

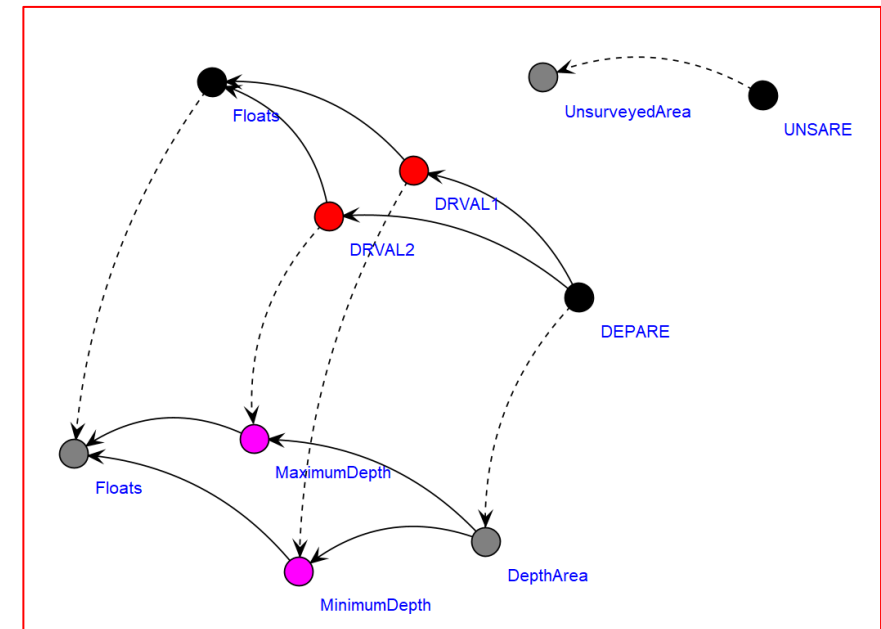
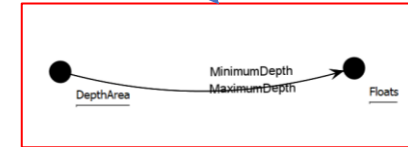
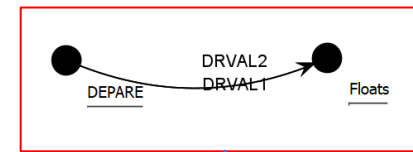
S-57 to S-101 Conversion Subgroup update

Progress So Far...

- **Conversion Subgroup**
- **Three VTC meetings**
- **Current Activities**
 - Working through spreadsheet of remodelled items
 - Focus is on “edge cases”
 - Preparation of output document “Conversion Guidance”
 - Testing...
- **Good participation from data producers, RENCs and industry participants.**

Types of Conversion

- Simple dictionary conversion
 - Where feature and attribute bindings don't change and are just re-labelled
 - Mapping from feature->feature and attribute->attribute
 - 80% of content of current ENCs
- Edge Cases
 - Geometric primitives which have changed/dropped
 - Changes to enumerations / meanings
 - New/Dropped features
 - Relationships/Associations
- Special considerations
 - Hazards / Alerts features
 - Where portrayal may be different
 - Where manual intervention may be required
 - Adaptation to Producer's encoding



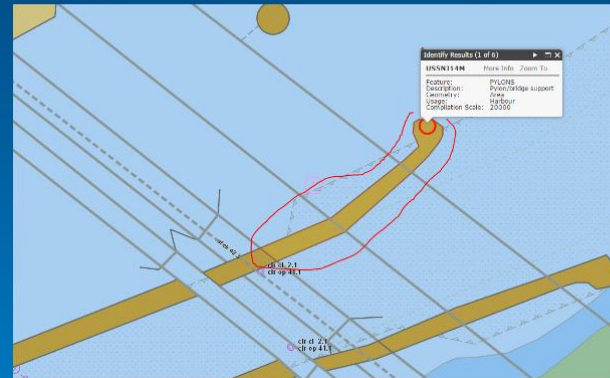
GitHub Issues

- Issues under discussion currently
 - Group 1 changes
 - InTheWater
 - Bridges
 - INFORM
 - Associations

Implemented Requirements

Support new Bridge modelling

- Implemented DCEG modeling
- Limitation discovered when a multiple bridges
 - Each bridge touching that shared pylon gets converted as the same bridge aggregation
- All features convert correctly
- Potential solution
 - Create a C_AGGR



kusala9 commented on 2 Jan

Collaborator Author ...

Diagram illustrating the relationship between SOE (Skin Of the Earth), DepthArea, UnsurveyedArea, and Hulk. The diagram shows a horizontal line with arrows indicating the extent of these areas. The SOE is the outermost boundary, followed by DepthArea, UnsurveyedArea, and Hulk.

Also from the original report. This is the HULKES example from the previous comment which may illustrate the second case above. A diagram of the third case would be useful...

