1. **Test Dataset: 101AA00400004**

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

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| **S‐58 Check** | **S‐158 Check** | **Description** |
| 1515a | S100\_5\_007 | Check that all attributes conform to the format defined for the attribute value type specified in the S-XXX Feature Catalogue.5-A |
| 1554a |  | For each Group 1 feature object where scaleMinimum is Present. |
| 1554b |  | For each meta object where scaleMinimum is Present. |
| 1617 | S101\_A\_008 | For each Dam feature object which is not COVERED\_BY a Land Area feature object of geometric primitive surface. S-101 Annex A 8.11.1 |
| 1651 | S101\_A\_009 | For each Swept Area feature object which OVERLAPS, CONTAINS OR is WITHIN a Land Area, Unsurveyed Area, Floating Dock, Hulk or Pontoon feature object of geometric primitive surface. |
| 1681 | S101\_A\_010 | For each Recommended Track feature object of geometric primitive curve where orientation value is Known AND traffic flow is Equal to 1 (inbound) OR 2 (outbound) OR 3 (one-way) AND the bearing of the line is more than 3 degrees Greater than OR Less than the value of orientation value. S-101 Annex A 15.5.1 |
| 1683 | S101\_A\_011 | For each Range System aggregation object with a single instance of both Navigation Line and Recommended Track AND their orientation value of the Recommended Track feature object is more than 3 degrees Greater than OR Less than the value (or reciprocal value) of the orientation value of the Navigation Line feature object. |

**Secondary Errors**

Critical – **S100\_5\_004** (547)

Error – **S100\_5\_007** (26b), (28), **S101\_A\_060** (569), **S101\_A\_061** (570), (1553), **S101\_A\_158** (1787), **S101\_A\_163** (1791b)

Warnings – (44), **S101\_A\_186** (1516)

