1. **Test Dataset: 101AA00400003**

**S‐158 Recommended ENC Validation Checks covered in this section:**

|  |  |  |
| --- | --- | --- |
| **S‐58 Check** | **S-158 check** | **Description** |
| 511 | S100\_5\_004 | For each attribute present in the dataset which is not present in the S-101 FC. |
| 519a | S-101\_4\_003 | If the combined coverage of all Depth Areas, Dredged Areas, Land Areas, Dock Areas, Lock Basins and Unsurveyed Areas feature objects is Not equal to the extent of the Data Coverage meta object. |
| 519b | S-101\_4\_004 | For each Depth Area, Dredged Area, Land Area, Dock Area, Lock Basin or Unsurveyed Area feature object of geometric primitive surface that OVERLAPS or is WITHIN another Depth Area, Dredged Area, Land Area, Dock Area, Lock Basin or Unsurveyed Area of geometric primitive surface. |
| 524 | S100\_6\_003 | If the unit values present are not equal to those specified in the DPS; height, depth and coordinates. |
| 525 | S100\_6\_003 | If the unit values present are not equal to those specified in the DPS; height, depth and coordinates. |
| 548a | No match | If the combined coverage of M\_COVR meta objects is Not equal to the cell extents. |
| 548b |  | For each M\_COVR meta object that OVERLAPS or is COVERED\_BY another M\_COVR object. |
| 554 | S-101\_4\_005 | For each curve segment referenced by only one Data Coverage meta object AND is also shared by more than one Skin of the Earth feature object. |
| 1504a | S100\_6\_002 | If the vertical CRS(s) of the dataset are not equal to the value(s) specified in the DPS. |
| 1510a | S100\_6\_002 | If the vertical CRS(s) of the dataset are not equal to the value(s) specified in the DPS. |
| 1513 | S100\_6\_003 | If the unit values present are not equal to those specified in the DPS; height, depth and coordinates. |

**Secondary Errors**

Critical – **S100\_10a\_008** (*26a*), (*27*), **S101\_4\_002** (*42),* **S100\_5\_001** (*504*), **S101\_A\_007** (*505*), **S100\_5\_001** (*545*), (*540a*),

Error – (*28*),(*501*), **S101\_A\_167**(*43*)

Warnings – (*19*), **S101\_A\_225** (*1771*)

Nb:

**XXX**: S-100/S-101 associated to the S-158 check specified in the S-158 documentation

(*XXX*): No S-100/S-101 check found for the corresponding S-158 check in S-101\_Validation\_Checks or check not applicable for S-101

