

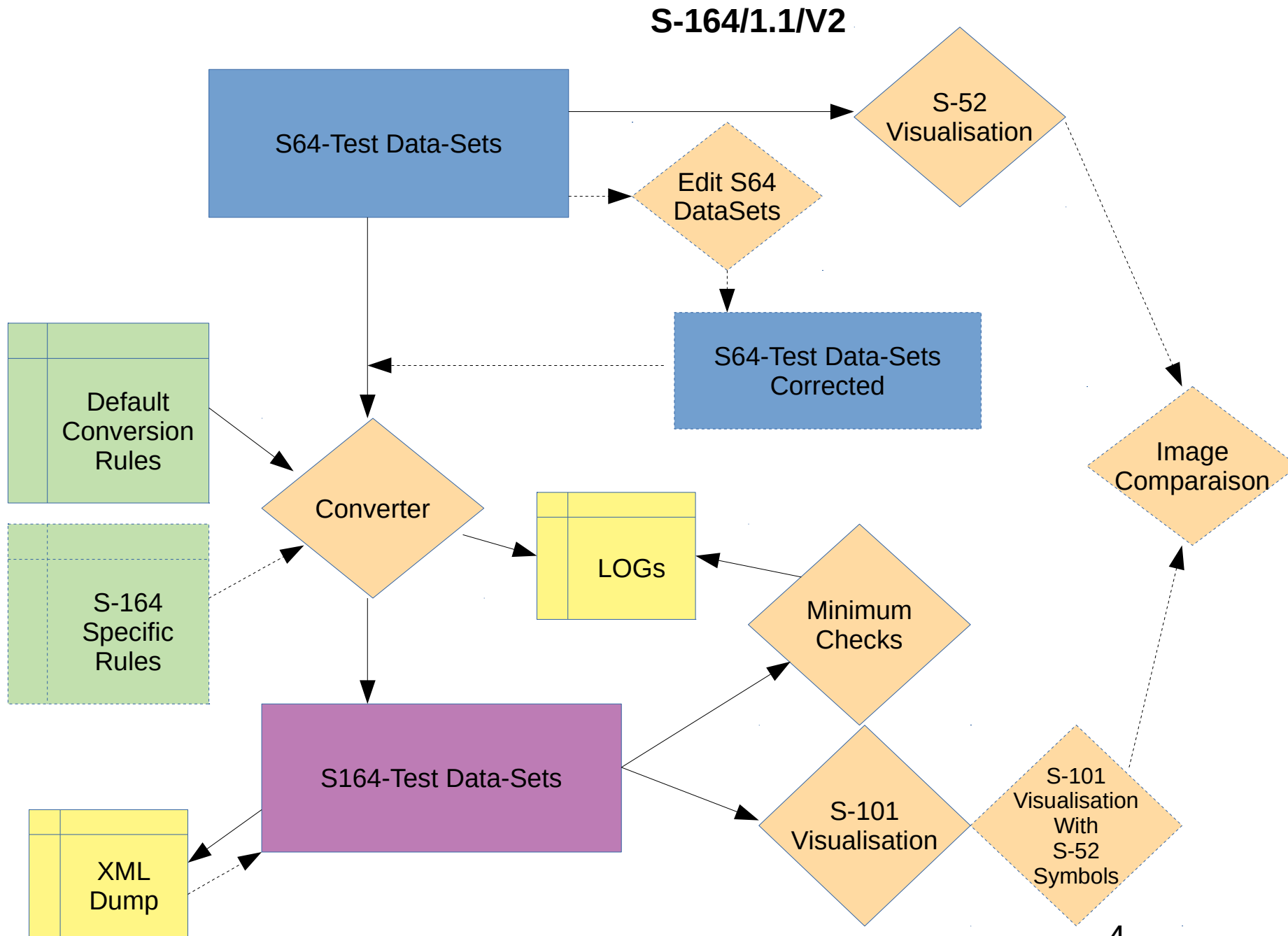
Conversion S-64 Test
DataSets to S-164 Test
DataSets (V2)



- The version V2 of S-164 test Data-Sets has been delivered. In comparison to the previous version, this new version has :
 - Updates
 - Catalog.xml
 - Header of Iso8211.
 - Others enhancements are described in the next slides.
- We work on the next version (V3) , all issues/proposals/enhancements are registered in the repository “<https://github.com/iho-ohi/S-101-Test-Datasets>”. New proposals are welcome.
- The main difficulties are
 - Existing errors in the original S-57 / Encoded features doesn't correspond to real cases.
 - Find a way to convert Generic New-Objects.