Christian-Shom commented 9 days ago

Collaborator ...

- HULKES: agree that Unsurveyed Area should be created during the conversion as S-101 SOE (Skin Of the Earth) coincident with Hulk (this would need no change to prepare the S-57 data). Ideally there should be Depth Areas, but (recent) bathymetry under the hulk may be unknown (there may be obstructions), and the hulk may overlap different depth areas which complicates the conversion.
- FLODOC and PONTON: as these objects are also situated in the water, in favour of having the same rule then above for these objects.
- DOCARE and LOKBSN: S-57 underneath SOE object (LNDARE, UNSARE, etc.) to be "cut off". Probably needs to be tested if geometry have to be separated first by the HO or if the converters can do the job.

kusala9 commented 7 days ago

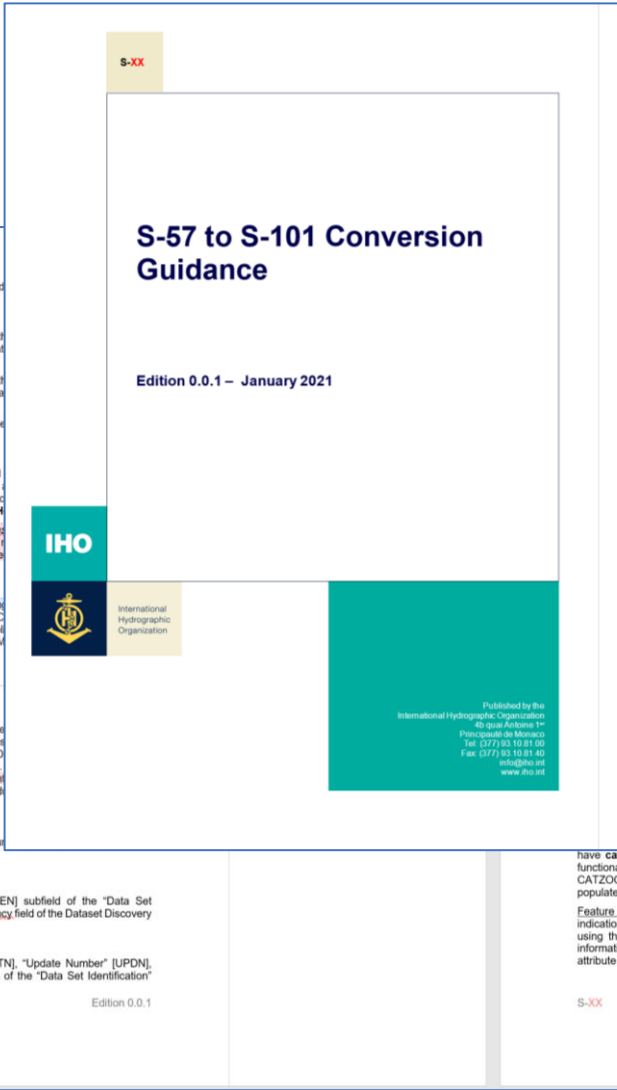
Collaborator Author ...

If the DOCARE/LOKBSN have a coincident polygon shared with an existing group1 (e.g. DEPAARE) then it's much easier as a new feature can be created. Otherwise some geometry intersection and topology operations have to happen in the converter (difficult!), so, this might be one where it can be made easier by pre-preparing the conversion process...

tdepuyt commented 6 days ago

... Agree with maintaining the decision to put an Unsurveyed Area under HULKES/FLODOC/PONTON. This would be the simplest

