "Object contains attrib object class" must be triggered relate T1546: An error "Check that no object attribute value for at least one of VER to the features objects created.	utes outside of the d to the feature obj	list of permissiblects created.	e attributes for tl without a corresp	ne
Dataset Name	AA500020	S-58 test No.	T1733	Туре	E
S-58 Description	Check that no BCNSAW object contain	ns the attributes VEI	RDAT and VERAC	C.	
Test Case No. 1	BCNSAW object captured with attribu	tes VERDAT and VE	RACC.		
Location	32°30'38.89"S 60°51'21.50"E	S57 Encoding	BCNSAW(P)	VERDAT=3 VERACC=3 HEIGHT=1.0	
Screen Capture	⁴ ₃ _				
Expected test results	T1733: An error "prohibited attribute T1733: An error "prohibited attribute	'veracc' in Beacon,	safe water" mus	t be triggered.	<u> </u>
Secondary errors	T547: An error "Object contains attrib object class" must be triggered relate		•	e attributes for tl	ne

	T1546: An error "Check that no obje attribute value for at least one of VE to the features objects created.			·	_
Dataset Name	AA500020	S-58 test No.	T1734	Туре	E
S-58 Description	Check that no BCNSPP object contai			1	
Test Case No. 1	BCNSPP object captured with attribu	ites VERDAT and VER	RACC.		
Location	32°30'46.65"S 60°50'57.37"E	S57 Encoding	BCNSPP(P)	VERDAT=3 VERACC=3 HEIGHT=1.0	
Screen Capture	1				
Expected test results	T1734: An error "prohibited attribut triggered. T1734: An error "prohibited attribut triggered.				
Secondary errors	T547: An error "Object contains attr object class" must be triggered relat T1546: An error "Check that no obje attribute value for at least one of VE to the features objects created.	ed to the feature obj	ects created.	without a correspo	onding
Dataset Name	AA500020	S-58 test No.	T1735	Туре	E
S-58 Description	Check that no Beacon object contain value for MARSYS within the object			nat is identical to th	ne
Test Case No. 1	BCNCAR object captured with attrib	ute MARSYS.			
Location	32°30'54.77"S 60°51'15.06"E	S57 Encoding	BCNCAR(P) BCNISD(P) BCNLAT(P) BCNSPP(P) BCNSAW(P) M_NSYS(A)	MARSYS=2	

Screen Capture	† T T	1		
Expected test results	T1735:Five errors "redundant 'marsys'	is defined by 'm_n	sys' Beacon, card	linal" must be triggered.
Secondary errors	T0513: Five errors "The feature's value			
,	M_NSYS covering the feature" must be	triggered related t	to the features o	bjects created.
Dataset Name	AA500020	S-58 test No.	T1736	Type E
Dataset Name	AA300020	5-56 test No.	11/30	Type E
S-58 Description	Check that no DAYMAR object contains	s the attributes VEF	RDAT and VERAC	C.
Test Case No. 1	DAYMAR object captured with attribut	es VERDAT and VEI	RACC.	
Location	32°30'54.71"S 60°51'42.41"E	S57 Encoding	DAYMAR(P)	VERDAT=3 VERACC=3 HEIGHT=1.0
Screen Capture	Q			
Expected test results	T1736: An error "prohibited attribute '	•		
	T1736: An error "prohibited attribute"			
	T547: An error "Object contains attribu object class" must be triggered related		•	e altribules for the
Secondary errors	T1546: An error "Check that no object attribute value for at least one of VERC to the features objects created.			

Dataset Name	AA500020	S-58 test No.	T1737	Type E				
S-58 Description	Check that no BOYCAR object contains the attribute VERACC.							
Test Case No. 1	BOYCAR object captured with attribute VERACC.							
Location	32°30'32.06"S 60°51'55.42"E	S57 Encoding	BOYCAR(P)	VERACC=1				
Screen Capture	4							
Expected test results	T1737: An error "prohibited attribute "	veracc' in Buoy, car	dinal" must be tr	iggered.				
Secondary errors	T547: An error "Object contains attributed object class" must be triggered related T1546: An error "Check that no object attribute value for at least one of VERC to the features objects created.	to the feature objection has an attribute va	ects created. ue for VERACC w	vithout a corresponding				
Dataset Name	AA500020	S-58 test No.	T1738	Type E				
S-58 Description	Check that no BOYINB object contains	L	<u> </u>	1,760				
Test Case No. 1	BOYINB object captured with attribute	VERACC.						
Location	32°31'01.67"S 60°50'47.93"E	S57 Encoding	BOYINB(P)	VERACC=1				
Screen Capture								

Expected test results	T1738: An error "prohibited attribute	e 'veracc' in Buoy, ins	stallation" must b	e triggered.		
Secondary errors	T1546: An error "Check that no object attribute value for at least one of VEF to the features objects created.				•	_
Dataset Name	AA500020	S-58 test No.	T1739	Тур	e	E
S-58 Description	Check that no BOYISD object contains	s the attribute VERA	CC.			
Test Case No. 1	BOYISD object captured with attribut	e VERACC.				
Location	32°30'16.86"S 60°51'42.40"E	S57 Encoding	BOYISD(P)	VERACC=1		
Screen Capture	4					
Expected test results	T1739: An error "prohibited attribute	'veracc' in Buoy, isc	olated danger" m	ust be trigger	ed.	
Secondary errors	T547: An error "Object contains attributes outside of the list of permissible attributes for the object class" must be triggered related to the feature objects created. T1546: An error "Check that no object has an attribute value for VERACC without a corresponding attribute value for at least one of VERCLR, VERCOP, VERCSA or VERCCL" must be triggered related to the features objects created.					
			T	T		
Dataset Name	AA500020	S-58 test No.	T1740	Тур	e	E
Dataset Name S-58 Description	AA500020 Check that no BOYLAT object contain		I	Тур	e	E
		s the attribute VERA	I	Тур	e	E

Screen Capture				
Expected test results	T1740: An error "prohibited attribute "	veracc' in Buoy, lat	eral" must be tri	ggered.
Secondary errors	T547: An error "Object contains attributed object class" must be triggered related T1546: An error "Check that no object attribute value for at least one of VERC to the features objects created.	ites outside of the to the feature obj has an attribute va	list of permissible ects created.	e attributes for the vithout a corresponding
Dataset Name	AA500020	S-58 test No.	T1741	Type E
S-58 Description Test Case No. 1	Check that no BOYSPP object contains		cc.	
Location	BOYSPP object captured with attribute 32°30'41.74"S 60°50'38.45"E	S57 Encoding	BOYSPP(P)	VERACC=1
Screen Capture	13 ₇			
Expected test results	T1741: An error "prohibited attribute "	veracc' in Buoy so	ecial purnose" m	ust be triggered
Secondary errors	T547: An error "Object contains attribute object class" must be triggered related T1546: An error "Check that no object attribute value for at least one of VERC to the features objects created.	ites outside of the to the feature objusted an attribute va	list of permissible ects created.	e attributes for the vithout a corresponding

Dataset Name	AA500020	S-58 test No.	T1742	Туре	E			
S-58 Description	Check that no BOYSAW object contains the attribute VERACC.							
Test Case No. 1	BOYSAW object captured with attribut	e VERACC.						
Location	32°30'03.46"S 60°50'40.99"E	S57 Encoding	BOYSAW(P)	VERACC=1				
Screen Capture	Q							
Expected test results	T1742: An error "prohibited attribute '							
Secondary errors	T547: An error "Object contains attributed object class" must be triggered related T1546: An error "Check that no object attribute value for at least one of VERC to the features objects created.	to the feature objoints to the feature objoints	ects created. lue for VERACC v	vithout a corres	oonding			
Dataset Name	AA500020	S-58 test No.	T1743	Туре	E			
S-58 Description	Check that no Buoy object contains a v for MARSYS within the object M_NSYS			is identical to th	e value			
Test Case No. 1	BOYLAT object captured with attribute	MARSYS.						
Location	32°30'48.95"S 60°50'36.98"E	S57 Encoding	BOYLAT(P) BOYCAR(P) BOYINB(P) BOYISD(P) BOYSAW(P) BOYSPP(P) M_NSYS(A)	MARSYS=2				

Screen Capture		4		
Expected test results	T1743: 6 errors "redundant 'marsys' is o		•	
Secondary errors	T0513: 6 errors "The feature's value for M_NSYS covering the feature" must be		RSYS must not be	e equal to that of the
	, = -	- 30		
Dataset Name	AA500020	S-58 test No.	T1744	Type E
S-58 Description	Check that no LITVES object contains th	e attributes HORA	CC and VERACC.	
Test Case No. 1	LITVES object captured with attributes	HORACC and VERA	ACC.	
Location	32°31'05.30"S 60°52'01.14"E	S57 Encoding	LITVES(P)	VERACC=1 HORACC=1
Screen Capture	<u></u>			
Expected test results	T1744: An error "prohibited attribute 'h T1744: An error "prohibited attribute 'v	eracc' in Light ves	sel" must be trig	gered.
Secondary errors	T547: An error "Object contains attributed object class" must be triggered related. T1545: An error "Check that no object has value for HORCLR" must be triggered resulted. T1546: An error "Check that no object has attribute value for at least one of VERC to the features objects created.	to the feature objoins an attribute vallated to the featunas an attribute va	ects created. lue for HORACC res objects creat lue for VERACC v	without an attribute ed. without a corresponding