- The version V2 contains three sub-directories
 - TestDataSets.
 - LogsDumps.
 - CertificatesAndKeys.
- “**TestDataSets**” contains n sub-directories (one by S-164 package)
 - A S-164 package is delivered with its S-64 source name as (eg : 2.1.1 Power Up)
 - Each “S-164” package is composed of two sub-directories :
 - S100_ROOT in which you find the CATALOG.xml and S101 data sub-directory .
 - Each S101 data directory is composed of DATASET_FILES and SUPPORT_FILES if required
- “**LogsDumps**” contains DUMP files , LOG files from converter, log files from checker (minimal tests).
- “**CertificatesAndKeys**” contains elements for generating certificates and signatures present for each data files (dataset and support)
 - SCHEME_ADMINISTRATOR_IHO supplies element for signed public of data-producers
 - DATA_PRODUCER_00AA : default producer supplies its private key to sign S-164 test datasets
 - OTHER_DATA_PRODUCER_00NN : other producers supply its private key to sign non official S-164 test datasets

Work Flow

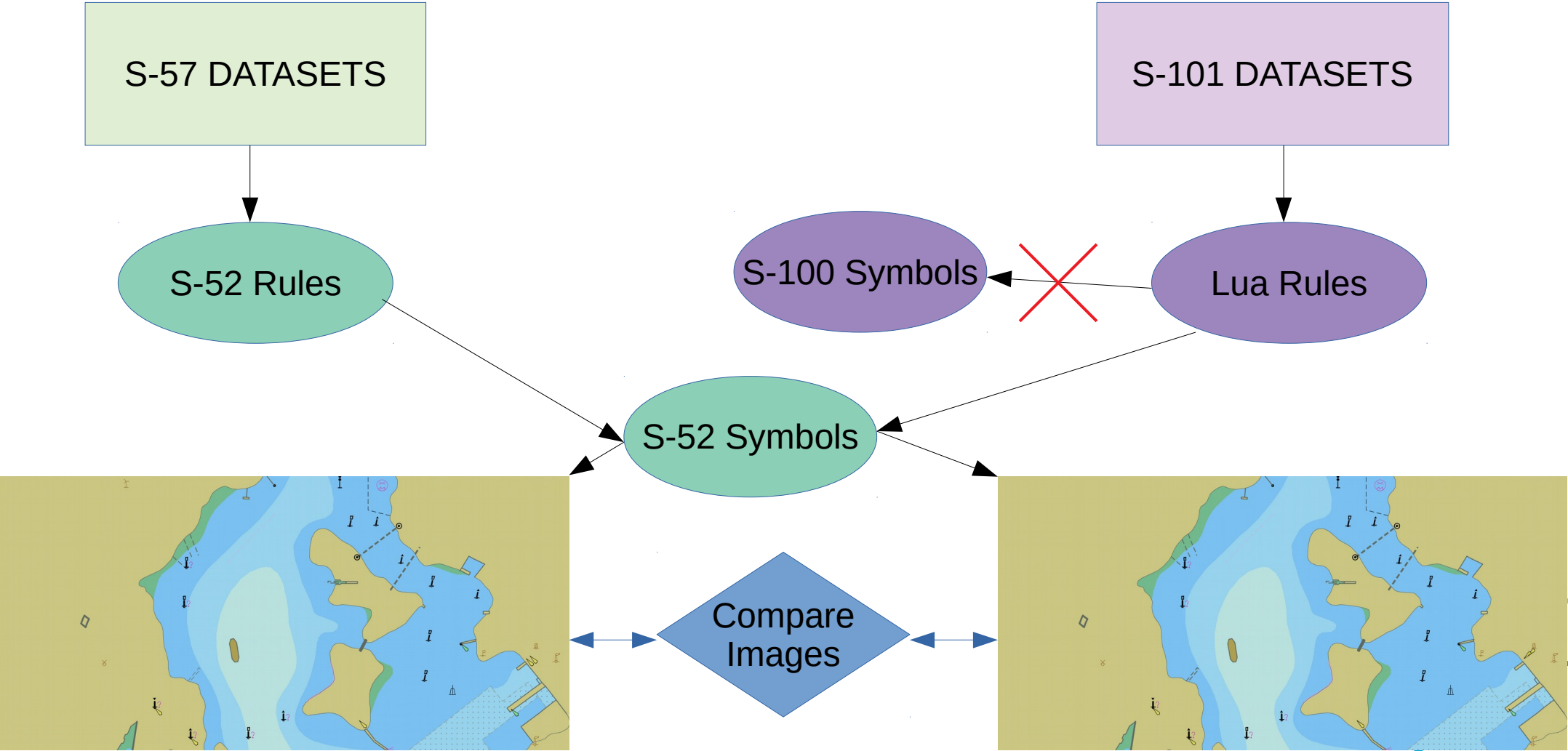


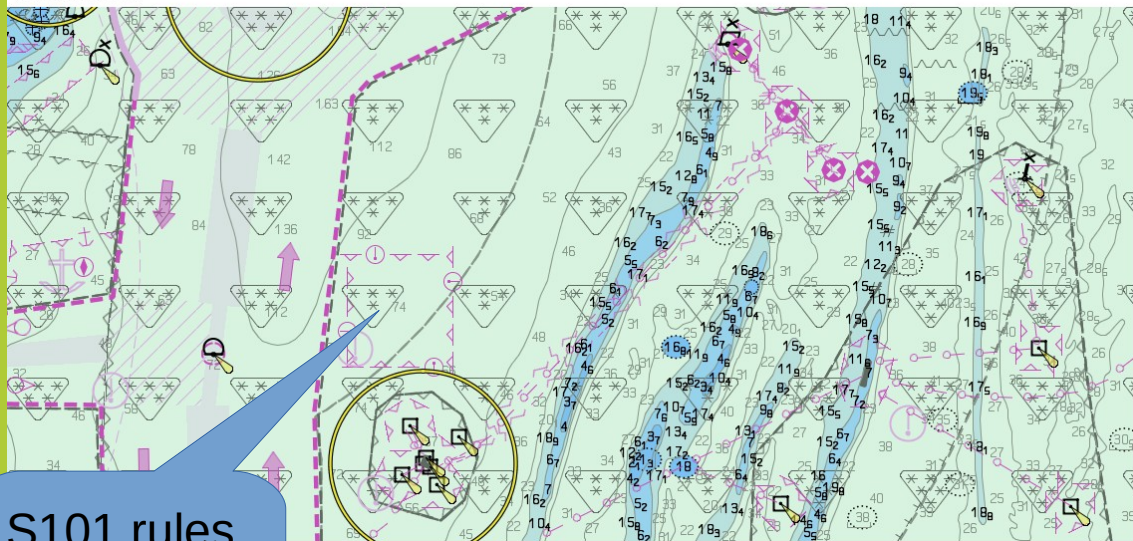
- Logically the CATALOG.xml respect the schema “https://schemas.s100dev.net/schemas/S100/5.0.0/S100Catalog/20220705/S100_ExchangeCatalogue.xsd”
- The default IHO code producer is 00AA for datasets.
- When it is required we use an another producer code for specific datasets (non official)
- In the name of dataset, the “S-57 intended usage code” has been replaced by ‘_’ (eg 10100AA_X000.000).
- The header of the ISO8211 logically respect the content of dataset EN or ER.
- The FOID is based on the current data producer code (eg 1810), and the next subdivisions of S57-FOID, allowing to point to the original S-57 objects.
- The S57 Information attributes has been converted to S-101 Nautical information type object.
- Generation of composite curves when possible as soon as the complete list of S57 FSPT spatial pointers share the same pointers between area and line features.
- The S-57 datasets that contains some NEW-OBJECT features are not converted for the moment. Futher Investigations of this case are necessary. (exception of this is the « settings/standard » dataset).
- The conversion of updates respect the logic of Test DataSets update instructions (delete / insert).
- The support TXT file have been encoding in UTF-8

