1. **Test Dataset: AA400012**

**S‐58 Recommended ENC Validation Checks covered in this section:**

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| **S‐58 Check** | **Description** |
| 504 | For each CANBNK, LAKSHR, RIVBNK SQUARE, M\_HDAT, M\_PROD, M\_UNIT, C\_STAC, $AREAS, $LINES, $CSYMB, $COMPS, or $TEXTS feature object. |
| 545 | For each feature object which does not have a valid feature object class label/code as defined by the Object Catalogue and  S-57 Supplement No.3. |
| 547 | For each feature object which contains attributes outside the list of permissible attributes for the feature object as defined in the Object Catalogue and S-57 Supplement No.3. |
| 553 | For each Group 1 feature object where any of DATSTA, DATEND, PERSTA or PEREND is Present AND notNull. |
| 1011 | For each feature object where TXTDSC, NTXTDS, PICREP is ‘notNull’ and references a file that is Not present in the exchange set OR their names do not conform to the ENC Product Specification. |
| 1015 | If the text and picture file names are not unique OR not with extension (e.g. .TXT and .TIF). |
| 1023 | For each picture file which is not in the TIF format. |
| 1679 | For each feature object where attributes of types enumerated ('E'), float ('F'), integer ('I') or code string ('A') have more than one value. |
| 1804 | For each OBSTRN, UWTROC or WRECKS feature object of geometric primitive point which TOUCHES an edge of a DEPARE, DRGARE or UNSARE feature object. |