Dataset Name	AA500020	S-58 test No.	T1745		Туре	E		
S-58 Description	Check that no LITFLT object contains the attributes HORACC and VERACC.							
Test Case No. 1	LITFLT object captured with attributes	HORACC and VERA	CC.					
Location	32°30'53.67"S 60°51'57.88"E	S57 Encoding	LITFLT(P)	VERAC HORAC	_			
Screen Capture								
Expected test results	T1745: An error "prohibited attribute '	_						
Secondary errors	T547: An error "Object contains attributed by the contains attributed by th	T1745: An error "prohibited attribute 'veracc' in Light float" must be triggered. T547: An error "Object contains attributes outside of the list of permissible attributes for the object class" must be triggered related to the feature objects created. T1545: An error "Check that no object has an attribute value for HORACC without an attribute value for HORCLR" must be triggered related to the features objects created. T1546: An error "Check that no object has an attribute value for VERACC without a corresponding attribute value for at least one of VERCLR, VERCOP, VERCSA or VERCCL" must be triggered related						
		T			T	T		
Dataset Name	AA500020	S-58 test No.	T1746		Type	E		
S-58 Description	Check that no TOPMAR object contains MARSYS.	s the attributes VEF	RACC, VERDAT, V	ERLEN, F	HEIGHT a	nd		
Test Case No. 1	BOYSAW, TOPMAR captured with attri	butes VERACC, VER		EIGHT ar	nd MARS\	/S.		
Location	32°30'01.66"S 60°50'53.07"E	S57 Encoding	BOYSAW(P) TOPMAR(P)	VERAC VERLE VERDA HEIGH MARS	N=2 AT=3 T=1			

Screen Capture	·			
Expected test results	T1746: An error "prohibited attribute T1746: An error "prohibited attribute T1746: An error "prohibited attribute T1746: An error "prohibited attribute T1746: An error "prohibited attribute	'veracc' in Top mar 'verdat' in Top mar 'height' in Top mar	k" must be trigge k" must be trigge k" must be trigge	ered. ered. ered.
Secondary errors	T547: An error "Object contains attribute value for at least one of VEF to the features objects created.	t has an attribute va	ects created.	without a corresponding
	T	T = == -:	T	1_ 1_
Dataset Name	AA500020	S-58 test No.	T1747	Type E
S-58 Description	Check that no RETRFL object contains	the attributes VER	ACC and MARSYS	
Test Case No. 1	LNDMRK, RETRFL captured with attril	outes VERACC and N		_
Location	32°30'40.20"S 60°49'59.13"E	S57 Encoding	LNDMRK(P) RETFLT(P)	VERACC=1 MARSYS=2
Screen Capture				
Expected test results	T1747: An error "prohibited attribute T1747: An error "prohibited attribute			

Secondary errors	T547: An error "Object contains attribu object class" must be triggered related T1546: An error "Check that no object hattribute value for at least one of VERC to the features objects created.	to the feature obje	ects created. lue for VERACC v	vithout a corresponding
			T	
Dataset Name	AA500020	S-58 test No.	T1748	Type E
S-58 Description	Check that no RETRFL object contains the	he attribute VERDA	AT.	
Test Case No. 1	LNDMRK, RETRFL captured with attribu	te VERDAT.		
Location	32°30'35.97"S 60°50'02.88"E	S57 Encoding	LNDMRK(P) RETFLT(P)	VERDAT=3
Screen Capture	●			
Expected test results	T1748: An error "prohibited attribute 'v			
Secondary errors	T547: An error "Object contains attribu object class" must be triggered related		•	e attributes for the
Dataset Name	AA500020	S-58 test No.	T1749	Type E
S-58 Description	Check that no LIGHTS object contains the	ne attribute VERAC	CC.	
Test Case No. 1	LNDMRK, LIGHTS captured with attribu	te VERACC.		

Screen Capture		.w				
Expected test results	T1749: An error "prohibited attribute '	veracc' in Light" mເ	ust be triggered.			
Secondary errors	T547: An error "Object contains attributed object class" must be triggered related T1546: An error "Check that no object attribute value for at least one of VERG to the features objects created.	I to the feature objute has an attribute va	ects created.	without a	correspo	onding
Dataset Name	AA500020	S-58 test No.	T1750		Туре	E
S-58 Description Test Case No. 1	Check that no LIGHTS object that is a s BOYLAT, LIGHTS captured with attribute		ct, has a value fo	or the attr	ibute HE	IGHT.
Location	32°30'04.91"S 60°52'14.14"E	S57 Encoding	BOYLAT(P) BOYCAR(P) BOYINB(P) BOYISD(P) BOYSAW(P) BOYSPP(P) LIGHTS(P)	HEIGHT	 	
Screen Capture	F.W1m	F.G1m				
Expected test results	T1750: 6 errors "prohibited attribute 'l	height' in Light" mu	st be triggered.			

S58 Test	Description
1751	Check that no LIGHTS object has a value for ORIENT without a value of (1) [directional function] or (16) [moiré effect] for CATLIT.
1752	Check that no LIGHTS object with a value of (1) [fixed] for LITCHR contains the attributes SIGGRP, SIGPER and SIGSEQ.
1754	Check that no LIGHTS object has an attribute value for VERDAT that is identical to the VERDAT value within M_VDAT.
1755	Check that no LIGHTS object has an attribute value for VERDAT that is identical to the value given in the Vertical Datum subfield (VDAT) of the Data Set Parameter field (DSPM).
1756	Check that no LIGHTS object having a value of (4) [leading light] for the attribute CATLIT has a value for ORIENT, unless CATLIT also contains a value of (1) [directional function].
1757	Check that any LIGHTS object having values of (19) [horizontally disposed] or (20) [vertically disposed] for the attribute CATLIT also has the number of lights encoded in MLTYLT.
1758	Check that no LIGHTS object has a value of (17) [emergency] for the attribute CATLIT without another LIGHTS object encoded with the same spatial position.
1759	Check that no RDOSTA object contains a value for the attribute ORIENT without a value of (2) [directional radio beacon] for the attribute CATROS.
1760	Check that no RADSTA object contains the attributes VERACC and VERDAT.
1761	Check that no RADRFL object contains the attributes VERACC and VERDAT.
1762	Check that no RADRFL object is encoded on an Area or Point type object, except for DAYMAR or PILPNT objects.
1764	Check that no permanent object with a value of (1) [permanent] for the attribute STATUS has PERSTA and/or PEREND encoded.
1768	Check for any SOUNDG object, that any depth value is greater than DRVAL1 of the overlying DEPARES or DRGARE object. Remark: This check must only be applied if DRVAL1 for the overlying DEPARE or DRGARE object is encoded with an explicit value.
1769	Check for any SOUNDG object, if the value for EXPSOU is not (3) [deeper than the range of depth of the surrounding depth area], that any depth value is shoaler than or equal to DRVAL2 of the overlying DEPARE object. Remark: This check must only be applied if DRVAL2 for the overlying DEPARE object is encoded with an explicit value.
1770	Check for any SOUNDG object, if the value for EXPSOU is (3) [deeper than the range of depth of the surrounding depth area], that any depth value is: • greater than DRVAL2 of the overlying DEPARE, or • greater than DRVAL2 of the overlying DRGARE, when both DRVAL1 and DRVAL2 for the DRGARE are encoded, or • greater than DRVAL1 of the overlying DRGARE, when only DRVAL1 for the DRGARE is encoded. Remark: This check must only be applied if DRVAL2 for the overlying DEPARE object or DRVAL1 for the overlying DRGARE object are not encoded as "unknown".
1772	Check for any UWTROC object with VALSOU encoded with an explicit attribute value, if the value for EXPSOU is (1) [within the range of depth of the surrounding depth area] or if EXPSOU is not used, that the value for VALSOU is greater than DRVAL1 and less than or equal to DRVAL2 of the overlying DEPARE or DRGARE object. Remark: This check must only be applied if both DRVAL1 and DRVAL2 for the overlying Group 1 object are encoded with explicit and different attribute values.
1773	Check for any UWTROC object with VALSOU encoded with an explicit attribute value, if the value for EXPSOU is (2) [shoaler than the range of depth of the surrounding depth area], that the value for VALSOU is less than or equal to DRVAL1 of the overlying DEPARE or DRGARE object. Remark: This check must only be applied if DRVAL1 for the overlying Group 1 object is not encoded as "unknown".
1774	Check for any UWTROC object with VALSOU encoded with an explicit attribute value, if the value for EXPSOU is (3) [deeper than the range of depth of the surrounding depth area], that the value for VALSOU is: • greater than DRVAL2 of the overlying DEPARE, or • greater than DRVAL2 of the overlying DRGARE, when both DRVAL1 and DRVAL2 for the DRGARE are encoded, or • greater than DRVAL1 of the overlying DRGARE, when only DRVAL1 for the DRGARE is encoded. Remark: This check must only be applied if DRVAL2 for the overlying DEPARE object or DRVAL1 for the overlying DRGARE object are not encoded as "unknown".
1776	Check that any LIGHTS object having value 6, 7, 9, 10, 11 or 28 for LITCHR is encoded with the corresponding value for SIGGRP: LITCHR = 6 [ultra quick-flashing], then SIGGRP = (1) LITCHR = 7 [isophase], then SIGGRP = (1) LITCHR = 9 [interrupted quick-flashing], then SIGGRP = () LITCHR = 10 [interrupted very quick-flashing], then SIGGRP = () LITCHR = 11 [interrupted ultra quick-flashing], then SIGGRP = () LITCHR = 28 [alternating], then SIGGRP = ()
1779	Check that no area DEPARE object has DRVAL1 equal to DRVAL2.
507	Check for all mandatory attributes.

Dataset Name	AA500021	S-58 test No.	T1751	Туре	E
S-58 Description	Check that no LIGHTS object has a value (16) [moiré effect] for CATLIT.	ie for ORIENT witho	out a value of (1) [d	lirectional function]	or
Test Case No. 1	Captured a LIGHTS object with attribut	te CATLIT and ORIEI	NT		
Location	32°31'36.91"S 60°49'26.58"E	S57 Encoding	LIGHTS(P)	CATLIT=6	
Screen Capture				ORIENT=25	
Expected test results	T1751: An error "meaningless value of	'orient' in Light" m	ust be triggered.		
Secondary errors	None.				
Test Case No. 2	Captured a LIGHTS object with attribut	te ORIENT and unde	efined CATLIT.	T	
Location	32°31'36.91"S 60°49'26.85"E	S57 Encoding	LIGHTS(P)	ORIENT=25	
Screen Capture					
Expected test results	T1751: An error "meaningless value of	'orient' in Light" m	ust be triggered.		
Secondary errors	None.				
			T .		
Dataset Name	AA500021	S-58 test No.	T1752	Туре	E
S-58 Description	Check that no LIGHTS object with a val SIGPER and SIGSEQ.	ue of (1) [fixed] for	LITCHR contains th	ne attributes SIGGRI	Ρ,
Test Case No. 1	Captured LIGHTS with attributes LITCH	IR, SIGGRP, SIGPER	and SIGSEQ.		
Location	32°31'37.19"S 60°49'27.75"E	S57 Encoding	LIGHTS(P)	LITCHR=1 SIGGRP=(1)	

	I			SIGPER=4	
				SIGSEQ=00.4+(0	3.6)
Screen Capture	Į.				
Expected test results	T1752: An error "fixed light with period	dic signal in Light" r	nust be triggered.		
Secondary errors	T0541: An error "Check that the SIGGR which must not have a value for SIGGR		·	•	TS,
Dataset Name	AA500021	S-58 test No.	T1754	Туре	E
S-58 Description	Check that no LIGHTS object has an att within M_VDAT.	ribute value for VE	RDAT that is ident	ical to the VERDAT	value
Test Case No. 1	Captured a LIGHTS object with attribut	e VERDAT is equal		the overlying M_V	DAT
Location	32°31'37.16"S 60°49'28.28"E	S57 Encoding	M_VDAT(A) LIGHTS(P)	VERDAT=28	
Screen Capture					
Expected test results	T1754: An error "redundant 'verdat' is				
Secondary errors	T0513: An error "Check that an attribu the general value defined by the meta (VDAT) of the Data Set Parameter field	object. Attribute V	ERDAT equals the	Vertical Datum sul	bfield
		T	I		1
Dataset Name	AA500021	S-58 test No.	T1755	Туре	E
S-58 Description	Check that no LIGHTS object has an att the Vertical Datum subfield (VDAT) of t			_	ven in

Test Case No. 1	Captured a LIGHTS objection Set of Parameter field.	ect with attribut	e VERDAT is equal	to the Vertical Dat	um subfield of the Data
Location	32°31'37.23"S 60°49'28	8.91"E	S57 Encoding	LIGHTS(P)	VERDAT=16
Screen Capture		1			
Expected test results	T1755: An error "prohib	oited attribute 'v	verdat' in Light" m	ust be triggered.	
Secondary errors	T0513: An error "Check the general value define (VDAT) of the Data Set created.	ed by the meta	object. Attribute V	ERDAT equals the	Vertical Datum subfield
Dataset Name	AA500021		S-58 test No.	T1756	Type E
S-58 Description	Check that no LIGHTS o for ORIENT, unless CAT				bute CATLIT has a value
Test Case No. 1	Captured a LIGHTS obje	ect with attribut	e CATLIT and ORIE	NT.	
			C== - !:	LICUTC(D)	CATLIT=4
Location	32°31'37.70"S 60°49'28	8.67"E	S57 Encoding	LIGHTS(P)	ORIENT=10
Screen Capture	32°31'37.70"S 60°49'28	8.67"E	S57 Encoding	LIGHTS(P)	ORIENT=10
	32°31'37.70"S 60°49'28	1			
Screen Capture		ute conflict bety	ween 'catlit' and 'o	rient' in Light" mus	st be triggered. hen CATLIT must

Location	32°31'38.46"S 60°49'29.18"E	S57 Encoding	LIGHTS(P)	CATLIT=1,4 ORIENT=10	
Screen Capture	A				
Expected test results	T1756: An error "attribute conflict b	etween 'catlit' and 'o	rient' in Light" mus	st not be triggered.	
Secondary errors	None.				
	T		T	1 1	
Dataset Name	AA500021	S-58 test No.	T1757		E
S-58 Description	Check that any LIGHTS object having disposed] for the attribute CATLIT al	· · · · ·		· · ·	
Test Case No. 1	Captured a LIGHTS object with attrib	oute CATLIT.	<u> </u>		
Location	32°31'53.15"S 60°49'57.80"E	S57 Encoding	LIGHTS(P)	CATLIT=19 MLTYLT=UNDEFIN	NED
Screen Capture	19 ₅				
Expected test results	T1757: An error "attribute conflict b	etween 'catlit' and 'n	nltylt' in Light" mus	t be triggered	
Secondary errors	None.				
Test Case No. 2	Captured a LIGHTS object with attrib	oute CATLIT			
Location	32°31'52.88"S 60°50'06.07"E	S57 Encoding	LIGHTS(P)	CATLIT=20 MLTYLT=UNDEFIN	NED

Screen Capture		20 ₇		
Expected test results	T1757: An error "attribute conflict bet	ween 'catlit' and 'm	ltylt' in light" must	: be triggered
Secondary errors	None.			
Dataset Name	AA500021	S-58 test No.	T1758	Type E
S-58 Description	Check that no LIGHTS object has a valuanother LIGHTS object encoded with the		• -	e CATLIT without
Test Case No. 1	Captured a LIGHTS object with attribut	1		
Location	32°32'01.85"S 60°50'05.28"E	S57 Encoding	LIGHTS(P)	CATLIT=17
Screen Capture	21	21 ₉		
Expected test results	T1758: An error "meaningless value of	'catlit' in Light" mu	st be triggered.	
Secondary errors	None.			
		I	1	
Dataset Name	AA500021	S-58 test No.	T1759	Type E
S-58 Description	Check that no RDOSTA object contains [directional radiobeacon] for the attrib	ute CATROS.		
Test Case No. 1	Captured a RDOSTA object with attribu radiobeacon].	ite ORIENT without	a value of CATROS	_
Location	32°32'05.01"S 60°50'17.52"E	S57 Encoding	RDOSTA(P)	ORIENT=50 CATROS=7

Screen Capture	21 ₉
Expected test results	T1759: An error "meaningless value of 'orient' in Radio station" must be triggered.
Secondary errors	None.
Dataset Name	AA500021 S-58 test No. T1760 Type E
S-58 Description	Check that no RADSTA object contains the attributes VERACC and VERDAT.
Test Case No. 1	Captured a RADSTA object contains the attributes VERACC and VERDAT.
Location	32°32'09.02"S 60°50'26.67"E
Screen Capture	T1760: An error "prohibited attribute "verace" in Padar station" must be triggered
Expected test results	T1760: An error "prohibited attribute 'veracc' in Radar station" must be triggered. T1760: An error "prohibited attribute 'verdat' in Radar station" must be triggered.
Secondary errors	T547: An error "Object contains attributes outside of the list of permissible attributes for the object class" must be triggered related to the feature objects created. T1546: An error "Check that no object has an attribute value for VERACC without a corresponding attribute value for at least one of VERCLR, VERCOP, VERCSA or VERCCL" must be triggered for the objects created.
Dataset Name	AAF00024
Dataset Name	AA500021 S-58 test No. T1761 Type E
S-58 Description	Check that no RADRFL object contains the attributes VERACC and VERDAT.
Test Case No. 1	Captured a RADRFL object contains the attributes VERACC and VERDAT.

