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International Centre for Electronic Navigational Charts

VALSOU to 2 Decimal Places

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VALSOU to 2 Decimal Places

S-57 ENCs produced by IC-ENC members have started to contain values of VALSOU to 2 decimal places on dangers such as;

WRECKS, UWTROC and OBSTRN

VALSOU = 23.89

In 2017 IC-ENC amended its Errors Database to permit this encoding.

What do the current standards say? ……

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S-57 Attribute Catalogue

Indication:

Unit:	defined in the DUNI subfield of the DSPM record or in the DUNITS attribute of the M_UNIT meta object class, e.g. metre (m)
Resolution:	0.1 m or 0.1 fm or 0.1 ft

Format:

sxxxxx.xx

s:	sign, negative values only.

Examples:

18.2	for a sounding of 18.2 metres.
-2.4	for a drying height of 2.4 metres.

As shown above the attribute catalogue can be interpreted as permitting 1 decimal place based on the resolution field or 2 based on the format field.

S-58 6.1

	26a	For each subfield where the value is not within the range defined in the S-57 format description.	Subfield value does not conform to S-57 format specification.	Amend subfield value.	Part 3 (7.2.2.1) and (7.3)	C	
	26b	For each subfield value which is not within the legal range for attribute values (for attribute values of type "float", the resolution given in the format statement by the integer part (e.g. **XX**.X) must not be checked).	Subfield value outside of the permitted range for an attribute value.	Amend subfield value to permitted attribute value.	Appendix A, Chapter 2	E	
	27	For each subfield which is	Subfield not	Amend formatting of	Part 3 (7.2.2.2)	C	

Check 26b is the relevant S-58 check now an Error but was a Critical error in S-58 5.0.0.

S-52 Presentation Library

SNDFRM04 is the relevant S-52 CSP and this is clear about not rounding up so the resultant display in ECDIS is of the first decimal digit only

'SYMBOL_PREFIX' + 'C2'	Create symbol name: 'SYMBOL_PREFIX' + 'C2' (that is, SOUNDSC2' or 'SOUNDGC2'). Add this symbol to the 'List of symbols' to be presented.
DEPTH_VALUE < 0?	Is 'DEPTH_VALUE' less than zero meters?
'SYMBOL_PREFIX' + 'A1'	Create symbol name: 'SYMBOL_PREFIX' + 'A1' (that is, SOUNDSA1'). Add this symbol to the 'List of symbols' to be presented.
DEPTH_VALUE < 10?	Is 'DEPTH_VALUE' less than 10 meters?
DEPTH_VALUE digits representation algorithm 1	Isolate 'LEADING_DIGIT' of 'DEPTH_VALUE'. Set 'LEADING_DIGIT' to positive value. Create symbol name by adding '10' + 'LEADING_DIGIT' to 'SYMBOL_PREFIX' (for example 3.6 metres - isolate the '3' and create either 'SOUNDS13' or 'SOUNDG13'). Add this symbol name to the list of symbols to be presented. Isolate 'FRACTION' of 'DEPTH_VALUE' and multiply by 10. Truncate all digits after the decimal. Do not round up. Create symbol name by adding '50' + 'FRACTION' to 'SYMBOL_PREFIX' (for example 3.6 metres - isolate the '6' and create either 'SOUNDS56' or 'SOUNDG56'). Add this symbol name to the list of symbols to be presented.

S-101 1.0.0 DCEG

S-101 is clear that the real value may only be to one decimal place.

However now SOMF is 100 Soundings may be encoded to 2 DPs

27.184 value of sounding (VALSOU)

Value of sounding: IHO Definition: The value of the measurement of a sounding relative to the chart datum. (S-57 Edition 3.1, Appendix A – Chapter 2, Page 2.232, November 2000).

Attribute Type: Real

S-101 Annex A December 2018 Edition 1.0.0

Data Classification and Encoding Guide 607

Unit: Defined as an attribute in the ENC dataset metadata: metre (m)

Resolution: 0·1m

Format: sxxxxx.x
s: sign, negative values only

Examples: **18.2** for a sounding of 18·2 metres
-2.4 for a drying height of 2·4 metres

Remarks:
- A drying height is indicated by a negative value.