S-164/1.1/V2 : Minimum Checks

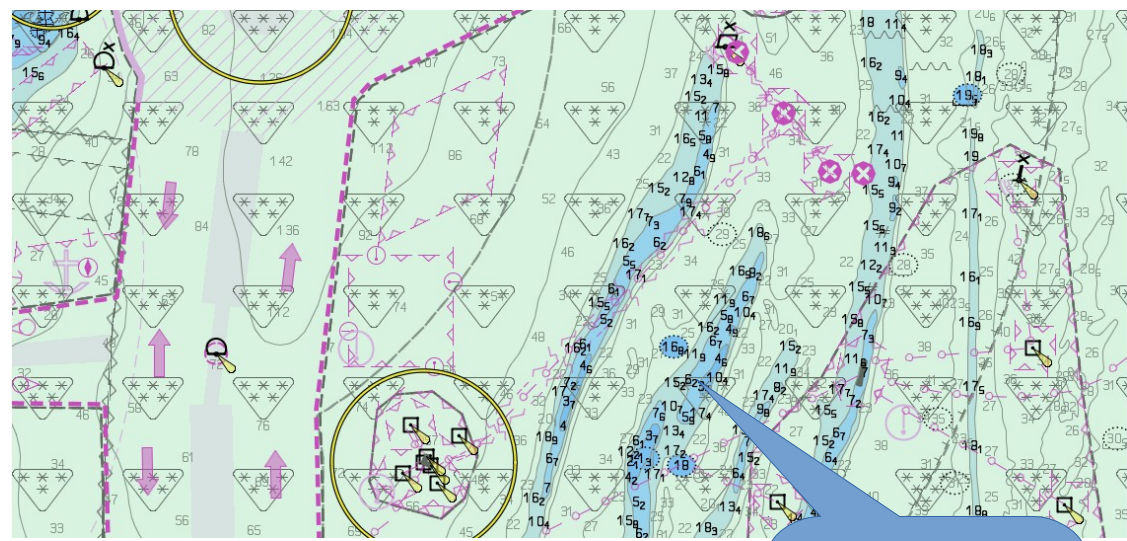
- Check with the current specification. (Feature Types, Attribute Types bindings , Attributes values)
- Check chain-node topology , groupe one consistency , valid geometry, unused spatial objects.
- Compare S-101 portrayal and S-52 portrayal (see next slide)

Validation of conversion of features and attributes by comparing S52 images.