				VERACC=3	
Location	32°32'12.14"S 60°50'33.68"E	S57 Encoding	RDARFL(P)	VERDAT=1	
Screen Capture	*				
Expected test results	T1761: An error "prohibited attribute '	verdat' in Radar ref	lector" must be tri	iggered.	
Secondary errors	T547: An error "Object contains attribuclass" must be triggered related to the T1546: An error "Check that no object attribute value for at least one of VERC to the objects created.	feature objects cre	ated. ue for VERACC wit	thout a corresponding	
Dataset Name	AA500021	S-58 test No.	T1762	Type E	
S-58 Description	Check that no RADRFL object is encode PILPNT objects.		_	/ I -	
Test Case No. 1	Captured a RADRFL object on a depth a	area and offshore p	latform.		
Location	32°32'13.81"S 60°50'44.28"E	S57 Encoding	RADRFL(P)		
Screen Capture	*	∳			
Expected test results	T1762:Two errors "RADREL object is en	coded on an Area	or Point type object	ct" must be triggered.	
ı •	T1762:Two errors "RADRFL object is encoded on an Area or Point type object" must be triggered.				
Secondary errors	None.				
Secondary errors Test Case No. 2					

Screen Capture	*				
Expected test results	T1762: An error "RADRFL object is en	coded on an Area or	Point type object"	' must not be trigge	ered.
Secondary errors	None.				
Test Case No. 3	Captured a RADRFL object on a DAYN	IAR feature.	1	1	
Location	32°31'33.58"S 60°49'30.58"E	S57 Encoding	RADRFL(P) DAYMAR(P)		
Screen Capture	R				
Expected test results	T1762: An error "RADRFL object is en	coded on an Area or	Point type object"	' must not be trigge	ered.
Secondary errors	None.				
Dataset Name	AA500021	S-58 test No.	T1764	Туре	E
S-58 Description	Check that no permanent object with PERSTA and/or PEREND encoded.				
Test Case No. 1	BOYLAT object captured with attribut	es STATUS has PERS	TA and/or PEREND	1	
Location	32°31'55.41"S 60°50'14.36"E	S57 Encoding	BOYLAT(P)	STATUS=1 PERSTA=21.03.— PERSTA=21.03	

Screen Capture	20 ₇	21 ₈		
Expected test results	T1764: An error "permanent object	with period specified	Buoy, lateral" mus	st be triggered.
Secondary errors	T1516: A warning "periodic object was the feature object created. T0073: A warning "Check that Period space. Check that the format of the object created.	odic Date, Start (PERST)	A) does not contai	in a leading or a trailing
Dataset Name	AA500021	S-58 test No.	T1768	Type W
S-58 Description	Check for any SOUNDG object, that DEPARES or DRGARE object. Remar DEPARE or DRGARE object is encod	any depth value is gre	eater than DRVAL1 by be applied if DRV	of the overlying
Test Case No. 1	 Captured SOUNDG objects having t Less than equal to DRVAL1 Less than equal to DRVAL1 	of the overlying the D		
Location	32°31'44.03"S 60°52'04.86"E	S57 Encoding	SOUNDG(P) DRGARE(A) DEPARE(A)	8,9,8 and 9.1m DRVAL1=9 DRVAL1=9.1 DRVAL2=18.2
Screen Capture	8	9 <u>9</u> 9	}	
Expected test results	T1768: Four warnings "spot soundi	ng shallower than encl	osing 'depare'" mi	ust be triggered.
Secondary errors	None.	<u> </u>	5 p	
2230	1			

Dataset Name	AA500021	S-58 test No.	T1769	Type W			
S-58 Description	Check for any SOUNDG object, if the value for EXPSOU is not (3) [deeper than the range of depth of the surrounding depth area], that any depth value is shoaler than or equal to DRVAL2 of the overlying DEPARE object. Remark: This check must only be applied if DRVAL2 for the overlying DEPARE object is encoded with an explicit value.						
Test Case No. 1	Captured a SOUNDG object having	Captured a SOUNDG object having the depth value, greater than DRVAL2 for the overlying DEPARE.					
Location	32°32'50.92"S 60°50'57.47"E						
Screen Capture	40						
Expected test results	T1769: A warning "bad sounding exposition (overlying depare" must be triggered.						
Secondary errors	None.						
Dataset Name	AA500021	S-58 test No.	T1770	Type W			
S-58 Description	Check for any SOUNDG object, if the value for EXPSOU is (3) [deeper than the range of depth of the surrounding depth area], that any depth value is: • greater than DRVAL2 of the overlying DEPARE, or • greater than DRVAL2 of the overlying DRGARE, when both DRVAL1 and DRVAL2 for the DRGARE are encoded, or • greater than DRVAL1 of the overlying DRGARE, when only DRVAL1 for the DRGARE is encoded. Remark: This check must only be applied if DRVAL2 for the overlying DEPARE object or DRVAL1 for the overlying DRGARE object are not encoded as "unknown".						
Test Case No. 1	, 9						
Location	32°32'52.89"S 60°51'30.07"E	Captured SOUNDG object less than DRVAL2 of the overlying DEPARE. SOUNDG(P) EXPSOU=3 32°32'52.89"S 60°51'30.07"E S57 Encoding DEPARE(A) DRVAL1=18.2 DRVAL2=36.5					

Screen Capture	30				
Expected test results	T1770: A warning "bad sounding expo	pare)" must be trig	gered.		
Secondary errors	None.				
Test Case No. 2	Captured SOUNDG object with value less than DRVAL2 of the overlying DRGARE, when both DRVAL1 and DRVAL2 for the DRGARE are encoded.				
Location	32°32'52.76"S 60°51'50.00"E	S57 Encoding	SOUNDG(P) DRGARE(A)	EXPSOU=3 DRVAL1=31 DRVAL2=35	
Screen Capture	30 30:				
Expected test results	T1770: A warning "bad sounding exposition (overlying depare)" must be triggered.				
Secondary errors	None.				
Test Case No. 3	Captured SOUNDG object with value lo	ess than DRVAL1 of	the overlying DRG	ARE.	
Location	32°32'54.16"S 60°51'41.53"E	S57 Encoding	SOUNDG(P) DRGARE(A)	EXPSOU=3 DRVAL1=35	

Screen Capture	30					
Expected test results	T1770: A warning "bad sounding exposition (overlying depare)" must be triggered.					
Secondary errors	None.					
Dataset Name	AA500021					
S-58 Description	Check for any UWTROC object with VALSOU encoded with an explicit attribute value, if the value for EXPSOU is (1) [within the range of depth of the surrounding depth area] or if EXPSOU is not used, that the value for VALSOU is greater than DRVAL1 and less than or equal to DRVAL2 of the overlying DEPARE or DRGARE object. Remark: This check must only be applied if both DRVAL1 and DRVAL2 for the overlying Group 1 object are encoded with explicit and different attribute values.					
Test Case No. 1	Captured UWTROC object with attributes EXPSOU and VALSOU. Assigning the VALSOU value less than DRVAL1 of the overlying DEPARE. Assigning the VALSOU value greater than DRVAL2 of the overlying DEPARE. Assigning the VALSOU value less than DRVAL1 of the overlying DRGARE. Assigning the VALSOU value greater than DRVAL2 of the overlying DRGARE. Assigning the EXPSOU=1 and VALSOU value less than DRVAL1 of the overlying DEPARE. Assigning the EXPSOU=1 and VALSOU value greater than DRVAL2 of the overlying DEPARE. Assigning the EXPSOU=1 and VALSOU value less than DRVAL1 of the overlying DRGARE. Assigning the EXPSOU=1 and VALSOU value greater than DRVAL2 of the overlying DRGARE.					
Location	32°33'01.57"S 60°50'03.67"E S57 Encoding UWTROC(P) VALSOU=16 VALSOU=40 EXPSOU=1 DRGARE(A) DRVAL1=30 DRVAL2=35					

Screen Capture	16 16 40 16 16 40	77] 40 40				
Expected test results	T1772: Four errors "spot sounding dee T1772: Four errors "spot sounding shall					
Secondary errors	None.					
	1		T = . = = =	1_ 1_		
Dataset Name	Check for any HWTROC object with VA	S-58 test No.	T1773	Type E		
S-58 Description	Check for any UWTROC object with VALSOU encoded with an explicit attribute value, if the value for EXPSOU is (2) [shoaler than the range of depth of the surrounding depth area], that the value for VALSOU is less than or equal to DRVAL1 of the overlying DEPARE or DRGARE object. Remark: This check must only be applied if DRVAL1 for the overlying Group 1 object is not encoded as "unknown".					
Test Case No. 1	Captured UWTROC object with attribute VALSOU and EXPSOU. Assigning the VALSOU for UWTROC greater than DRVAL1 of the overlying DEPARE. Assigning the VALSOU for UWTROC greater than DRVAL1 of the overlying DRGARE.					
Location	32°33'02.66"S 60°50'39.06"E	S57 Encoding	UWTROC(P) DRGARE(A) DEPARE(A)	VALSOU=25 EXPSOU=2 DRVAL1=20 DRVAL1=18.2 DRVAL2=36.5		
Screen Capture	(25)					
Expected test results	T1773: Two errors "bad sounding expo	sition" must be tri	ggered.			
Secondary errors	None.		= =			
-						

