6th Meeting of the ENC Standards Maintenance Working Group

Report on S-57 Appendix B.1, Annex A – Use of the Object Catalogue for ENC

Agenda Item 09a

ENCWG6, Remote Meeting, 15-17 June 2021

DRAFT UOC EDITION 4.3.0 REVISIONS (1)

International Hydrographic Organization

- Clause 2.1.5: Request to make the guidance regarding the encoding of periodic dates more logical.

The depth, height and positional accuracy units in a data set must be metres. They must be given in the "Units of Depth Measurement" [DUNI], "Units of Height Measurement" [HUNI] and "Units of Positional Accuracy" [PUNI] subfields of the "Data Set Parameter" [DSPM] field.

The use of the meta object **M_UNIT** is prohibited.

2.1.5 Dates

When encoding dates using the attributes DATEND, DATSTA, SORDAT, SUREND and SURSTA the following values must apply in conformance to ISO 8601:1988.

- Full date CCYYMMDD
- No specific day required: CCYYMM
- No specific month required: CCYY

If it is required to encode periodic/recurring dates using the attributes PEREND and PERSTA the following values must apply in conformance to ISO 8601:1988.

- Full date CCYYMMDD
- No specific year required, same day each year: --MMDD
- No specific year required, same month each year: --MM

Notes: CCYY = calendar year; MM = month; DD = day.
In the last two values, the dashes (--) must be included.

Where the temporal attributes DATEND, DATSTA, PEREND or PERSTA have been encoded for any object that is the master component of a master/slave relationship, all other component objects within the relationship must not extend beyond the temporal attribute values encoded.

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Email from Christian 26/04/21: While reading the Conversion Document, I see that attribute CPDATE is listed in the UOC (§2.1.5) whereas it is prohibited in ENCs.

Probably to be noted for next edition...

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Deleted: , and no specific year, month or day is required,

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Moved down [1]: No specific year required, same day each year:→--MMDD¶
Full date→CCYYMMDDNo specific year required, same month each year:→--MM¶

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Change requested to make the guidance for format of periodic/recurring dates more logical (no year required). Refer to discussions for preparation of S-58 Edition 7.0.0.

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* Note: This revision also corrects the erroneous inclusion of attribute CPDATE (prohibited for ENC.

DRAFT UOC EDITION 4.3.0 REVISIONS (2)

- Clause 2.3: Add attribute PICREP to file reference attributes allowed to use the _ (underscore) character in the file name to correct an inconsistency.

which may not be suitable for viewing in ECDIS. It is up to the Producing Authority to determine the most suitable means of encoding a particular piece of text.

The exchange language must be English. Other languages may be used as a supplementary option. In general this means that, when a national language is used in the textual national attributes (NINFOM, NOBJNM, NPLDST), the English translation must also exist in the international attributes (INFORM, OBJNAM, PILDST).

Remarks:

- Clause 5.6.4 of S-57 Appendix B.1 – ENC Product Specification, specifies the file naming format for text and picture files. This is further clarified in the S-57 Maintenance Document (1.CI.37): "In order to conform with ISO 9660 level 1 file names must be composed of only upper case characters A to Z, digits 0 to 9 and _ (underscore). ….". It is therefore allowable to use the underscore character in the individual file code part for file names referenced by TXTDSC, NTXTDS and PICREP.
- Clause 5.4.1 of S-57 Appendix B.1 – ENC Product Specification, specifies the content of an ENC exchange set, including the option to include text files. The clause mandates the use of ASCII text as the format to be used for these files, but states additionally that "Files in other formats (including application files that may be used to manipulate text or picture files) may be included in an exchange set by private agreement between the producer and the receiver". Additionally, clause 5.6.4 also mandates the use of ASCII text file formats for text files, but states additionally "Files in other formats, provided through private agreements, should follow the same general naming convention and use the appropriate file extension to indicate their format".

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Email from IC-ENC (Tom R) 04/06/21.

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DRAFT UOC EDITION 4.3.0 REVISIONS (3)

International Hydrographic Organization

- Clause 5.4.2: Guidance for encoding of DEPARE associated with “hanging” depth contours [NOTE: Corresponding guidance has been approved and included in S-101 DCEG Edition 1.0.1].

5.4.2 Geometry of depth areas

Where areas are not closed on the source, it may be necessary to close these areas using edges without associated line objects. This is mandatory at the boundary of a cell (see Figure 5).