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S-101 and Data Quality

- If S-101 is amended to support 2 decimal places it may be necessary to constrain this to information where the quality is known to be very high

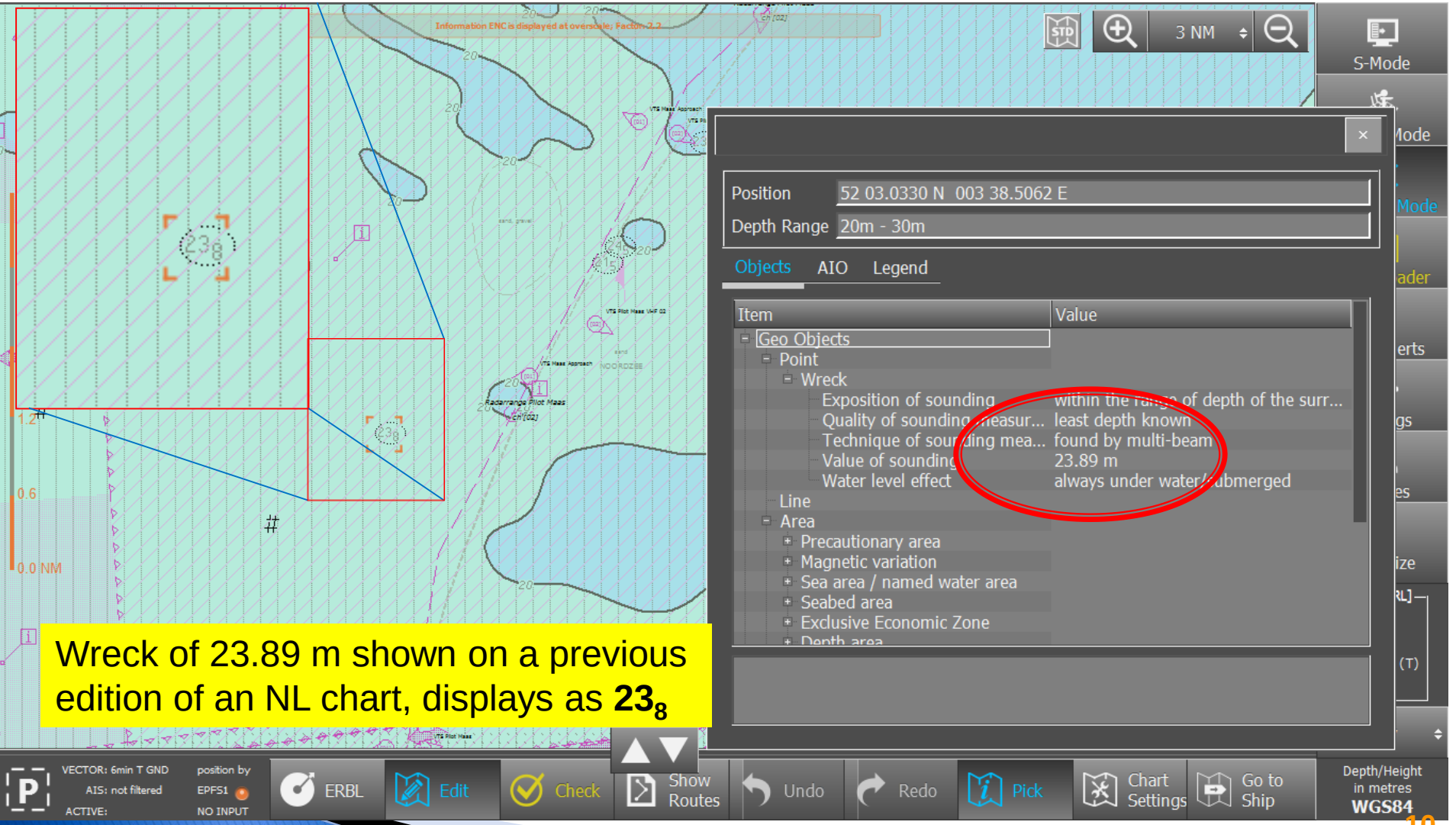
- A validation check may be required to enforce this

Validation Tools

- SevenCs Analyzer previously reported this error as VS57_ERR_ATT_FORMAT named AttributeFormat since 4.0.0