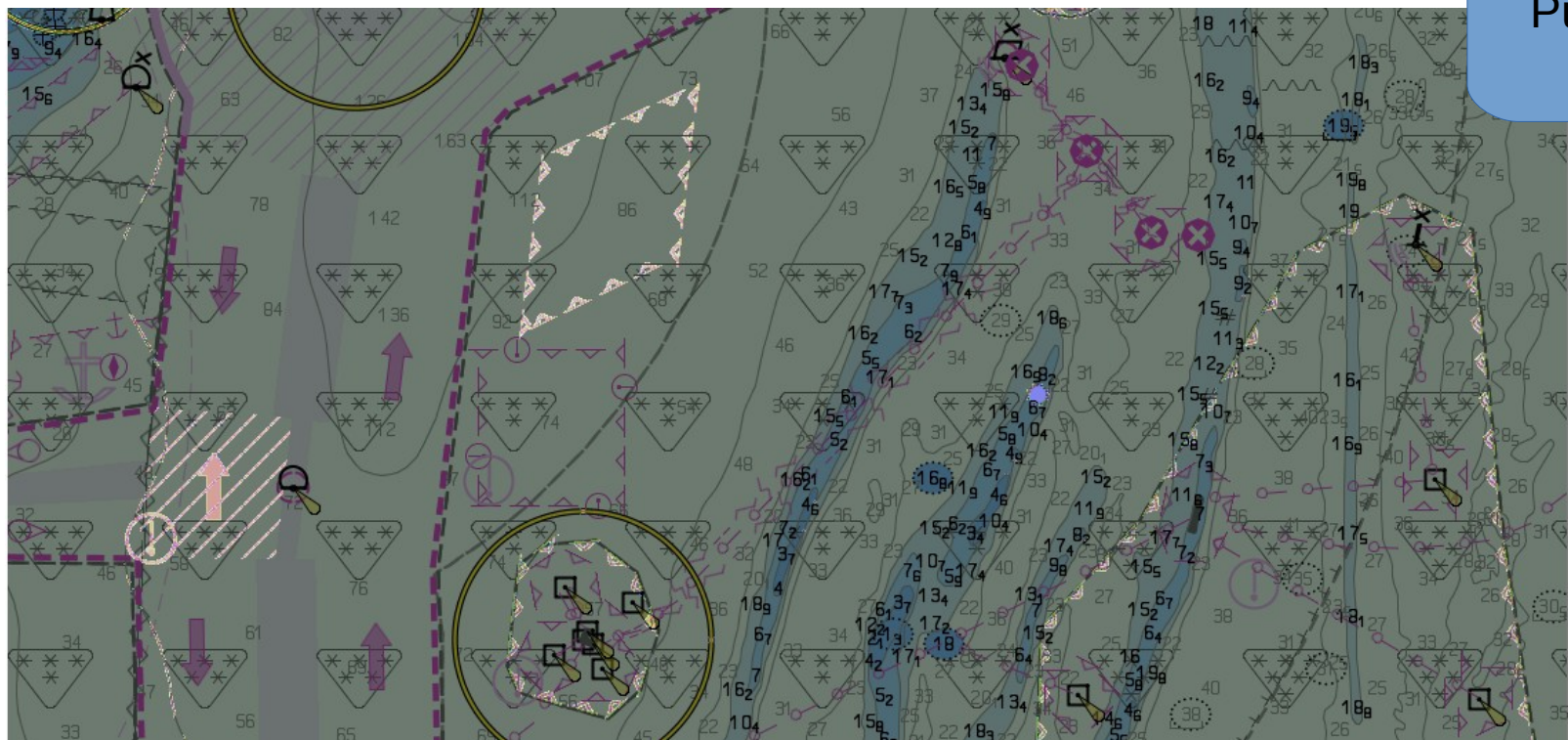




S101 rules
With
S52 symbols



Pur S-52



S-164/1.1/V2 : LOGs of conversion

- S57 Feature Types not converted
- S57 Feature Associations not converted
- S57 Attribute Values not converted
- S57 Attribute Enumerate Values converted to a specific S-101 value
- Specific decisions

S-164/1.1/V2 : S57 Feature Types not converted

- TS_PRH : (GB5X01SW - 1)
- ICNARE : (GB4X0000 - 1)
- CTRPNT : (GB5X01NW - 2)(GB4X0000 - 1)
- C_AGGR : (GB5X01NW - 1)
- RAPIDS : (AA5OTHER - 1)

S-164/1.1/V2 : S57 Attribute Enumerate Values converted to a specific S-101 value

- QUAPOS value unreliable (6) not found in S101 (replaced by the doubtful value 5) : (GB4X0000 - 2)
- QUAPOS value reported (not surveyed) (7) not found in S101 (replaced by the doubtful value 5) : (GB4X0000 - 2)
- LightAllAround : Attribute lightCharacteristic for the value interrupted quick-flashing (9) change to [Quick-Flashing (4) : (GB4X0000 - 2)
- Coastline : Attribute CATCOA with values [3] change to attribute type natureOfSurface with value [4] : (GB4X0000 - 1)
- Coastline : Attribute CATCOA with values [4] change to attribute type natureOfSurface with value [5] : (GB4X0000 - 1)(GB5X01NE - 1)(GB5X01SW - 1)

S-164/1.1/V2 : S57Attribute Values not converted

- [circular (non-directional) marine or aero-marine radiobeacon (1)] not converted for categoryOfRadioStation of RadioStation : (GB4X0000 - 3)
- [directional function (1)] not converted for categoryOfLight of LightSector : (GB5X01NW - 1)(GB4X0000 - 2)(GB5X01NE - 1)(GB5X01SW - 5)
- [rotating-pattern radiobeacon (3)] not converted for categoryOfRadioStation of RadioStation : (GB4X0000 - 1)
- [hill (4)] not converted for categoryOfSlope of SlopeTopline : (GB4X0000 - 2)
- [permanent (1)] not converted for status of River : (GB5X01NW - 1)(GB4X0000 - 4)
- [directional radiobeacon (2)] not converted for categoryOfRadioStation of RadioStation : (GB4X0000 - 1)(GB5X01SW - 1)
-

S-164/1.1/V2 : S57Attribute Values not converted

- [rock (9)] not converted for natureOfSurface of UnderwaterAwashRock : (GB5X01NW - 5) (GB4X0000 - 45)(GB5X01NE - 19)(GB5X01SW - 10)
- [aeronautical radiobeacon (7)] not converted for categoryOfRadioStation of RadioStation : (GB4X0000 - 2)
- [coast radio station providing QTG service (6)] not converted for categoryOfRadioStation of RadioStation : (GB4X0000 - 1)
- **[foot bridge (9)] not converted for categoryOfBridge of Bridge : (GB4X0000 - 1)**