**Secondary Errors**

Critical – 26a, 507, 1013

Error – 26b, 28, 46, 96, 541b, 568, 574, 1553, 2000

Warnings – 90b, 571, 1670, 1781

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| **Dataset Name** | AA400012 | | | **S‐58 Check** | | 504 | | | **Type** | C |
| **S-58 Description** | For each CANBNK, LAKSHR, RIVBNK SQUARE, M\_HDAT, M\_PROD, M\_UNIT, C\_STAC, $AREAS, $LINES, $CSYMB, $COMPS, or $TEXTS feature object. | | | | | | | | | |
| **Message** | Prohibited objects exist within the dataset. | | | | | | | | | |
| **Solution** | Remove prohibited objects. | | | | | **Conformity** | | 3.2 | | |
| **Test Case No. 1** | Prohibited objects have been created. | | | | | | | | | |
| **Location** | | **Feature** | **Attributes** | | **FRID** | | **FOID** | | | **VRID** |
| 32°30'35.67"S 60°57'48.16"E | | SQUARE (A) | - | | FE-19 | | AA 0000003402 00001 | | | VE-21 |
| 32°30'42.14"S 60°58'13.26"E | | M\_UNIT (A) | - | | FE-20 | | AA 0000003403 00001 | | | VE-22 |
| 32°30'42.28"S 60°58'28.40"E | | M\_PROD (A) | - | | FE-21 | | AA 0000003404 00001 | | | VE-23 |
| 32°30'32.29"S 60°58'14.08"E | | $AREAS (A) | - | | FE-23 | | AA 0000003406 00001 | | | VE-25 |
| 32°30'10.18"S 60°58'02.77"E | | RIVBNK (L) | - | | FE-157 | | AA 0000003550 00001 | | | VE-201 |
| 32°30'21.50"S 60°57'53.66"E | | LAKSHR (L) | - | | FE-158 | | AA 0000003551 00001 | | | VE-202 |
| 32°30'16.48"S 60°58'03.77"E | | CANBNK (L) | - | | FE-159 | | AA 0000003552 00001 | | | VE-203 |
| 32°30'28.93"S 60°57'53.53"E | | $LINES (L) | - | | FE-160 | | AA 0000003553 00001 | | | VE-204 |
| 32°30'34.19"S 60°58'06.23"E | | $CSYMB (P) | - | | FE-175 | | AA 0000003568 00001 | | | VI-29 |
| 32°30'34.24"S 60°58'01.38"E | | $TEXTS (P) | - | | FE-176 | | AA 0000003569 00001 | | | VI-30 |
| 32°30'33.85"S 60°57'56.67"E | | $COMPS (P) | - | | FE-177 | | AA 0000003570 00001 | | | VI-31 |
| - | | C\_STAC | - | | FE-337 | | AA 0000003714 00001 | | | - |
| 32°30'32.77"S 60°58'24.51"E | | M\_HDAT(A) |  | | FE-339 | | AA 0000003723 00001 | | | VE-24 |
| 32°33'23.11"S 60°56'59.84"E | | <17001>(A) | - | | FE-500 | | AA 0000004095 00001 | | | VE-170 |
| **Screen Capture** |  | | | | | | | | | |
| **Expected Test Results** | 504: 12 errors “prohibited object” must be triggered. | | | | | | | | | |
| **Secondary Critical Errors** | 545: 13 additional errors “unknown object class label” must be triggered. | | | | | | | | | |
|  | | | | | | | | | | |
| **Dataset Name** | AA400012 | | | **S‐58 Check** | | 545 | | | **Type** | C |
| **S-58 Description** | For each feature object which does not have a valid feature object class label/code as defined by the Object Catalogue and S-57 Supplement No.3. | | | | | | | | | |
| **Message** | Object has invalid object class code. | | | | | | | | | |
| **Solution** | Amend object class code. | | | | | **Conformity** | | 3.2 and  Supplement No.3  Ch.2 | | |
| **Test Case No. 1** | New object feature class created achare. | | | | | | | | | |
| **Location** | | **Feature** | **Attributes** | | **FRID** | | **FOID** | | | **VRID** |
| 32°33'23.11"S 60°56'59.84"E | | achare |  | | FE-500 | | AA 0000004095 00001 | | | VE-170 |
| **Location** |  | | | **S57 Encoding** | | achare | |  | | |
| **FOID or VRID** | FE-0000000500/VE-0000000170 | | |  | |  | |  | | |
| **ASCII** |  | | | | | | | | | |
| **Expected Test Results** | 545: Error “Object has invalid object class label” must be triggered. | | | | | | | | | |
| **Secondary Critical Errors** | 20b: Additional error “orphaned geometry” must be triggered. | | | | | | | | | |
|  | | | | | | | | | | |
| **Dataset Name** | AA400012 | | | **S‐58 Check** | | 547 | | | **Type** | C |
| **S-58 Description** | For each feature object which contains attributes outside the list of permissible attributes for the feature object as defined in the Object Catalogue and S-57 Supplement No.3. | | | | | | | | | |
| **Message** | Attribute not permitted on feature object class. | | | | | | | | | |
| **Solution** | Remove attribute. | | | | | **Conformity** | | 3.2 and  Supplement No.3  Ch.2 | | |
| **Test Case No. 1** | HRBARE encoded with non-list of permissible attributes for the object. | | | | | | | | | |
| **Location** | | **Feature** | **Attributes** | | **FRID** | | **FOID** | | | **VRID** |
| 32°32'14.58"S 60°58'30.84"E | | HRBARE(A) | DATEND: 20171229; DATSTA:20171229 | | FE-77 | | AA 0000003467 00001 | | | VI-169 |
| **Screen Capture/ASCII** |  | | | | | | | | | |
| **Expected Test Results** | 547: An error “attribute not allowed for HRBARE” must be triggered. | | | | | | | | | |
| **Secondary Critical Errors** | None | | | | | | | | | |
|  | | | | | | | | | | |
| **Dataset Name** | AA400012 | | | **S‐58 Check** | | 553 | | | **Type** | C |
| **S-58 Description** | For each Group 1 feature object where any of DATSTA, DATEND, PERSTA or PEREND is Present AND notNull. | | | | | | | | | |