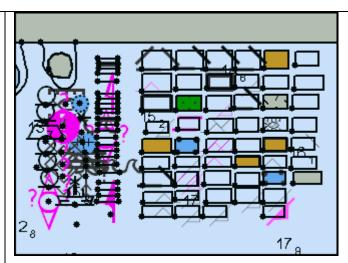
Dataset Name	AA500021	S-58 test No.	T1774	Туре			
S-58 Description	Check for any UWTROC object with VALSOU encoded with an explicit attribute value, if the value for EXPSOU is (3) [deeper than the range of depth of the surrounding depth area], that the value for VALSOU is: • greater than DRVAL2 of the overlying DEPARE, or • greater than DRVAL2 of the overlying DRGARE, when both DRVAL1 and DRVAL2 for the DRGARE are encoded, or • greater than DRVAL1 of the overlying DRGARE, when only DRVAL1 for the DRGARE is encoded. Remark: This check must only be applied if DRVAL2 for the overlying DEPARE object or DRVAL1 for the overlying DRGARE object are not encoded as "unknown".						
Test Case No. 1	Captured UWTROC object with attribute VALSOU and EXPSOU. Assigning the VALSOU for UWTROC object less than DRVAL2 of the overlying DEPARE.						
Location	32°32'32.09"S 60°50'53.00"E	VALSOU=30 EXPSOU=3 DRVAL1=18.2 DRVAL2=36.5					
Screen Capture		30.7					
Expected test results	T1774: An error "bad sounding exposition" must be triggered						
Secondary errors	None.						
Test Case No. 2	Assigning the VALSOU for UWTROC object less than DRVAL2 of the overlying DRGARE, when both DRVAL1 and DRVAL2 are encoded.						
Location	32°32'32.19"S 60°51'03.60"E	S57 Encoding	UWTROC(P) DRGARE	VALSOU=30 EXPSOU=3 DRVAL1=31 DRVAL2=35			

Screen Capture	30	30-34 30-34 30-34 30-34 30-34 30-34 30-34			
Expected test results	T1774: An error "bad sounding expositi	on" must be trigge	ered		
Secondary errors	None.				
Test Case No. 3	Assigning the VALSOU for UWTROC obj	ect less than DRVA	L1 of the overlying	g DRGARE.	
Location	32°32'31.21"S 60°51'13.49"E	CEZ Eurodina	UWTROC(P)	VALSOU=30	
Location	32 32 31.21 3 60 51 13.49 E	S57 Encoding	DRGARE(A)	EXPSOU=3 DRVAL1=31	
Screen Capture	(30)				
Expected test results	T1774: An error "bad sounding expositi	on" must be trigge	ered		
Secondary errors	None.				
Dataset Name	AA500021	S-58 test No.	T1776	Type W	
S-58 Description	Check that any LIGHTS object having value 6, 7, 9, 10, 11 or 28 for LITCHR is encoded with the corresponding value for SIGGRP: LITCHR = 6 [ultra quick-flashing], then SIGGRP = (1) LITCHR = 7 [isophase], then SIGGRP = (1) LITCHR = 9 [interrupted quick-flashing], then SIGGRP = () LITCHR = 10 [interrupted very quick-flashing], then SIGGRP = () LITCHR = 11 [interrupted ultra quick-flashing], then SIGGRP = () LITCHR = 28 [alternating], then SIGGRP = ()				
Test Case No. 1	Captured LIGHTS objects with attribute	LITCHR (6,7,9,10,1	11 and 28) and SIG	GRP	

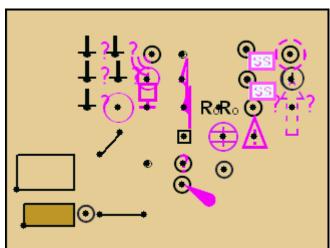
Location	32°31'17.24"S 60°49'28.28"E	S57 Encoding	LIGHTS(P)	LITCHR=6,7,9,10,11,28 SIGGRP=UNKNOWN SIGPER=UNKNOWN	
Screen Capture					
Expected test results	T1776: 6 warnings "'siggrp' does not ag	gree with given 'lito	chr' in Light" must l	be triggered.	
Secondary errors	None.				
Data and Name	AA500024	C FO to at No	T4 770	T	
Dataset Name	AA500021	S-58 test No.	T1779	Type E	
S-58 Description	Check that no area DEPARE object has DRVAL1 equal to DRVAL2.				
Test Case No. 1	Captured DEPARE with DRVAL1 and DRVAL2 both are same value. DRVAL1=18.2				
Location	32°31'58.45"S 60°49'56.93"E	S57 Encoding	DEPARE(A)	DRVAL2=18.2	
Screen Capture					
Expected test results	T1779: An error "'drval1' equal to 'drva	•			
Secondary errors	T1771: A warning "Edge depth contour related to the features objects created	·	ond to depth area l	ımıt" must be triggered	
	T	1	I =====	T_ T	
Dataset Name	AA500021	S-58 test No.	T0507	Type E	
S-58 Description	Check for all mandatory attributes.				
Test Case No. 1	Created objects as shown below in 4 th	column without ma	andatory attribute	S.	

FERRYT(L,A) FOGSIG(P) FSHZNE(A) GATCON(P,L,A) HRBFAC(P,A) ICEARE(A) LITVES(P) LIGHTS(P) LITFLT(P) LNDELV(L,P) LNDMRK(A,P,L) LNDRGN(P,A) LOCMAG(P,A,L) MAGVAR(P,L,A) MARCUL(P,A,L) MOFFAC(P,L,A) MARCUL(P,A,L) MOFFAC(P,L,A) NAVLNE(L) OBSTRN(P,L,A) PIPOHD(L) PRCARE(A,P) PYLONS(P, A) RADLNE(L) RCRTCL(L)	Location	32°31'24.04"S 60°50'09.53"E 32°31'22.18"S 60°49'35.56"E	S57 Encoding	FOGSIG(P) FSHZNE(A) GATCON(P,L,A) HRBFAC(P,A) ICEARE(A) LITVES(P) LIGHTS(P) LITFLT(P) LNDELV(L,P) LNDMRK(A,P,L) LNDRGN(P,A) LOCMAG(P,A,L) MAGVAR(P,L,A) MARCUL(P,A,L) MORFAC(P,L,A) NAVLNE(L) OBSTRN(P,L,A) PIPOHD(L) PRCARE(A) PRDARE(A,P) PYLONS(P, A) RADLNE(L)	
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RDOCAL(P,L)
RECTRC(A,L)
RESARE(A)
RTPBCN(P)
SBDARE(L,P,A)
SEAARE(A,P)
SISTAT(P)
SISTAW(P)
SMCFAC(A,P)
STSLNE(L)
SWPARE(A)
TESARE(A)
TOPMAR(P)
TSSLPT(A)
TWRTPT(A)
UWTROC(P)
VEGATN(P,A,L)
WATTUR(L,P,A)
WRECKS(P,A)
M_ACCY(A)
M_COVR(A)
M_CSCL(A)
M_HOPA(A)
M_NSYS(A)
M_QUAL(A)
M_SDAT(A)
M_VDAT(A)
T_TIMS(P,A)
T_NHMN(P,A)
T_HMON(P,A)
TS_FEB(P)
TS_PAD(P)
TS_PNH(P,A)
TS_PRH(P,A)
TS_TIS(P,A)
ARCSLN(A)
ASLXIS (L) NEWOBJ
(A,L,P)



Screen Capture



Expected test results

T0507: 223 errors "mandatory attributes not found" must be triggered.

T0509: Two warnings "meaningless object Depth area" must be triggered related to the feature objects created

T0509: A warning "Mandatory attribute Orientation (ORIENT) is not specified for Deep water route part (DWRTPT) object. Attribute is meaningless without a value." must be triggered related to the feature object created.

T0509: A warning "Mandatory attribute Depth range value 1 (DRVAL1) is not specified for Dredged area (DRGARE) object. Attribute is meaningless without a value" must be triggered related to the feature object created.

Secondary errors

T0509: A warning "Mandatory attribute Value of depth contour (VALDCO) is not specified for Depth contour (DEPCNT) object. Attribute is meaningless without a value" must be triggered related to the feature object created.

T0509: A warning "At least one of the following mandatory attributes is not specified for object Depth area (DEPARE): Depth range value 1 (DRVAL1) or Depth range value 2 (DRVAL2). Attributes are meaningless without a value" must be triggered related to the feature object created.

T0509: A warning "Mandatory attribute Nationality (NATION) is not specified for Custom zone (CUSZNE) object. Attribute is meaningless without a value" must be triggered related to the feature

object created.

T0509: A warning "Mandatory attribute Elevation (ELEVAT) is not specified for Land elevation (LNDELV) object. Attribute is meaningless without a value" must be triggered related to the feature object created.