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Dataset Name** | 101AA00400003 | | | | | **S‐158 Check** | | S100\_5\_004 | | | **Type** | C |
| **S-158 Description** | For each attribute present in the dataset which is not present in the S-101 FC. | | | | | | | | | | | |
| **Message** | Prohibited attributes have been encoded. | | | | | | | | | | | |
| **Solution** | Remove prohibited attributes. | | | | | | | **Conformity** | | 5-A | | |
| **Test Case No. 1** | LandArea with attribute depthRangeMinimumValue encoded. | | | | | | | | | | | |
| **Location** | | | **Feature** | **Attributes** | | | **FRID** | | **FOID** | | | **VRID** |
| 32°23'48.86"S 61°00'54.24"E | | | LandArea (S) | depthRangeMinimumValue | | | FE-82 | | 1810\_1909018803\_85 | | | (S)82 |
| **Screen Capture** |  | | | | | | | | | | | |
| **Expected Test Results** | S100\_5\_004: 1 error “Prohibited attributes have been encoded” must be triggered. | | | | | | | | | | | |
| **Secondary Critical Errors** | S100\_5\_001: An additional error “Prohibited objects exist within the dataset”. | | | | | | | | | | | |
| **Test Case No. 2** | TidalStreamPanelData with attribute value encoded for . | | | | | | | | | | | |
| **Location** | | **Feature** | | **Attributes** | | | **FRID** | | **FOID** | | | **RRID** |
| 32°24'00.29"S 61°01'00.53"E | | TidalStreamPanelData (P) | | scaleValueMaximum= 30000 | | | FE-61 | | 1810\_1808114477\_64 | | | (P)08 |
| **Screen Capture** |  | | | | | | | | | | | |
| **Expected Test Results** | S100\_5\_004: “Prohibited attributes have been encoded” must be triggered. | | | | | | | | | | | |
| **Secondary Critical Errors** | None | | | | | | | | | | | |
| **Test Case No. 3** | QualityOfBathymetricData with attribute heightLengthUnits encoded | | | | | | | | | | | |
| **Location** | | **Feature** | | **Attributes** | | | **FRID** | | **FOID** | | | **VRID** |
| 32°22'31.74"S 61°02'33.74"E | | QualityOfBathymetricData (A) | | heightLengthUnits | | | FE-97 | | 1810\_1596277063\_4 | | | (S)97 |
| **Screen Capture** |  | | | | | | | | | | | |
| **Expected Test Results** | S100\_5\_004: “Prohibited attributes have been encoded” must be triggered. | | | | | | | | | | | |
| **Secondary Critical Errors** | None | | | | | | | | | | | |
|  | | | | | | | | | | | | |
| **Dataset Name** | 101AA00400003 | | | | | **S‐158 Check** | | S101\_4\_003 | | | **Type** | C |
| **S-158 Description** | If the combined coverage of all Depth Areas, Dredged Areas, Land Areas, Dock Areas, Lock Basins and Unsurveyed Areas feature objects is Not equal to the extent of the Data Coverage meta object. | | | | | | | | | | | |
| **Message** | Skin of the Earth Coverage Incomplete | | | | | | | | | | | |
| **Solution** | Amend to ensure that skin of the Earth Coverage Is complete | | | | | | | **Conformity** | | S-101 PS 4.3.2.1.1 | | |
| **Test Case No. 1** | Gap in group 1 coverage. | | | | | | | | | | | |
| **Location** | | **Feature** | | **Attributes** | | | **FRID** | | **FOID** | | | **RRID** |
| 32°22'42.95"S 61°02'08.54"E | | DataCoverage | |  | | | FE-93 | | 1810\_657245416\_2 | | | (S)92 |
| **Screen Capture** |  | | | | | | | | | | | |
| **Expected Test Results** | S101\_4\_003: An error “Skin of the earth (Group1) objects do not cover the data coverage (M\_COVR = 1)” must be triggered. | | | | | | | | | | | |
| **Secondary Critical Errors** | S101\_4\_002: An additional error “Group 1 coverage is not correct, a hole or an overlap exists” must be triggered.  S101\_A\_167: An additional error “DEPCNT does not coincide with two Group 1 objects” must be triggered. | | | | | | | | | | | |
|  | | | | | | | | | | | | |
| **Dataset Name** | 101AA00400003 | | | | | **S‐158 Check** | | S101\_4\_004 | | | **Type** | C |
| **S-158 Description** | For each Depth Area, Dredged Area, Land Area, Dock Area, Lock Basin or Unsurveyed Area feature object of geometric primitive surface that OVERLAPS or is WITHIN another Depth Area, Dredged Area, Land Area, Dock Area, Lock Basin or Unsurveyed Area of geometric primitive surface. | | | | | | | | | | | |
| **Message** | Skin of the earth objects overlap. | | | | | | | | | | | |
| **Solution** | Ensure Skin of the earth objects do not overlap. | | | | | | | **Conformity** | | S-101 Annex A 11.4 | | |
| **Test Case No. 1** | Depth area (1810\_346412749\_12 FE-07) overlaps on other Skin of the earth features. | | | | | | | | | | | |
| **Location** | | **Feature** | | **Attributes** | | | **FRID** | | **FOID** | | | **VRID** |
| 61°01'39.4"N 32°23'31.2"W | | DepthArea | | - | | | 7 | | 1810\_346412749\_12 | | | - |
| 61°00'48.5"N 32°23'52.4"W | | LandArea | | - | | | 82 | | 1810\_1909018803\_85 | | | - |
| 61°01'03.2"N 32°23'54.4"W | | UnsurveyedArea | | - | | | 84 | | 1810\_1327574194\_87 | | | - |
| 61°00'31.0"N 32°24'01.6"W | | DredgedArea | | - | | | 90 | | 1810\_1554182568\_93 | | | - |
| 61°00'37.2"N 32°20'27.9"W | | DepthArea | | - | | | 196 | | 1810\_1666463370\_96 | | | - |
| 61°00'48.5"N 32°23'58.9"W | | UnsurveyedArea | | - | | | 197 | | 1810\_2132330698\_2 | | | - |
| 61°00'47.4"N 32°23'38.3"W | | UnsurveyedArea | | - | | | 198 | | 1810\_2132330699\_2 | | | - |
| 61°00'48.2"N 32°23'29.9"W | | UnsurveyedArea | | - | | | 199 | | 1810\_2132330700\_2 | | | - |
| 61°00'09.3"N 32°20'09.4"W | | UnsurveyedArea | | - | | | 200 | | 1810\_2132330701\_2 | | | - |
| **Screen Capture** |  | | | | | | | | | | | |
| **Expected Test Results** | S101\_4\_004: error “Skin of the earth (Group1) objects overlap” must be triggered. | | | | | | | | | | | |
| **Secondary Critical Errors** | S101\_4\_002: additional error “Group 1 coverage is not correct, a hole or an overlap exists” must be triggered. | | | | | | | | | | | |
| **Test Case No. 2** | Floating dock (FLODOC AA-3345335726 FE-94) overlaps on other group 1 features. | | | | | | | | | | | |
| **Location** | | **Feature** | | **Attributes** | | | **FRID** | | **FOID** | | | **RRID** |
| 32°20'09.36"S 61°00'08.59"E | | DepthArea | | - | | | FE-196 | | 1810\_1666463370\_96 | | | (S)196 |
| **Screen Capture** |  | | | | | | | | | | | |
| **Expected Test Results** | 519b: error “Skin of the earth (Group1) objects overlap” must be triggered. | | | | | | | | | | | |
| **Secondary Critical Errors** | 42: additional error “Group 1 coverage is not correct, a hole or an overlap exists” must be triggered. | | | | | | | | | | | |
|  | | | | | | | | | | | | |
| **Dataset Name** | 101AA00400003 | | | | | **S‐158 Check** | | S100\_6\_003 | | | **Type** | C |
| **S-158 Description** | If the unit values present are not equal to those specified in the DPS; height, depth and coordinates. | | | | | | | | | | | |
| **Message** | DUNI does not equal 1 (metres). | | | | | | | | | | | |
| **Solution** | Set the DUNI subfield to 1 (metres). | | | | | | | **Conformity** | | S-100 6-4.4 | | |
| **Test Case No. 1** | Depth units has been assigned as “feet”. | | | | | | | | | | | |
| **Record** | | | | | **Subfield** | | | | | | | |
| DSPM - Data set Parameter field | | | | | DUNI - Units of depth measurement | | | | | | | |
| **ASCII** | 0001: <2>  DSPM: <20><2><2><0><0><45000><3><2><4><1><10000000><10>! | | | | | | | | | | | |
| **Expected Test Results** | 524: An error “DUNI does not equal 1 (metres)” must be triggered. | | | | | | | | | | | |
| **Secondary Critical Errors** | None | | | | | | | | | | | |
|  | | | | | | | | | | | | |
| **Dataset Name** | 101AA00400003 | | | | | **S‐158 Check** | | S100\_6\_003 | | | **Type** | C |
| **S-158 Description** | If the PUNI subfield of the DSPM is Not equal to 1 (metres). | | | | | | | | | | | |
| **Message** | PUNI does not equal 1 (metres). | | | | | | | | | | | |
| **Solution** | Set the PUNI subfield to 1 (metres). | | | | | | | **Conformity** | | S-100 6-4.4 | | |
| **Test Case No. 1** | Positional Accuracy units has been assigned as “feet”. | | | | | | | | | | | |
| **Record** | | | | | **Subfield** | | | | | | | |
| DSPM - Data set Parameter field | | | | | PUNI – Units of positional accuracy | | | | | | | |
| **ASCII** | 0001: <2>  DSPM: <20><2><2><0><0><45000<3><2><4><1><10000000><10>! | | | | | | | | | | | |
| **Expected Test Results** | S100\_6\_003: An error “PUNI does not equal 1 (metres)” must be triggered. | | | | | | | | | | | |
| **Secondary Errors** | None | | | | | | | | | | | |
|  | | | | | | | | | | | | |
| **Dataset Name** | 101AA00400003 | | | | | **S‐158 Check** | | S101\_4\_005 | | | **Type** | C |
| **S-158 Description** | For each curve segment referenced by only one Data Coverage meta object AND is also shared by more than one Skin of the Earth feature object. | | | | | | | | | | | |
| **Message** | Data Coverage Limit References Several Skin of the Earth Objects | | | | | | | | | | | |
| **Solution** | Ensure data Coverage does not Limit Reference Several Skin of the Earth Objects | | | | | | | **Conformity** | | S101 PS 4.3.2.1 | | |
| **Test Case No. 1** | FLODOC (A) overlapping with DEPARE feature. | | | | | | | | | | | |
| **Location** | | **Feature** | | **Attributes** | | | **FRID** | | **FOID** | | | **VRID** |
| 32°20'09.20"S 61°00'08.95"E | | FloatingDock (S) | | - | | | FE-94 | | 1810\_949631570\_95 | | | (S)94 |
| 32°20'09.20"S 61°00'08.95"E | | DepthArea (S) | | - | | | FE-196 | | 1810\_1666463370\_96 | | | (S)196 |
| **Screen Capture** |  | | | | | | | | | | | |
| **Expected Test Results** | S101\_4\_005: Data Coverage Limit References Several Skin of the Earth Objects | | | | | | | | | | | |
| **Secondary Critical Errors** | S101\_4\_004: error “Overlaping Skin of the Earth Features” must be triggered.  S101\_4\_002: error “Skin of the Earth Coverage Incomplete/Overlap” must be triggered. | | | | | | | | | | | |
|  | | | | | | | | | | | | |
| **Dataset Name** | 101AA00400003 | | | | | **S‐158 Check** | | S100\_6\_002 | | | **Type** | C |
| **S-158 Description** | If the vertical CRS(s) of the dataset are not equal to the value(s) specified in the DPS. | | | | | | | | | | | |
| **Message** | Invalid Vertical CRS | | | | | | | | | | | |
| **Solution** | Make the vertical CRS(s) of the dataset are equal to the value(s) specified in the DPS. | | | | | | | **Conformity** | | S-100 part 6-4.4 | | |
| **Test Case No. 1** | Vertical datum (VDAT) has been assigned a null value. | | | | | | | | | | | |
| **ASCII** | 0001: <2>  DSPM: <20><2><2><0><0><45000<3><2><4><1><10000000><10>! | | | | | | | | | | | |
| **Expected Test Results** | S100\_6\_002: error “Invalid Vertical CRS” must be triggered. | | | | | | | | | | | |
| **Secondary Critical Errors** | None | | | | | | | | | | | |
|  | | | | | | | | | | | | |
| **Dataset Name** | 101AA00400003 | | | | | **S‐158 Check** | | S100\_6\_002 | | | **Type** | C |
| **S-158 Description** | If the vertical CRS(s) of the dataset are not equal to the value(s) specified in the DPS. | | | | | | | | | | | |
| **Message** | SDAT is not populated. | | | | | | | | | | | |
| **Solution** | Populate the SDAT subfield with the sounding datum of the cell. | | | | | | | **Conformity** | | S-100 part 6-4.4 | | |
| **Test Case No. 1** | Sounding datum (SDAT) has been assigned a null value. | | | | | | | | | | | |
| **ASCII** | 0001: <2>  DSPM: <20><2><2><0><0><45000<3><2><4><1><10000000><10>! | | | | | | | | | | | |
| **Expected Test Results** | S100\_6\_002: error “Invalid Vertical CRS” must be triggered. | | | | | | | | | | | |
| **Secondary Critical Errors** | None | | | | | | | | | | | |
|  | | | | | | | | | | | | |
| **Dataset Name** | 101AA00400003 | | | | | **S‐158 Check** | | S100\_6\_003 | | | **Type** | C |
| **S-158 Description** | If the unit values present are not equal to those specified in the DPS; height, depth and coordinates. | | | | | | | | | | | |
| **Message** | Invalid Vertical CRS | | | | | | | | | | | |
| **Solution** | Make sure unit values present are equal to those specified in the DPS; height, depth and coordinates. | | | | | | | **Conformity** | | S-100 part 6-4.4 | | |
| **Test Case No. 1** | Height measurement units has been assigned as “feet”. | | | | | | | | | | | |
| **ASCII** | 0001: <2>  DSPM: <20><2><2><0><0><45000<3><2><4><1><10000000><10>! | | | | | | | | | | | |
| **Expected Test Results** | S100\_6\_003: An error “Units of Height measurement subfield is not set to (1) [metres]” must be triggered. | | | | | | | | | | | |
| **Secondary Critical Errors** | None | | | | | | | | | | | |