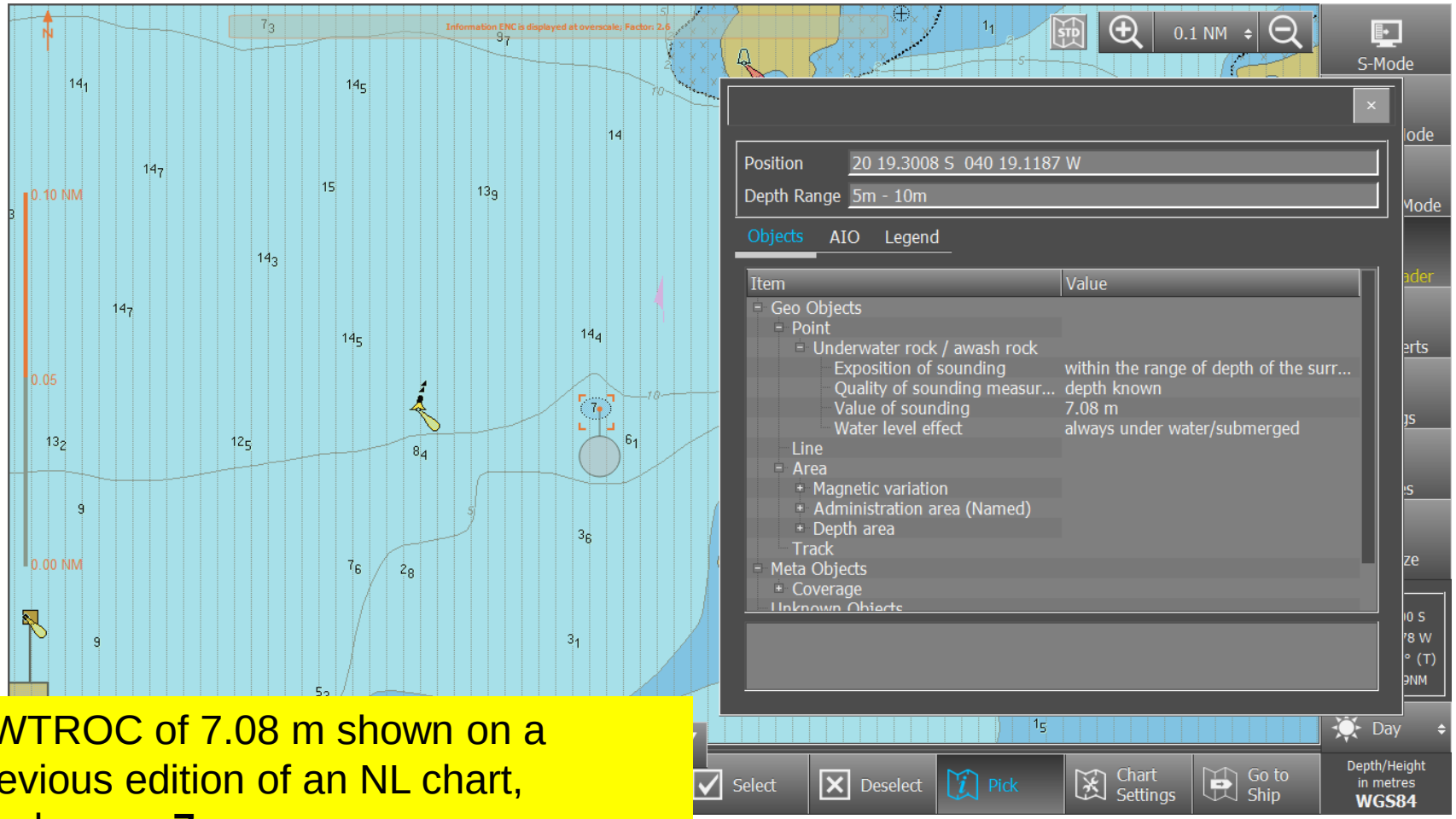
- dKart Inspector does not appear to report this scenario