T0509: A warning "Mandatory attribute Tidal stream - panel values (TS_TSP) is not specified for Tidal stream panel data (TS_PAD) object. Attribute is meaningless without a value" must be triggered related to the feature object created.

T0509: A warning "Mandatory attribute Nationality (NATION) is not specified for Territorial sea area (TESARE) object. Attribute is meaningless without a value" must be triggered related to the feature object created.

T0509: A warning "Mandatory attribute Nationality (NATION) is not specified for Continental shelf area (COSARE) object. Attribute is meaningless without a value" must be triggered related to the feature object created.

T0509: A warning "Mandatory attribute Nationality (NATION) is not specified for Contiguous zone (CONZNE) object. Attribute is meaningless without a value" must be triggered related to the feature object created.

T0509: A warning "Mandatory attribute Nationality (NATION) is not specified for Archipelagic Sea Lane Axis (ASLXIS) object. Attribute is meaningless without a value" must be triggered related to the feature object created.

T0509: A warning "Mandatory attribute Orientation (ORIENT) is not specified for Deep water route centerline (DWRTCL) object. Attribute is meaningless without a value" must be triggered related to the feature object created.

T0509: A warning "Mandatory attribute Nationality (NATION) is not specified for Archipelagic Sea Lane (ARCSLN) object. Attribute is meaningless without a value" must be triggered related to the feature object created.

T0509: A warning "Mandatory attribute Depth range value 1 (DRVAL1) is not specified for Swept area (SWPARE) object. Attribute is meaningless without a value" must be triggered related to the feature object created.

T0509: A warning "At least one of the following mandatory attributes is not specified for object New Object (NEWOBJ): Object Class Definition (CLSDEF) or Object Class Name (CLSNAM). Attributes are meaningless without a value" must be triggered related to the feature object created.

T0509: A warning "Mandatory attribute Value of magnetic variation (VALMAG) is not specified for Magnetic variation (MAGVAR) object. Attribute is meaningless without a value" must be triggered related to the feature object created.

T0509: Two warnings "Mandatory attribute Orientation (ORIENT) is not specified for Recommended traffic lane part (RCTLPT) object. Attribute is meaningless without a value" must be triggered related to the feature object created.

T0509: Two warnings "Mandatory attribute Nationality (NATION) is not specified for Straight territorial sea baseline (STSLNE) object. Attribute is meaningless without a value" must be triggered related to the feature object created.

T0509: A warning "Mandatory attribute Nationality (NATION) is not specified for Fishery zone (FSHZNE) object. Attribute is meaningless without a value" must be triggered related to the feature object created.

T0509: A warning "Mandatory attribute Nationality (NATION) is not specified for Exclusive economic zone (EXEZNE) object. Attribute is meaningless without a value" must be triggered related to the feature object created.

T0566: Three warnings "This use of NEWOBJ is forbidden unless it has been approved by an IHO ENC Encoding Bulletin" must be triggered related to the feature object created.

T0562: Three warnings "Check for any NEWOBJ object, that at least one of the attributes INFORM or TXTDSC contains the name of the feature object. The text must commence with the approved object class name of the feature (New Object)" must be triggered related to the feature object created.

T0508: An error "Check that COLPAT is encoded for every object (except LIGHTS) with more than one COLOUR. Check that no object with a value for COLPAT has only one COLOUR" must be triggered related to the feature object created.

T1558: Two warnings "If the feature is a T_NHMN, then the value of T_MTOD should be 3 [height and time difference non-harmonic method]" must be triggered related to the feature object created.

T1560: Two warnings "If the feature is a TS_PRH, then the value of T_MTOD should be 1 [simplified harmonic method of tidal prediction] or the value of T_MTOD should be 2 [full harmonic method of tidal prediction]" must be triggered related to the feature object created.

T1561: Two warnings "If the feature is a TS_PNH, then the value of T_MTOD should be 3 [height and time difference non-harmonic method]" must be triggered related to the feature object created.

T1797: Two warnings "the object vegatn cannot be displayed in ECDIS" must be triggered related to the feature object created.

T1797: A warning "the object prdare cannot be displayed in ECDIS" must be triggered related to the feature object created.

T1797: Two warnings "the object bridge cannot be displayed in ECDIS" must be triggered related to the feature object created.

T1671: An error "line 'depare' shares geometry with identical area 'depare'" must be triggered related to the feature object created.

T1726: An error "Edge is open border of 'm_nsys' coverage" must be triggered related to the feature object created.

T1765: Three warnings "Edge is open border of 'm_qual' coverage" must be triggered related to the feature object created.

T0554: A warning "Edge is shared by M_COVR with CATCOV=1 and has no TG1 object" must be triggered related to the feature object created.

T0519: An error "Check that all group 1 areas are covered by M_COVR areas with CATCOV=1 without gaps or overlaps" must be triggered related to the feature object created.

T01557: An error "Check that all T_HMON objects have a value of (1) or (2) for the attribute T_MTOD" must be triggered related to the feature object created.

T01729: Four warnings "If the feature is a BOYCAR, then the value of BOYSHP should be 4 [pillar] or the value of BOYSHP should be 5 [spar (spindle)]

If the feature is a BOYISD, then the value of BOYSHP should be less than 6 [barrel (tun)] If the feature is a BOYSAW, then the value of BOYSHP should be greater than 2 [can (cylindrical)] If the feature is a BOYSAW, then the value of BOYSHP should be less than 6 [barrel (tun)]" must be triggered related to the feature object created.

T1512: An error "spatial conflict between 'depare' and meta object 'm_sdat'" must be triggered related to the feature object created.

T1657: A warning "Check for any UWTROC object that the combination of attribute values corresponds to the following table:

VALSOU	QUASOU WATLEV	TECSOU	/SOUACC
unknown	2 or undefined	====== 3, 4 or 5	undefined
unknown	2 or undefined	unknown undefine	ed
< 0	1, 3, 4, 6, 8, 9 or undefined	4	any value
< 0	7	4	undefined
0	1, 3, 4, 6, 8, 9 or undefined	5	any value
0	7	5	undefined
> 0	1, 3, 4, 6, 8, 9 or undefined	3	any value
> 0	7	3	undefined

Enter valid values for VALSOU, QUASOU, WATLEV, TECSOU, and SOUACC. must be triggered related to the feature object created.

T1669: A warning "Check for any OBSTRN object that the combination of attribute values corresponds to the following table:

VALSOU	WATLEV	QUASOU TECSOL	J/SOUACC HEIGHT	
===== unknown	===== 3,4,5 or	===== 2 or undefined	undefined	undefined
	unknown			
unknown	1 or 2	undefined	undefined	any value
unknown	7	undefined	undefined	undefined
< 0	4	1,3,4,6,8,9 or undefined	any value	undefined

< 0	4	7	undefined	undefined
0	5	1,3,4,6,8,9 or undefined	any value	undefined
> 0	3	1,3,4,6,8,9 or undefined	any value	undefined
> 0	3	7	undefined	undefined

Enter valid values for VALSOU, WATLEV, QUASOU, TECSOU, SOUACC and HEIGHT" must be triggered related to the feature object created.

T1719: A warning "Check for any MARCUL object that the combination of attribute values corresponds to the following table:

WATLEV VALSOU	QUASOL	J
====== 1, 2, 5 or 7	undefined	undefined
4	< 0	1,3,4,6,7,8,9 or undefined
4	undefined or unknown	2 or undefined
5	0	1,3,4,6,8,9 or undefined
5	undefined or unknown	2 or undefined
3	> 0	1,3,4,6,7,8,9 or undefined
3	unknown 2 or und	lefined
unknown	unknown 2 or und	lefined

Enter valid values for WATLEV, VALSOU and QUASOU." must be triggered related to the feature object created.