- S-57 to S-101 Conversion Guide
- Object class within this document, all encoded dates will be populated automatically on conversion.
- ### 2.1.5.1 Seasonal Objects
- Unless otherwise stated against an individual Object class within this document, the encoding of attribute **STATUS** = 5 (periodic/intermittent) will be populated as 101 attribute **status** on conversion.
- Unless otherwise stated against an individual Object class within this document, the encoding of the attributes **PERSTA** and **PEREND** will be populated as a complex attribute **periodic date range** on conversion.
- The encoding guidance for taking into account leap years (last day in February) remains unchanged in S-101.
- ### 2.1.6 Times
- The attributes **TIMEEND** and **TIMSTART** are **dateTime** type attributes and there are no corresponding **dateTime** attributes in S-101. The S-101 **time of day start** are time type attribute with 3 possible formats of encoding (local time) and are only bound to the S-101 information type **Service K**.
- During the automated conversion process, the time component (*hh:mm*) will be populated to the **time of day end** and **time of day start** attributes to the end to indicate that the time is UTC. Data Producers will be required to express the time as UTC + offset or local time.
- ### 2.1.7 Cells
- As for S-57, the coordinate multiplication factor for latitude and longitude is 10000000 (10⁷). The value in the Coordinate Multiplication Factor (Coordinate [DSPM] field is directly translated to the Coordinate Multiplication Factor [DSPM] field in S-101. The value in the Coordinate Multiplication Factor [DSPM] field is directly translated to the Coordinate Multiplication Factor [DSPM] field in S-101. The value in the Coordinate Multiplication Factor [DSPM] field is directly translated to the Coordinate Multiplication Factor [DSPM] field in S-101.
- ### 2.1.8 Seamless ENC coverage
- The rules regarding ENC coverage remain unchanged for S-101.
- ### 2.1.8.1 Feature Object Identifiers
- New Feature Object Identifiers (FOID) will be assigned to all S-57 object features. It is expected that the assigning of new FOIDs within a dataset is not possible during automated conversion. Data Producers will be required to manually amend these instances.
- ### 2.1.8.2 180° Meridian of Longitude
- The rule prohibiting datasets from crossing the 180° meridian remains unchanged in S-101.
- ## 2.2 Data quality description
- ### 2.2.1 Production information
- The Producing Authority provided in the "Producing Agency" [AG-IDENTIFICATION] [DSID] field is populated in the mandatory **producingAgency** Metadata for the S-101 dataset.
- ### 2.2.2 Up-to-datedness information
- Up-to-datedness information provided in the "Edition Number" [EDITION-UPDATE] [DSID] field is populated in the mandatory **updateApplicationDate** [UADT] and **issueDate** [ISDT] subfields.
- S-XXXJanuary 2021



S-57 to S-101 Conversion Guidance

td) are reset in the corresponding S-101 file name and Data Discovery Metadata fields to a release of a new S-101 dataset.

Quality, reliability and accuracy of bathymetric data

Quality of bathymetric data

a object: Quality of data (M_QUAL) (A)

ta feature: **Quality of Bathymetric Data** (S) (S-101 DCEG Clause 3.7)

rences in the data modelling between the S-57 M_QUAL Meta object and the **Quality of** **tric Data** feature constitute one of the most significant changes from S-57 to S-101. In data model, the defining S-57 CATZOC attribute has been effectively "deconstructed" into its parts covering accuracy, and seafloor coverage (including feature detection). These changes were made in order to provide the mariner with more detailed information as to the quality of metric data included in the ENC dataset.

of Zone of Confidence in Data: During the automated conversion process, the value 1 in CATZOC will be used to populate the S-101 mandatory attributes **data assessment**, **detected** (complex attribute), **full seafloor coverage achieved**, **horizontal position** (complex attribute) and **vertical uncertainty** (complex attribute). The values populated for attributes will correspond to the values shown in the ZOC table included in S-57 Appendix A, 2 – Attributes, as amended by S-57 Supplement No. 3. Data Producers may choose to re-these values in order to provide more accurate indications of these individual components of tric data quality to the mariner, given that the automated values populated will correspond to 1 case' for each component (see also additional comments for the **data assessment** attribute). For this reason, and also so as to ensure consistent portrayal of the indication of overall tric data quality in the "dual-foo" ECDIS environment, the S-101 attribute **category of zone of ce in data** is included as identical to the S-57 CATZOC attribute, from which ECDIS portrayal rived.

e S-57 attributes POSACC or SOUACC have been populated for M_QUAL, which indicates a higher hen the CAZOC indicates, these values will override the CATZOC categorisation of position h accuracy in populating the **horizontal position uncertainty** and **vertical uncertainty** attributes During the automated conversion process.

essment: The S-101 mandatory attribute **data assessment** introduces an option to reduce uter in some ECDIS display modes through population of value 2 (assessed (oceanic)). This ntended for use where an indication of the overall data quality is not considered to be required ly in depths deeper the 200 metres. However, determination as to when this value may be 2 cannot be made during the automated conversion process, therefore for all M_QUAL except e CATZOC = 6 (zone of confidence U (data not assessed)), the corresponding **Quality of tric Data** will have **data assessment** populated with value 1 (assessed).

ariation: The S-101 mandatory attribute **category of temporal variation** introduces the e Data Producer to incorporate the temporal impact on bathymetric data quality in areas e assessed is likely to change over time, or in the value of an extreme event such as a hurricane e. During the automated conversion process, for all M_QUAL except those where CATZOC f confidence U (data not assessed)), the corresponding **Quality of Bathymetric Data** will egorical of temporal variation populated with value 5 (unlikely to change). For full S-101 ility, Data Producers will be required to reassess the value of this attribute as required. For e = 6 (zone of confidence U (data not assessed)), **category of temporal variation** will e and with value 6 (unassessed).

Detection: The S-101 complex attribute **feature detection** introduces the option to include an of the minimum size of significant features detected by higher quality hydrographic surveys, e sub-attribute **size of features detected**. There is no corresponding encoding for this on in S-57 – for full capability S-101 data, Data Producers will be required to populate this manually, if considered necessary.

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