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| **Dataset Name** | 101AA00400004 | | | **S‐158 Check** | S100\_5\_007 | | | | **Type** | C |
| **S-158 Description** | For each feature object where a value of fixedDateRange-dateEnd, DATSTA, periodicDateRange-dateEnd or periodicDateRange-dateStart does not conform to the formatting defined in S-57 Appendix B.1 Annex A. | | | | | | | | | |
| **Message** | Date attribute not formatted according to ISO 8601:1988. | | | | | | | | | |
| **Solution** | Amend formatting to conform to ISO 8601:1988. | | | | **Conformity** | | | 2.1.5 | | |
| **Test Case No. 1** | 4 BeaconSpecialPurposeGeneral(P) objects with Date attributes not formatted according to ISO 8601:1988. | | | | | | | | | |
| **Location** | | **Feature** | **Attributes** | | | **FRID** | **FOID** | | | **Spatial Object** |
| 32°20'14.99"S 61°09'39.53"E | | BeaconSpecialPurposeGeneral(P) | periodicDateRange-dateEnd = JULY0918 | | | FE-20 | 1810\_2034653657\_20 | | | P(5) |
| 32°20'15.11"S 61°09'43.51"E | | BeaconSpecialPurposeGeneral(P) | periodicDateRange-dateStart = 31122018 | | | FE-36 | 1810\_-1021177797\_35 | | | P(8) |
| 32°20'14.21"S 61°09'32.30"E | | BeaconSpecialPurposeGeneral(P) | fixedDateRange-dateStart= 00122016 | | | FE-37 | 1810\_-821776098\_36 | | | P(9) |
| 32°20'14.60"S 61°09'28.59"E | | BeaconSpecialPurposeGeneral(P) | fixedDateRange-dateEnd = 12312017 | | | FE-32 | 1810\_-429453293\_32 | | | P(7) |
| **Screen Capture** |  | | | | | | | | | |
| **Expected Test Results** | S100\_5\_007: 4 errors “Date attribute not formatted according to ISO 8601:1988” must be triggered. | | | | | | | | | |
| **Secondary Critical Errors** | None | | | | | | | | | |
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| **Dataset Name** | 101AA00400004 | | | **S‐158 Check** | S101\_A\_008 | | | | **Type** | C |
| **S-158 Description** | For each Dam feature object which is not COVERED\_BY a LandArea feature object of geometric primitive area. | | | | | | | | | |
| **Message** | Dam not covered by LandArea. | | | | | | | | | |
| **Solution** | Ensure Dam object is covered by a LandArea object. | | | | **Conformity** | | | S101 Annex A 8.11.1 | | |
| **Test Case No. 1** | Dam (S) object created which is not covered by LandArea (S). | | | | | | | | | |
| **Location** | | **Feature** | **Attributes** | | | **FRID** | **FOID** | | | **Spatial Object** |
| 32°22'54.25"S 61°09'22.65"E | | Dam (S) | - | | | FE-12 | 1810\_-451915472\_14 | | | (S)12 |
| **Screen Capture** |  | | | | | | | | | |
| **Expected Test Results** | S101\_A\_008: An error “Dam object is not covered by LandArea” must be triggered. | | | | | | | | | |
| **Secondary Critical Errors** | None | | | | | | | | | |
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| **Dataset Name** | 101AA00400004 | | | **S‐158 Check** | S101\_A\_009 | | | | **Type** | C |
| **S-158 Description** | For each SweptArea feature object which OVERLAPS, CONTAINS OR is WITHIN a LandArea, UnsurveyedArea, FloatingDock, Hulk or Pontoon feature object of geometric primitive area. | | | | | | | | | |
| **Message** | SweptArea object not covered by DredgedArea or DepthArea objects. | | | | | | | | | |
| **Solution** | Amend limits of SweptArea object or edit Group 1 objects. | | | | **Conformity** | | | S101 Annex A 8.11.1 | | |
| **Test Case No. 1** | SweptArea overlap created on LandArea, UnsurveyedArea, FloatingDock, Hulk and Pontoon features. | | | | | | | | | |
| **Location** | | **Feature** | **Attributes** | | | **FRID** | **FOID** | | | **Spatial Object** |
| 32°21'33.33"S 61°09'10.26"E | | SweptArea (S) | depthRangeMinimumValue=200 | | | FE-13 | 1810\_2036097680\_15 | | | (S)13 |
| **Screen Capture** |  | | | | | | | | | |
| **Expected Test Results** | S101\_A\_009: An error “SweptArea object not covered by DredgedArea or DepthArea objects” must be triggered. | | | | | | | | | |
| **Secondary Critical Errors** | None | | | | | | | | | |
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| **Dataset Name** | 101AA00400004 | | | **S‐158 Check** | S101\_A\_010 | | | | **Type** | C |
| **S-158 Description** | For each RecommendedTrack feature object of geometric primitive line where orientationValue is not Null AND TRAFFIC is Equal to 1 (inbound) OR 2 (outbound) OR 3 (one-way) AND the bearing of the line is more than 5 degrees Greater than OR Less than the value of orientationValue. | | | | | | | | | |
| **Message** | RecommendedTrack where orientationValue does not correspond to the bearing of the line. | | | | | | | | | |
| **Solution** | Populate an appropriate value of orientationValue consistent with the geometry of the RecommendedTrack object. | | | | **Conformity** | | | S101 Annex A 15.5.1 | | |
| **Test Case No. 1** | RecommendedTrack created with inappropriate orientationValue. | | | | | | | | | |
| **Location** | | **Feature** | **Attributes** | | | **FRID** | **FOID** | | | **Spatial Object** |
| 32°24’11.73”S 61°09’30.72”E | | RecommendedTrack (C) | orientationValue=100 | | | FE-25 | 1810\_88888762\_25 | | | (C)25 |
| 32°24’14.92”S 61°09’27.48”E | | RecommendedTrack (C) | orientationValue=100 | | | FE-27 | 1810\_336445492\_27 | | | (C)27 |
| 32°24’08.45”S 61°09’30.72”E | | RecommendedTrack (C) | orientationValue=100 | | | FE-24 | 1810\_1223042484\_24 | | | (C)24 |
| **Screen Capture** |  | | | | | | | | | |
| **Expected Test Results** | S101\_A\_010: An error “RecommendedTrack where orientationValue does not correspond to the bearing of the line” must be triggered. | | | | | | | | | |
| **Secondary Critical Errors** | None | | | | | | | | | |
|  | | | | | | | | | | |
| **Dataset Name** | 101AA00400004 | | | **S‐158 Check** | S101\_A\_011 | | | | **Type** | C |
| **S-158 Description** | For each Range System aggregation object with a single instance of both Navigation Line and Recommended Track AND their orientation value of the Recommended Track feature object is more than 3 degrees Greater than OR Less than the value (or reciprocal value) of the orientation value of the Navigation Line feature object. | | | | | | | | | |
| **Message** | Recommended Track and Navigation Line objects, part of a  Range System aggregation, with Inconsistent Orientation Values. | | | | | | | | | |
| **Solution** | Amend values of orientationValue to agree for RecommendedTrack or NavigationLine. | | | | **Conformity** | | | S101 Annex A 15.6.1 | | |
| **Test Case No. 1** | NavigationLine and RecommendedTrack objects created with different orientationValue values. | | | | | | | | | |
| **Location** | | **Feature** | **Attributes** | | | **FRID** | **FOID** | | | **Spatial Object** |
| 32°24’34.19”S 61°09’36.87”E | | NavigationLine (C) | categoryOfNavigationLine=1;  orientationValue=80 | | | FE-29 | 1810\_500129662\_29 | | | (CC)29 |
| 32°24’35.29”S 61°09’29.42”E | | RecommendedTrack (C) | basedOnFixedMarks=1; orientationValue=84;  trafficFlow=1 | | | FE-28 | 1810\_1324773184\_28 | | | (C)28 |
| **Screen Capture** |  | | | | | | | | | |
| **Expected Test Results** | S101\_A\_011: An error “RecommendedTrack and NavigationLine as part of a C\_AGGR do not have consistent values of orientationValue.” must be triggered. | | | | | | | | | |
| **Secondary Critical Errors** | None | | | | | | | | | |