T1663: A warning "Check for any WRECKS object that the combination of attribute values corresponds to the following table:

VALSOU =====	WATLEV =====	CATWRK QUASO	U HEIGHT	TECSOU/SOUACC
====	=======	100	0 10 1	1.61
undefined	3 or unknown	1,2,3 or unknown	2 or undefined	undefined undefined
undefined	4 or 5	any value2 or und	defined undefin	ed undefined
undefined	1 or 2	4,5 or unknown	undefined	any valueundefined
unknown	3 or unknown	1,2,3 or not encoded	2 or undefined	undefined undefined
unknown	4 or 5	any value2 or und	defined undefin	ed undefined

unknown	1 or 2	4, 5 or not encoded	undefined	any valu	ueundefined
< 0	4	any value7	ι	undefined	undefined
< 0	4	any value1,3,4,6, or undefined	8,9 ι	undefined	any value
0	5	any value1,3,4,6,	8,9 ເ or undefin	undefined ed	any value
> 0	3	1,2,3 or undefined	7	undefin	ed undefined
> 0	3	1,2,3 or undefined	1,3,4,6,8,9 or undefin		ed any value
	es for VALSOU, Waated to the featur		QUASOU, HI	EIGHT, TECSOU	and SOUACC" must

S58 Test	Description
504	Check for all prohibited object classes for ENC.
73	Check that no attribute value contains a leading or a trailing space, and that no attribute of type List contains any space.
523	Check that HDAT = 2 [WGS 84]

Dataset Name	AA500022	S-58 test No.	T0504	TYPE	E		
S-58 Description	Check for all prohibited object classes for ENC.						
Test Case No. 1	Captured prohibited object classes for ENC						
Location	32°31'29.49"S 60°47'18.91"E	S57 Encoding	\$AREAS(A) \$LINES(L) \$TEXTS(P) \$CSYMB(P) \$COMPS(P) C_STAC SQUARE(A) RIVBNK(L) CANBNK(L) LAKSHR(L) M_HDAT(A) M_PROD(A) M_UNIT(A)				
Screen Capture	M_ONIT(A)						
Expected test results	T0504: An error "prohibited object Horizontal datum of data" must be triggered. T0504: An error "prohibited object Production information" must be triggered T0504: An error "prohibited object Compass" must be triggered T0504: An error "prohibited object Stacked on/stacked under" must be triggered T0504: An error "prohibited object Cartographic area" must be triggered T0504: An error "prohibited object Cartographic line" must be triggered T0504: An error "prohibited object Square" must be triggered T0504: An error "prohibited object River bank" must be triggered T0504: An error "prohibited object Lake shore" must be triggered T0504: An error "prohibited object Canal bank" must be triggered T0504: An error "prohibited object Units of measurement of data" must be triggered T0504: An error "prohibited object Cartographic symbol" must be triggered						
Secondary Errors	T0504: An error "prohibited object Text" must be triggered T0545: An error "Check that each object has a valid object class code as defined by the Object Catalogue and S-57 Supplement No 2." must be triggered related to the feature objects created.						
	AA500022	S-58 test No.	T0073				

S-58 Description	Check that no attribute value contains a leading or a trailing space, and that no attribute of type List contains any space.				
Test Case No. 1	BUISGL captured with leading space i	n OBJNAM and trail	ing space in INF	ORM.	
Location	32°31'44.88"S 60°47'51.76"E	S57 Encoding	BUISGL	OBJANM= TEST INFORM=TEST	
Screen Capture	33	73			
Expected test results	T0073: A warning "unnecessary space T0073: A warning "unnecessary space				
Secondary Errors	None.				
Test Case No. 2	ACHARE point captured with space in	CATACH.	_ _		
Location	32°31'47.19"S 60°47'53.78"E	S57 Encoding	ACHARE	CATACH=1 1	
Screen Capture	12	13,			
Expected test results	T0073: A warning "Forbidden 'space' symbol in attribute field of type 'list'" must be triggered.				
Secondary Errors	None.				
Dataset Name	AA500022	S-58 test No.	T0523	TYPE E	
S-58 Description	Check that HDAT = 2 [WGS 84]		1 5		
Test Case No. 1	HDAT changed to 4 (Potsdam Datum)) .			
Location	-	S57 Encoding	DSPM	HDAT=Potsdam Datum	

	SID Field DSPM Field DSSI Field	Geodetic Paran
	Title	Value
	Horizontal geodetic datum [HDAT]	Potsdam Datum
	Vertical datum [VDAT]	Mean high wate
Screen Capture	Sounding datum [SDAT]	Mean lower low
Screen capture	Compilation scale of data [CSCL]	20000
	Units of depth measurement [DUNI]	metres
	Units of height measurement [HUNI]	metres
	Units of positional accuracy [PUNI]	metres
	Coordinate units [COUN]	LL - Latitude / Lo
	Coordinate multiplication factor [C	
	3-D (sounding) multiplication factor	10
Expected test results	T0523: An error "illegal value of D	DSPM:HDAT" m
Secondary Errors	None	

S58 Test	Description
505	Check for mandatory meta object classes.
512	Check for numeric attribute values (i.e. of type float ('F') or integer('I')) padded with non-significant zeroes.
535	Check that the CRC value computed on the received file is the same as the CRC value transmitted.
545	Check that each object has a valid object class code as defined by the Object Catalogue and S-57 Supplement No 2.

Dataset Name	AA500023	S-58 test No.	T0505	Туре	E	
S-58 Description	Check for mandatory meta object classes.					
Test Case No. 1	Entire dataset Meta objects M_COVR, M_QUAL	& M_NYS objects	are not capture	ed.		
Location	32°32'08.26"S 60°44'51.13"E	S57 Encoding				
Screen Capture						
Expected test results	T0505: An error "mandatory object 'm_covr' not found" must be triggered. T0505: An error "mandatory object 'm_qual' not found" must be triggered. T0505: An error "mandatory object 'm_nsys' not found" must be triggered.					
Secondary errors	T1726: An error "The entire area of the data set is covered by one or more M_NSYS objects, with a value for the attribute MARSYS indicating the buoyage system in operation" must be triggered related to the feature objects created. T1565: Three warnings "open border of 'Indare'" must be triggered. T0011: 47 Errors "edge is not shared by 'm_covr' with 'coverage available', but has USAG=C in object DEPARE" must be triggered. T0549: 39 error 'object is not properly covered by M_QUAL" must be triggered. T0548: 6 errors "A geographic feature must be covered by an M_COVR with CATCOV = 1 [coverage]" must be triggered. T0042: An error "Check that VE edges linked to Group 1 objects appear twice with different ORNT values, or are linked to objects M_COVR with CATCOV = 1 [coverage available]" must be triggered.					
Dataset Name	AA500023	S-58 test No.	T0512	Туре	E	
S-58 Description	Check for numeric attribute values (i.e. of ty significant zeroes.	1	l .			
Test Case No. 1	Sounding captured with attribute values.					
Location	32°32'19.96"S 60°44'32.98"E	S57 Encoding	SOUNDG(P)	AGENCY= 00000000		

Screen Capture	24 ₉ 24 ₉ 24 ₈						
Expected test results	T0512: An error "Attribute value contains non-si						
Secondary errors	T0547: An error "attribute 'agency' not allowed in Sounding" must be triggered related to the feature objects created.						
						T	
Dataset Name	AA500023	S-58 test No	٠.	T0535	Туре	Е	
S-58 Description	Check that the CRC value computed on the received file is the same as the CRC value transmitted.						
Test Case No. 1	N/A						
Location	N/A	S57 Encoding CATALOG.0					
Screen Capture	N/A						
Function test results	T0535: An error "CRC of the data file is not equal to CRC subfield of catalog record" must be triggered.						
Expected test results	·				d" must be	9	
Secondary errors	·				d" must be	2	
	triggered.				d" must be	9	
	triggered.	S-58 test No		T0545	Type	E	
Secondary errors	triggered. None	S-58 test No		T0545	Туре	E	
Secondary errors Dataset Name	triggered. None AA500023 Check that each object has a valid object class co	S-58 test No ode as defined by		T0545	Туре	E	

Screen Capture	21 ₂	
Expected test results	T0545: An error "Unknown object label OBJL" must be triggered.	
Secondary errors	T0021: An error "Check that all vector record pointer (VRPT) fields are pointed to by an edge vector record" must be triggered related to the feature objects created. T0028: An error "Wrong number of records in DSSI" must be triggered related to the feature object created. T0090: Four warnings "Unexpected tag in DDR directory" must be triggered related to the feature object created. T0504: One additional error "Object class code does not exist for the ENC product specification" must be triggered related to the feature objects created.	

S58 Test	Description			
68	Check if there is an update to an object without the corresponding text/graphic file.			
	·			
	TS_PAD: TS_FSP DWRTPT: ORIENT DWRTCL: ORIENT M_NSYS: MARSYS or ORIENT RCTLPT: ORIENT Remark: For these objects, the above mandatory attributes are meaningless without values.			

Dataset Name	AA500024	S-58 test No.	T0068		Туре	W		
S-58 Description	Check if there is an update to an object without the corresponding text/graphic file.							
Test Case No. 1	Captured BUISGL with TXTDSC and PICREP.							
Location	32°32'13.38"S 60°41'26.40"E	°32'13.38"S 60°41'26.40"E						
Screen Capture								
Expected test results	T0068: A warning "external file for 'pi T0068: A warning "external file for 'tx							
Secondary error	None.							
Dataset Name	AA500024	S-58 test No.	T0509		Туре	w		
S-58 Description	Check for all the following cases that ARCSLN: NATION ASLXIS: NATION CTNARE: INFORM or TXTDSC DEPARE: DRVAL1 and DRVAL2 DRGARE: DRVAL1 NEWOBJ: CLSDEF and CLSNAM SWPARE: DRVAL1 DEPCNT: VALDCO LNDELV: ELEVAT MAGVAR: VALMAG CONZNE: NATION COSARE: NATION CUSZNE: NATION EXEZNE: NATION FSHZNE: NATION TESARE: NATION TESARE: NATION M_COVR: CATCOV M_CSCL: CSCALE M_QUAL: CATZOC M_SDAT: VERDAT TS_PAD: TS_TSP DWRTPT: ORIENT DWRTCL: ORIENT M_NSYS: MARSYS OR ORIENT	t the mandatory a	attribute has a value					

	RCTLPT: ORIENT Remark: For these objects, the abo	ove mandatory attri	butes are meaningle	ess without values.				
Test Case No. 1	Captured all above said objects.							
Location	32°31'30.67"S 60°43'09.38"E	S57 Encoding	ARCSLN (A) ASLXIS (L) CTNARE (P,A) DEPARE (L,A) DRGARE (A) NEWOBJ (P,L,A) SWPARE (A) DEPCNT (L) LNDELV (P,L) MAGVAR (P,L,A) CONZNE (A) COSARE (A) CUSZNE (A) EXEZNE (A) FSHZNE (A) STSLNE (L) TESARE (A) M_COVR (A) M_COVR (A) M_CSCL (A) M_CSCL (A) M_QUAL (A) M_SDAT (A) M_VDAT (A) TS_PAD (P,A) DWRTPT (A) DWRTCL (L) M_NSYS (A) RCTLPT (P,A)	NATION=UNKNOWN NATION=UNKNOWN INFORM=UNKNOWN INFORM=UNKNOWN TXTDSC=UNKNOWN DRVAL1=UNKNOWN DRVAL1=UNKNOWN CLSDEF=UNKNOWN CLSNAM=UNKNOWN DRVAL1=UNKNOWN VALDCO=UNKNOWN VALDCO=UNKNOWN VALMAG=UNKNOWN NATION=UNKNOWN NATION=UNKNOWN NATION=UNKNOWN NATION=UNKNOWN NATION=UNKNOWN NATION=UNKNOWN NATION=UNKNOWN CATCOV=UNKNOWN CATCOV=UNKNOWN CATZOC=UNKNOWN VERDAT=UNKNOWN VERDAT=UNKNOWN ORIENT=UNKNOWN ORIENT=UNKNOWN ORIENT=UNKNOWN ORIENT=UNKNOWN ORIENT=UNKNOWN ORIENT=UNKNOWN				
Screen Capture								
Expected test results	T0509: 42 warnings "value of 'xxxx							
Secondary error	object created.	T0074: An error "depth contour value does not agree with surrounding 'depare'" must be triggered						

T0548: An error "Edge is open border of 'm_covr', but not on the chart borders" must be triggered related to the object created.

T1726: An error "Check that the entire area of the data set is covered by one or more M_NSYS objects, with a value for the attribute MARSYS indicating the buoyage system in operation" must be triggered related to the object created.

T0554: An error "Edge is shared by M_COVR with CATCOV=1 and has one TG1 object" must be triggered related to the object created.

T0519: An error "Check that all group 1 areas are covered by M_COVR areas with CATCOV=1 without gaps or overlaps" must be triggered related to the objects created.

T1771: A warning "Check for any edge which is shared by a depth contour (VALDCO) and two area depth areas (DRVAL1, DRVAL2), but by no line depth area, that: (Maximum value of DRVAL2) > VALDCO > (Minimum value of DRVAL1), and (Minimum value of DRVAL2) = VALDCO." must be triggered related to the object created.

T0566: Three warnings "Check that there is no NEWOBJ object in the data that has not been approved by an IHO ENC Encoding Bulletin." must be triggered related to the objects created.

T0562: Three errors "Check for any NEWOBJ object, that at least one of the attributes INFORM or TXTDSC contains the name of the feature object. The text must commence with the approved object class name of the feature (New Object)." must be triggered related to the objects created.

T0527: Two errors "Filename (no filename) referenced by feature is not in accordance with ENC Product Specification: Invalid file name format" must be triggered related to the objects created.

T1779: An error "If the feature is a DEPARE and the spatial type is area, then the value of DRVAL1 must not be the value of DRVAL2" must be triggered.

Remarks

"xxxxxx" indicates respective attribute acronym.

Description						
Check for any UWTROC object that the combination of attribute values corresponds to the following table.						
"Undefined" means that no value is encoded. "any value" means, - for mandatory attribute: any predefined value or unknown value, - For optional attribute: any predefined value or undefined.						
For each specific case, when QUASOU and TECSOU (attributes of type List) are encoded, they should contain one or more values Selected from the lists of allowed values given in the table. In addition, other attributes which do not appear in the table may be Encoded.						
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Dataset Name	AA400001		S-58 test No.	T1657	Туре	W
	Check for any UWTROC object that the combination of attribute values corresponds to the following table. "Undefined" means that no value is encoded. "any value" means,					
S-58 Description	- For optional For each special should contain	ory attribute: any predefined value of attribute: any predefined value of cific case, when QUASOU and TE in one or more values Selected from their attributes which do not appe	or undefined. CSOU (attributes of com the lists of allo	of type List) ar owed values gi y be Encoded.	ven in the	
	VALSOU	QUASOU	WATLEV		CSOU UACC	
	Unknown	2 or undefined	3, 4 or 5		Undefined	
	Unknown	2 or undefined	Unknown	Und	efined	
	< 0	1, 3, 4, 6, 8, 9 or undefined	4		value	
		7	4		efined	_
	0	1, 3, 4, 6, 8, 9 or undefined	5		value	4
	> 0	7	5 3		efined	4
		1, 3, 4, 6, 8 or 9 or undefined 7	3		any value undefined	
	Captured UW	TROC (27124) objects that the co				
Test Case No. 1	-	the above table.				
Location	32°34'06.17"S	60°50'55.55"E	S57 Encoding	UWTROC(P)		
Screen Capture	32 34 00.17 3 00 303.53 E					
Expected test results	T1657: 35129 warnings "meaningless value of 'quasou' in Underwater/awash rock" must be					
Secondary errors	triggered. T2000: 24526 warnings "meaningless value of 'watlev' in Underwater/awash rock" must be triggered. T0507: 8712 warnings "mandatory 'valsou' not found in Underwater/awash rock" must be triggered.					
Dataset Name	AA400001		S-58 test No.	T0502	Туре	Е
=				1	, , , .	1

S-58 Description	Check that the dataset file contains no more than 5 megabytes of data.				
Test Case No. 1	Data captured more than 5 megabytes of data.				
Location	N/A S57 Encoding				
Screen Capture	N/A				
Expected test results	T0502: Opening error "Cell file is too big" must be triggered.				
Secondary errors	None.				

S58 Test	Description
1792	Check that no cell crosses the 180° meridian.

Dataset Name	AA400025	S-58 test No.	T1792	Туре	W			
S-58 Description	Check that no cell crosses the 180° meridian.							
Test Case No. 1	Cell created at 180E.							
Location	32°40'36.12"S 180°00'00.00"E							
Screen Capture	30 34 24 ₃ 26 ₆ 43 42	16,						
Expected test results	T1792: A warning "Current cell crosses	the 180 meridian"	must be triggered.					
Secondary errors	ts T1792: A warning "Current cell crosses the 180 meridian" must be triggered. Following errors/warnings may be triggered when running tests on the dataset. However it may vary depending on the S58 testing tool: T0501: An error "dataset is not rectangular" must be triggered. T0078: An error "Check for any area object that no boundary crosses itself" must be triggered. T0001: 228 warnings "pairs of vertexes are identical" must be triggered. T0077: An error "depth contour crosses another depth contour" must be triggered. T1768: 6 warnings "Check for any SOUNDG object, that any depth value is greater than DRVAL1 of the overlying DEPARE or DRGARE object" must be triggered. T0519: Eight errors "Check Group 1 coverage and consistency" must be triggered. T0011: 18 Errors "edge is not shared by 'm_covr' with 'coverage available', but has USAG=C in object" must be triggered. T0554: 6 Errors "edge is shared by M_COVR with CATCOV=1 and has no TG1 object" must be triggered. T0549: Four errors "Check that all DEPARE and DRGARE objects are covered by M_QUAL objects without gaps or overlaps" must be triggered. T0548: An error "Check that M_COVR meta objects provide exhaustive non-overlapping coverage of the whole cell" must be triggered. T0042: An error "Check that VE edges linked to Group 1 objects appear twice with different ORNT values, or are linked to objects M_COVR with CATCOV = 1 [coverage available]" must be triggered.							

T1726: An error "Check that the entire area of the data set is covered by one or more M_NSYS objects, with a value for the attribute MARSYS indicating the buoyage system in operation" must be triggered.

T0016: An error "Check that area outer boundaries are encoded clockwise" must be triggered.

T0017: An error "Check that area inner boundaries are encoded counter clockwise" must be triggered.

T0080: An error" Check that no area feature has incorrect topology. At least one of the following has been detected:

- 1. An inner ring is within or overlaps another inner ring;
- 2. An inner ring is outside of or overlaps the outer ring; or
- 3. The outer ring is inside of an inner ring" must be triggered.

T0019: A warning "Check that all spatial edges which coincide with data limit borders (i.e. limits of M_COVR with CATCOV = 1 [coverage available]) are using USAG = 3 [Exterior boundary truncated by the data limit]" must be triggered.

T0042: An error "Check that VE edges linked to Group 1 objects appear twice with different ORNT values, or are linked to objects M_COVR with CATCOV = 1 [coverage available]" must be triggered.