S-164/1.1/V2 : Specific decisions => issue #56

- The S-57 5X test datasets have a CSCL = 25000.
- The S-57 4X test dataset has a CSCL = 52000 and a M_CSLC = 45000

Set scamin-scamax of 5X series to 12000-22000

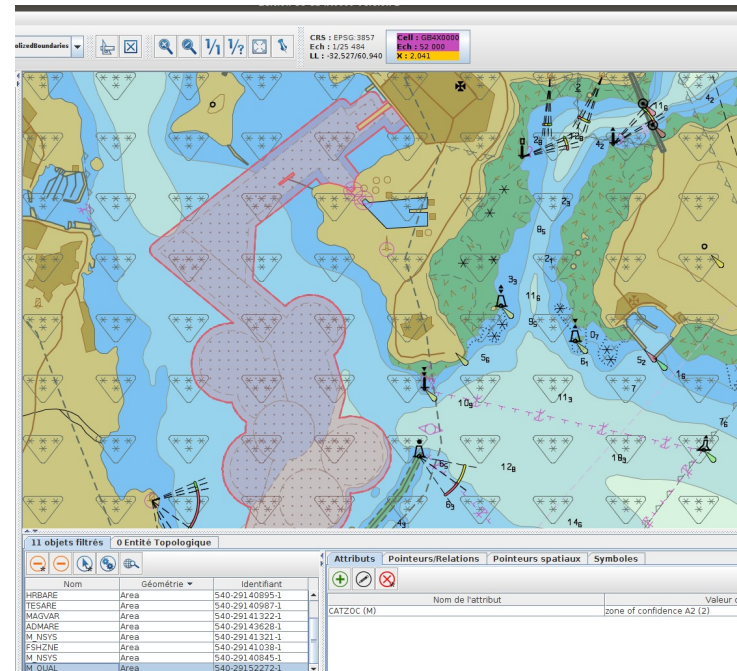
in order to have a continuity with

the scamin-scamax values of the two data coverage of 4X => 45000,90000 for the main data coverage and 22000,90000 ,for the secondary data coverage (M_CSLC)

S-164/1.1/V2 : Specific decisions

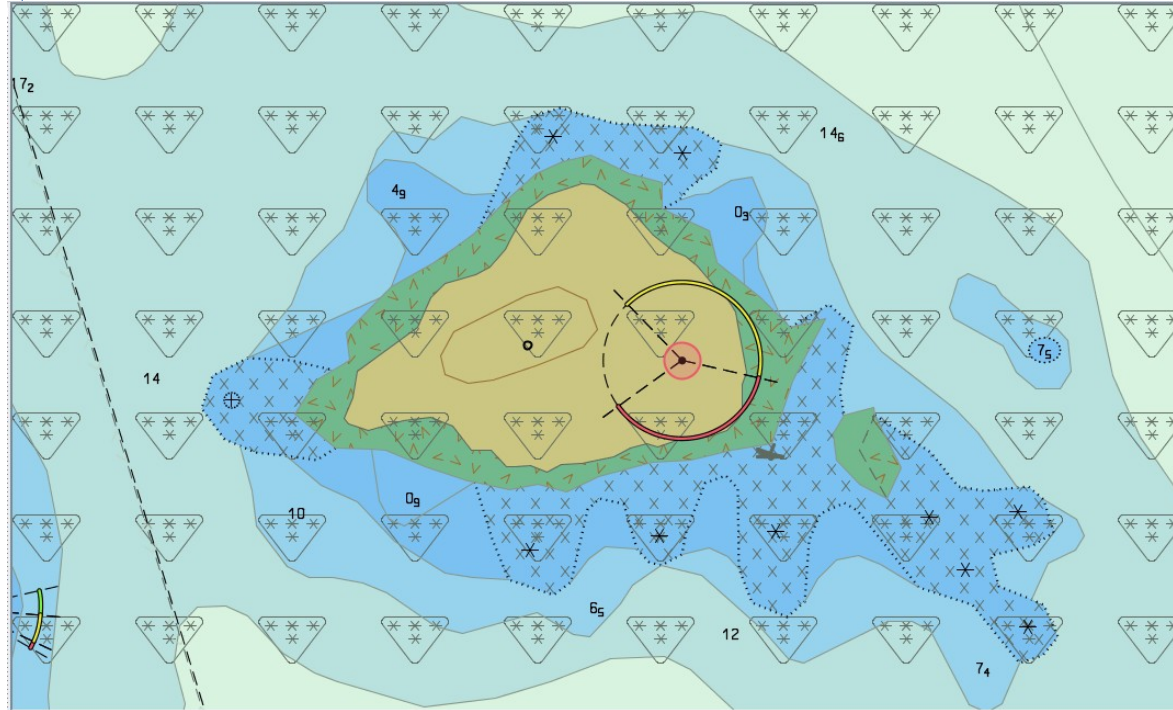
Temporal Variation of Quality of Bathymetric Data