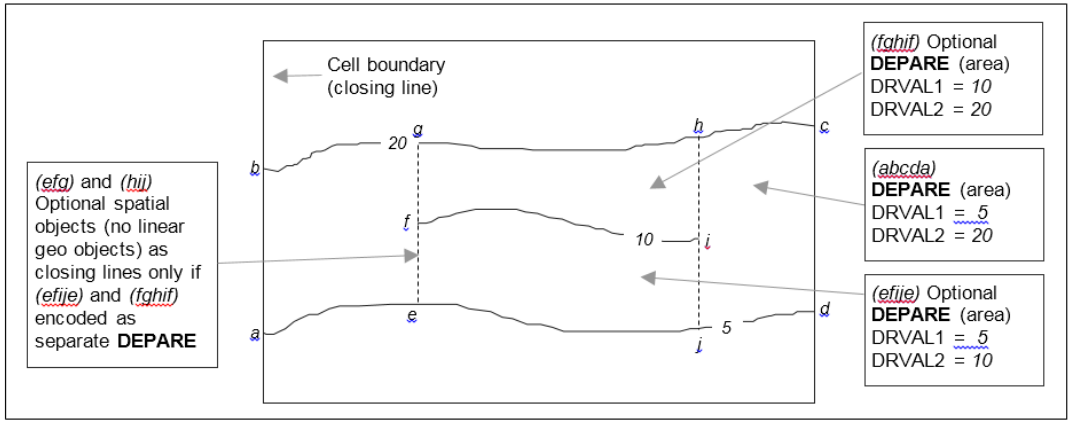

Figure 5 – Geometry of depth areas

Remarks:

- For short isolated sections of **DEPCNT** objects such as (*fi*), it is up to the Producing Authority to determine whether to encode the small areas (*efije*) and (*fghif*) as a separate **DEPARE** object of type area, or to encode only the line (*fi*) as a “floating” **DEPCNT** object within a single **DEPARE** area having attributes DRVAL1 = *5* and DRVAL2 = *20*. NOTE: In Figure 5, if the optional **DEPARE** objects are encoded, the depth area (*abcda*) will be split into two separate **DEPARE** objects (*abgea*) and (*jhcdj*), both having DRVAL1 = *5* and DRVAL2 = *20*.

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Figure and guidance amended to provide more logical indication of depth (long outstanding action).

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Changes to clauses 5.4.3 required to allow for more accurate indication of depth over isolated shoals and deeps. Changes in line with proposed new Checks to be included in S-58 Edition 7.0.0. Refer to proposals and discussions for preparation of S-58 Ed 7.0.0.

Teh Stand

DRAFT UOC EDITION 4.3.0 REVISIONS (4)

International Hydrographic Organization

- Clause 5.4.3: Guidance for encoding DEPARE for isolated shoals/deeps extended to include the option of indicating the shallowest/deepest depth within the area.

5.4.3 Use of attributes DRVAL1 and DRVAL2 for depth areas in general

For each depth area, DRVAL1 and DRVAL2 should be encoded with the values corresponding to the shallowest and deepest depths in that area. These values, except for the shallowest and deepest areas, should be chosen from the values of the depth contours encoded in the data set, however the values for isolated shallow or deep areas may be taken from the shallowest or deepest measured depth (see items 2 and 3 in Figure 6 below).

A drying area, within which a drying height is indicated without a true position, should be encoded using a **DEPARE** object, with DRVAL1 set to the value of the drying height and DRVAL2 set to a data set contour value (usually zero). Alternatively, DRVAL1 for the **DEPARE** may be set to –H (see NOTE (a)

associated with Figure 6 below for definition of H), with the drying height encoded using the attribute INFORM on the **DEPARE** object (for example *Dries 1.4*).

If a depth area is adjacent to a non-navigable waterway, a closing line (that is, no linear geo object) should be encoded at the boundary between navigable and non-navigable waters. See clause 5.4.8.

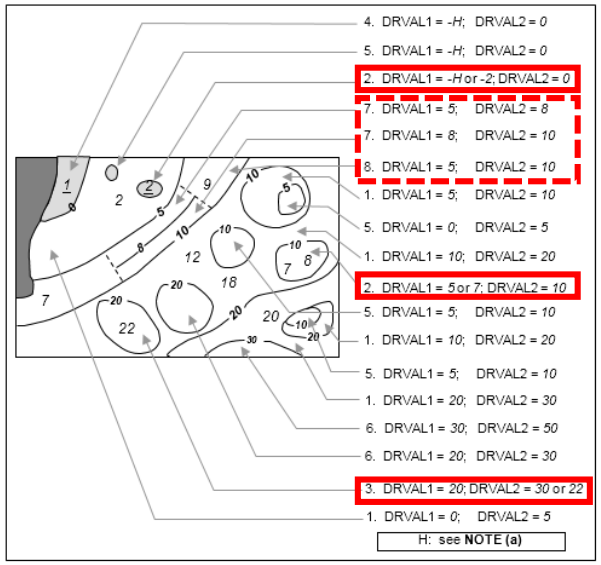

Figure 6 – Depth areas

NOTE (a): H = Height of the coastline datum above sounding datum, or a rounded value (for example (1) the value of the highest drying contour indicated on the source document; or (2) zero, if the coastline datum is the same as the sounding datum).