Example 1



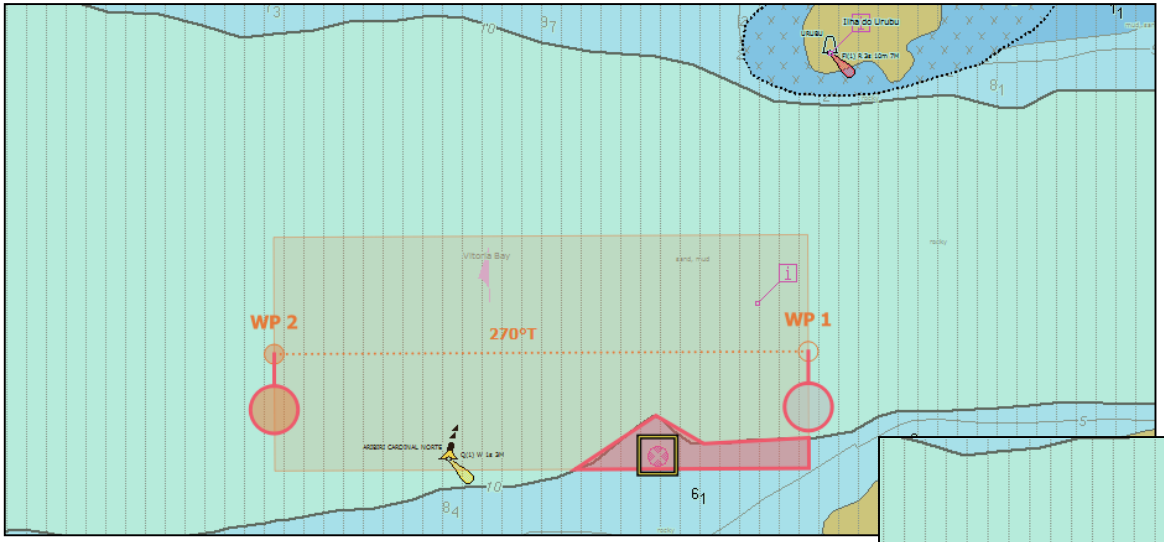
Wreck of 23.89 m shown on a previous edition of an NL chart, displays as 23_8

Example 2



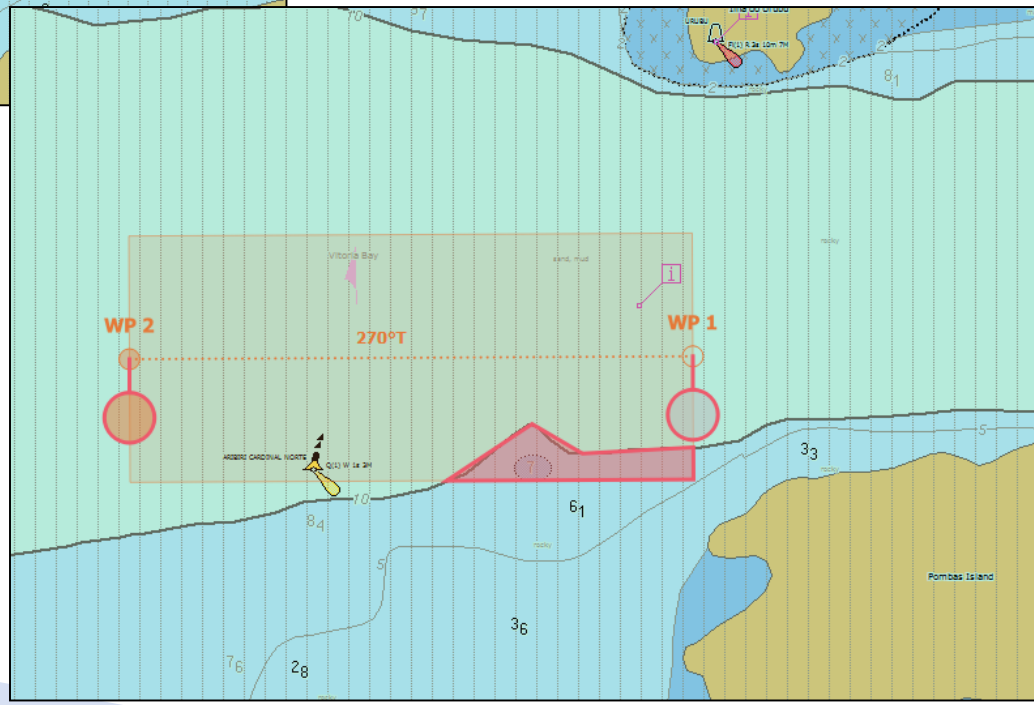
UWTROC of 7.08 m shown on a previous edition of an NL chart, displays as **7**

Example 2 Route Check



<< A route check with safety contour of 7.1 highlights the UWTROC as a danger

Not detected when a safety contour value of 7.05 is used>>



Discussion

- IC-ENC relaxed its policy on the basis that the data would not show a shoaler picture in ECDIS and to allow conversion to S-101 which supports 2 decimal places, the check was only an Error
- Also members expressed the wish to hold this resolution in their databases, some now seem to have moved to truncating the value upon export
- This could be an example of potential S-101 “precoding” to support efficient conversion, but S-101 may require a change to support this
- We cannot change the attribute catalogue but an FAQ could be issued to clarify the inconsistency
- The S-101 is invited to discuss and consider action for S-101 further consideration by the ENCWG may also be required

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