categoryOfZoneOfConfidenceInData	fixedDateRange.dateStart	fixedDateRange.dateEnd
1		20211231
3	20220101	20221231
5	20230101	



S-164/1.1/V2 : Specific decisions

LightVisibilty = obscured (7) is not allowed for a LightSectored.



S-164/1.1/V2 : Specific decisions

- « Bridge » Point in « Display Base » test dataset ? (see issue #61)
- « Dock Area and Lock Basin » instances must be transferred to « Standard » test data set ? (see issue #63)
- Do we keep the attribute « radar conspicuous » on « curve features » that support a radar reflector ? (see issue #35)
- Notice To Mariners encoded in « Standard » Test DataSets (see issue #59)
- ...

S-158 WHERE WE ARE ?

- A first series of five S-158 datasets has been produced.
- This aim of this first series is more to find the good process to produce S-158 test datasets as to produce definitive S-158 datasets.
- The main difficulty is to convert a corrupt S-57/S-58 dataset , a way could be to correct the S-58 dataset, convert it to an S-101 test dataset and reproduce the equivalent of original errors in this S-101 test dataset.
- The focus is to reproduce the main errors of a dataset (not for the moment the secondary errors).

1. Test Dataset: AA400001

S-58 Recommended ENC Validation Checks covered in this section:

S-58 Check	Description
14	For each feature object of geometric primitive area where the exterior boundary shares more than one node with an interior boundary.
15	For each feature object of geometric primitive area where the exterior boundary or an interior boundary is not closed.
16	For each feature object of geometric primitive area where the exterior boundary is not encoded clockwise.
17	For each feature object of geometric primitive area where an interior boundary is not encoded counter-clockwise.
42	For each edge which is referenced by Group 1 objects AND is not referenced by a <u>M_COVR</u> meta object with <u>CATCOV</u> is Equal to 1 (coverage available) which does not appear twice with different <u>ORNT</u> (forward and reverse) values.
54a	For each <u>FORSTC</u> , <u>LNDMRK</u> or <u>SILTNK</u> feature which is not <u>COVERED_BY</u> a <u>BRIDGE</u> , <u>COALNE</u> , <u>DAMCON</u> , <u>FLODOC</u> , <u>LNDARE</u> , <u>OFSPFL</u> , <u>PILPNT</u> , <u>PONTON</u> , <u>PYLONS</u> , <u>SLCONS</u> or <u>UWTROC</u> feature object OR a <u>MORFAC</u> feature object where <u>CATMOR</u> is Equal to 1 (dolphin) OR 2 (deviation dolphin OR 5 (post or pile).

Secondary Errors

Critical - 13, 13c, 13d, 78, 82, 519a, 519b, 548a, 1775

Error - 1565

Warnings - 54b, 90b (4), 571 (7), 1722a

- Specifications are welcome .
 - Example in the first S-58 dataset , the skin of the earth is not respected by removing the attribute CATCOV on the M_COVR object.

42	For each edge which is referenced by Group 1 objects AND is not referenced by a M_COVR meta object with CATCOV is Equal to 1 (coverage available) which does not appear twice with different ORNT (forward and reverse) values.
----	---

- How to convert this error in the S-101 :
 - 1) Remove the data coverage ? (this lead could to a more global error => « Mandatory Feature »)
 - 2) Remove « Min/Max Scale Attributes on the S-101 DataCoverage ?
 - 3) Change the geometry of the M_COVR in a way that Skin Of the earth will not be respected.