In the following clauses, the paragraph numbers refer to the item numbers in Figure 6. These clauses do not cover all encoding scenarios.

1. If the depth area is bounded by two or more depth contours:
   - DRVAL1 should take the value of the data set depth contour immediately shallower than the value of DRVAL2.
   - DRVAL2 should take the value of the deepest depth contour bounding the area.
2. If the depth area is only bounded by a one depth contour and the deepest depth is shown by a depth contour, and the shallowest depth is shown by a sounding (an isolated shoal area):
   - DRVAL1 should take the value of the data set depth contour immediately shallower than the value of the sounding or -H. However if the shallowest sounding within the area is considered to be the least depth of the shoal, DRVAL1 may be populated with the value of this sounding.
   - DRVAL2 should take the value of the depth contour.

   NOTE: In the case where the shallowest depth in the area is equal to the bounding depth contour, both DRVAL1 and DRVAL2 may be populated with the value of the depth contour.
3. If the depth area is only bounded by a one depth contour and the deepest depth is shown by a sounding and the shallowest depth is shown by a depth contour (an isolated deep area):
   - DRVAL1 should take the value of the depth contour.
   - DRVAL2 should take the value of the data set depth contour immediately deeper than or equal to the value of the sounding. However if the deepest sounding within the area is considered to be the deepest depth of the deep, DRVAL2 may be populated with the value of this sounding.
4. If the shallowest depth is defined by the coastline:
   - DRVAL1 should take the value of -H.
   - DRVAL2 should take the value of the shallowest data set depth contour bounding the area.
5. If the depth area is bounded by only one depth contour, contains no soundings, and is a shoal:
   - DRVAL1 should take the value of the data set depth contour immediately shallower than the value of the depth contour, or -H.
   - DRVAL2 should take the value of the depth contour.
6. If the depth area is bounded by only one depth contour, contains no soundings, and is a deep:
   - DRVAL1 should take the value of the depth contour.
   - DRVAL2 should take the value of the data set depth contour immediately deeper than the value of the depth contour.
7. If the depth area is bounded by an incomplete depth contour on one side (such as in incompletely surveyed area), and a complete depth contour on the other:
   - These areas are optional. See clause 4.5.2 and Figure 5.
8. If the depth area is bounded by complete depth contours, but contains an incomplete (floating) depth contour:
   - DRVAL1 should take the value of the shallowest depth contour.
   - DRVAL2 should take the value of the deepest depth contour.

   NOTE: Where the optional depth areas in paragraph 7 above are encoded, this will result in two discrete **DEPARE** objects, one on each side of the encoded optional depth areas. See clause 4.5.2 and Figure 5.

* NOTE: Corresponding guidance has been approved and included in S-101 DCEG Edition 1.0.1.

DRAFT UOC EDITION 4.3.0 REVISIONS (5)

International Hydrographic Organization

- Attribute list amended to reflect conditional mandatory encoding of attributes HEIGHT and VALSOU based on the value populated for attribute WATLEV.

6.2.2 Obstructions, foul areas and foul ground

If it is required to encode snags, stumps, wellheads, diffusers, cribs, fish havens, foul areas, foul grounds, booms, ice booms, sites of cleared platforms or ground tackle, it must be done using the object class **OBSTRN**.

Geo object: Obstruction (**OBSTRN**) (P,L,A)
Attributes: CATOBS CONDTN
EXPSOU - indicates objects with a "value of sounding" within or not within the range of depth of the surrounding area.
HEIGHT - only if WATLEV = *1* or *2*.
NATCON NATQUA NATSUR NOBJNM OBJNAM
PRODCT - only used for wellheads.
QUASOU - see table 6.3 below.
SOUACC - see use of the meta object **M_QUAL** (clause 2.2.3.1).
STATUS - *18* - existence doubtful.
TECSOU - see table 6.3 below.
VALSOU - only if WATLEV = *3*, *4* or *5*.
~~VERACC~~ ~~VERDAT~~
VERLEN - distance above the seabed.
WATLEV - see table 6.3 below.
INFORM NINFOM

Teh Stand
Email from IC-ENC (Tom R) 27/05/21. Change applied to be consistent with logical encoding requirements (refer also to MD8 – 2.Co.8).

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ENC Product Spec. – table 3.2:

OBSTRN	VALSOU	WATLEV					

S-57 MD8:

2.Co.8 Change the entry for OBSTRN to read:

Object Class	Attributes					
OBSTRN	WATLEV	At least one of:	VALSOU	HEIGHT		

ACTIONS REQUESTED OF ENCWG

- **Discuss** and **approve** the changes applied in Revision 4.3.0 of S-57 Appendix B.1, Annex A – *Use of the Object Catalogue for ENC*; or recommend further action as required.
- **Endorse** the submission of S-57 Appendix B.1, Annex A – *Use of the Object Catalogue for ENC* for publication.