



Geodatastyrelsen



S-101 Validation Checks

4th S-101PT

Monaco, 13.06.219



S-101 Validation Checks

- The Danish Geodata Agency was tasked to adapt the current S-58 validation checks (6.1.0) to S-100/S-101 data format;
 - The first task was to divide the validation checks into S-100 generic checks and S-101 product specific.
 - The S-100 ones will be further addressed by the S-100WG;
 - As for the S-101 product specific, the review work outcome was:



S-58 validation checks review for S-101

- Changes in terminology
- Changes in feature objects or attributes
- Changes to the data structure



- Changes in terminology:
 - For validation checks which remained identical but had terminology changes.
 - For example, where before we had "lines" and "areas", we should now read "curves and "surfaces".

| | | | |
|-----|--|--|---|
| 51b | For each COALNE feature object which is COINCIDENT with a SLCONS feature object of geometric primitive area surface where WATLEV is Equal to 1 (partly submerged at high water) OR 2 (always dry) OR is not Present that is WITHIN a LNDARE feature object of geometric primitive area surface . | COALNE and SLCONS with illogical values of WATLEV overlap. | Amend objects so that they do not overlap or amend WATLEV values. |
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Changes in feature objects or attributes:

- The validation checks were reviewed due to changes in some of the applicable features/attributes.

519b For each DEPARE, DRGARE, ~~FLODOC, HULKES~~, LNDARE, ~~PONTON, DOCARE, LOKBSN~~ or UNSARE feature object of geometric primitive surface that OVERLAPS or is WITHIN another DEPARE, DRGARE, ~~FLODOC, HULKES~~ LNDARE, ~~PONTON, DOCARE, LOKBSN~~ or UNSARE of geometric primitive surface.

Skin of the earth objects overlap.

Amend Skin of the Earth object limits to match data coverage.



Changes to the data structure:

- These validation checks had major changes in the applicable features/attributes and will therefore need extensive rewording.
- As an example we have the S-57 master/slave relationships which will now have to be subdivided into several specific feature associations.

1722a

For each navigational aid equipment feature object which ~~is not a slave~~ **does not have a Structure/Equipment feature association** to a navigational aid structure object OR another navigational aid equipment object .

Equipment object does not have a Structure/Equipment feature association to a structure object or another equipment object.

Create Structure/Equipment feature association.



New validation checks proposed:

- Divide the current S-58 validation check 1768, one for DEPARE and another for DRGARE

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| 1768a | For each SOUNDG feature object where the depth value is Less than or equal to the DRVAL1 of the DEPARE feature object it is WITHIN AND DRVAL1 of that feature object is notNull. | SOUNDG object with depth less than or equal to the DRVAL1 value of the underlying DEPARE object. | Amend bathymetry accordingly. |
| 1768b | For each SOUNDG feature object where the depth value is Less than the DRVAL1 of the DRGARE feature object it is WITHIN. | SOUNDG object with depth less than the DRVAL1 value of the underlying DRGARE object. | Amend bathymetry accordingly. |



New validation checks proposed:

- Currently, the S-58 validation checks 1565 and 1566 are in conflict when a PONTON is coincident with a SLCONS or COALNE. As a solution we propose that PONTON is added to part c) of check 1565.

| | | | |
|--|---|---|---------------------------------|
| 1565 | For each curve segment of a LNDARE feature object of geometric primitive surface which is not COINCIDENT with one of the following feature objects: | LNDARE object not enclosed by appropriate linear or surface object. | Remove COALNE or SLCONS object. |
| | a) COALNE, SLCONS, GATCON or DAMCON of geometric primitive curve. | | |
| | OR | | |
| | b) M_COVR, GATCON, DAMCON, RIVERS, TUNNEL, DRYDOC, CANALS, LAKARE, LOKBSN, DOCARE or LNDARE of geometric primitive surface. | | |
| | OR | | |
| c) CAUSWY, SLCONS, MORFAC, WRECKS, OBSTRN, PONTON or PYLONS where WATLEV is Equal to 1 (partly submerged at high water) OR 2 (always dry) OR 6 (subject to inundation or flooding). | | | |



- SHOM has proposed a S-58 validation check to search for objects that would be, simultaneously, masters and slaves.
- A S-101 version should read:

| | | | |
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| 89c | For each feature object which is both a structure and an equipment in a structure/equipment feature association. | Object is simultaneously a structure and an equipment. | Object is simultaneously a structure and an equipment. |
|-----|--|--|--|



Lastly, is S-58 validation check 1765b still relevant?

Currently, S-57 UOC 2.2.3.1 states that “when **M_QUAL** and the meta object **M_ACCY** are encoded in a cell, they should not overlap”.

In the S-101 DCEG 3.7.1 and 3.3.1 is stated that “Meta features **Quality of Bathymetric Data** and **Quality of Non-Bathymetric Data** may overlap”.

In our opinion that fact that these two features may now overlap will lead to many “false positives”. These exceptions might lead to the user ignoring the check results and allowing real errors slipping through. Is there still a point of performing the check?

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|-------|--|------------------------------------|---|
| 1765b | For each M_QUAL meta object that CONTAINS, OVERLAPS OR is WITHIN a M_ACCY meta object. | M_QUAL and M_ACCY objects overlap. | Amend M_QUAL or M_ACCY objects to remove overlap. |
|-------|--|------------------------------------|---|



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Comments: