data order requirement in the Inland Ecdis specification

General Discussions

ReneVisser
Nov '18

The S-57 standard repeatedly refers to records in the order meta, cartographic, geo, collection, but it doesn't require that the records have to be placed in that order.

The Inland Ecdis product specification, section 6.1.1 (versions 2.3 and 2.4) says however:

"The order of data in each base or update cell file is described below :
Data set file

- Data set general information record
- Data set geographic reference record (for EN application profile)
- Vector records

- Isolated nodes (SG3D)
- Isolated nodes (SG2D)
- Connected nodes
- Edges

- Feature records

- Meta features
- Geo features (ordered from slave to master)
- Collection features

"This order of records will enable the import software to check that the child record exists each time the parent record references it (i.e. it will already have read the child record so it will know if it exists or not)."

This poses a problem for us. Our ENC production software derives from an S-57 implementation and this ordering was not implemented when it was extended to Inland Ecdis. The software produces the nautical objects (buoys, locks etc) first, followed by the bathymetry (survey reliability, depth areas, soundings etc). Therefore the M_SREL and M_QUAL meta features follow geo features and collection features.

Changing this would require a non-trivial change to our production software. Furthermore we are concerned that a radical re-ordering of the record order might possibly have unexpected consequences for some viewers.

We wonder whether this ordering requirement is actually necessary, given that viewers typically handle both S-57 and Inland Ecdis ENCs and thus are able to handle ENCs where this ordering is not followed. We have produced ENCs which do not conform to the requirement for more than twelve years and have not so far encountered a case where a viewer had problems as a result.

Our question is thus: is there a good reason for maintaining this record-ordering requirement, or was it originally conceived for a situation (perhaps viewers on apparatus with very limited memory?) which does not in practice occur?

Bernd
Nov '18
Dear René,

the text has been copied from section 6.1.1 of the S-57 Product Specification edition 3.1 (see http://iho.int/iho_pubs/standard/S-57Ed3.1/20ApB1.pdf[1]).

There is no difference in the requirements between S-57 and the IENC PS.

Best regards
Bernd

Holger
Nov '18
Hi,

First it is a good idea to follow standards. Most of the time the rules are there for some reasons.
In this particular case the reason is mentioned in the standard. It allows software to do the conversion from the S-57 format to the SENC format in a single loop. Nevertheless since we have discovered several deviations from this rule we are handling such cases (at least in newer version) older versions or software from other vendors may reject such data.
The Meta objects will not cause problems since the usually not used in any feature to feature relationship.
Problems may arise with master slave relations or C_AGGR, C_ASSO objects.

I would suggest to keep the old role in the product specification. Standards should not be driven by systems which not follow them. It is the other way around.

Best regards
Holger.