| **Message** | Attributes DATSTA, DATEND, PERSTA or PEREND are encoded on Group 1 objects. | | | | | | | | | |
| **Solution** | Remove these attributes from Group 1 objects. | | | | | **Conformity** | | 3.10.1 and Logical  consistency | | |
| **Test Case No. 1** | Group 1 objects created with attributes DATSTA, DATEND, PERSTA or PEREND. | | | | | | | | | |
| **Location** | | **Feature** | **Attributes** | | **FRID** | | **FOID** | | | **VRID** |
| 32°30'05.28"S 60°55'33.29"E | | DEPARE(A) | PERSTA:20171229;  PEREND:20171229;  DATSTA:20171229;  DATEND:20171229; | | FE-333 | | AA 0000003464 00001 | | | - |
| 32°30'12.40"S 60°55'54.37"E | | DRGARE(A) | PERSTA:20171229;  PEREND:20171229;  DATSTA:20171229;  DATEND:20171229; | | FE-332 | | AA 0000003460 00001 | | | - |
| 32°30'14.35"S 60°55'23.85"E | | FLODOC(A) | PERSTA:20171229;  PEREND:20171229;  DATSTA:20171229;  DATEND:20171229;  STATUS=5 | | FE-330 | | AA 0000003463 00001 | | | - |
| 32°30'14.35"S 60°55'26.44"E | | HULKES(A) | PERSTA:20171229;  PEREND:20171229;  DATSTA:20171229;  DATEND:20171229; | | FE-329 | | AA 0000003462 00001 | | | - |
| 32°30'29.78"S 60°56'06.05"E | | LNDARE(A) | PERSTA:20171229;  PEREND:20171229;  DATSTA:20171229;  DATEND:20171229;  STATUS=5 | | FE-331 | | AA 0000003461 00001 | | | - |
| 32°30'02.53"S 60°55'17.54"E | | PONTON(A) | PERSTA:20171229;  PEREND:20171229;  DATSTA:20171229;  DATEND:20171229;  STATUS=5 | | FE-326 | | AA 0000003466 00001 | | | - |
| 32°30'04.94"S 60°55'09.47"E | | UNSARE(A) | PERSTA:20171229;  PEREND:20171229;  DATSTA:20171229;  DATEND:20171229; | | FE-328 | | AA 0000003465 00001 | | | - |
| **Screen Capture** | - | | | | | | | | | |
| **Expected Test Results** | 553: An error “Attributes DATSTA, DATEND, PERSTA or PEREND are encoded on Group 1 objects.” must be triggered. | | | | | | | | | |
| **Secondary Critical Errors** | 547: An error “Attribute not permitted on feature object class” must be triggered. | | | | | | | | | |
|  | | | | | | | | | | |
| **Dataset Name** | AA400012 | | | **S‐58 Check** | | 1011 | | | **Type** | C |
| **S-58 Description** | For each feature object where TXTDSC, NTXTDS, PICREP is ‘notNull’ and references a file that is Not present in the exchange set OR their names do not conform to the ENC Product Specification. | | | | | | | | | |
| **Message** | Text or picture file referenced by a feature object is not present in the exchange set or its  name is non-conformant. | | | | | | | | | |
| **Solution** | Ensure referenced files exist and are named correctly. | | | | | **Conformity** | | Appendix B.1  (5.4.1 and 5.6.4) | | |
| **Test Case No. 1** | CBLARE, DMPGRD and LNDMRK features created with TXTDSC, NTXTDS and PICREP ‘notNull’ ensure referenced file is not existing. | | | | | | | | | |
| **Location** | | **Feature** | **Attributes** | | **FRID** | | **FOID** | | | **VRID** |
| 32°30'1722"S 60°57'06.53"E | | CBLARE (A) | NTXTDS= “AA4E0012.TXT“ | | FE-327 | | AA 0000003725 00001 | | | - |
| 32°31'21.73"S 60°55'55.86"E | | DMPGRD (A) | TXTDSC= “AA400012.TXT“ | | FE-324 | | AA 0000003728 00001 | | | - |
| 32°30'26.96"S 60°56'00.02"E | | LNDMRK (P) | PICREP= “AABRIDGE.TIF“ | | FE-322 | | AA 0000003488 00001 | | | VI-42 |
| **Screen Capture** |  | | | | | | | | | |
| **Expected Test Results** | 1011: AN error “Check for each feature object where TXTDSC is notNull and references a file that is not present in the exchange set” must be triggered. | | | | | | | | | |
| **Secondary Critical Errors** | None | | | | | | | | | |
| **Test Case No. 2** | ACHARE, DRGARE and BOYSPP features created with TXTDSC, NTXTDS and PICREP ‘notNull’ their names do not conform to the ENC Product Specification. | | | | | | | | | |
| **Location** | | **Feature** | **Attributes** | | **FRID** | | **FOID** | | | **VRID** |
| 32°31'29.72"S 60°56'55.92"E | | ACHARE (A) | NTXTDS = “AA400E.TXT” | | FE-52 | | AA 0000003717 00001 | | | **-** |
| 32°31'41.27"S 60°55'29.59"E | | BOYSPP (P) | PICREP = “AA400B.TIF“ | | FE-321 | | AA 0000003593 00001 | | | VI-41 |
| 32°31'39.67"S 60°57'13.66"E | | DRGARE (A) | TXTDSC=“AA400D.TXT“ | | FE-320 | | AA 0000003435 00001 | | | - |
| **Screen Capture** |  | | | | | | | | | |
| **Expected Test Results** | 1011: Error “Text or picture file referenced by a feature object is not present in the exchange set or its name is non-conformant” must be triggered. | | | | | | | | | |
| **Secondary Critical Errors** | None | | | | | | | | | |
|  | | | | | | | | | | |
| **Dataset Name** | AA400012 | | | **S‐58 Check** | | 1015 | | | **Type** | C |
| **S-58 Description** | If the text and picture file names are not unique OR not with extension (e.g. .TXT and .TIF). | | | | | | | | | |
| **Message** | Text and picture file names have incorrect format/name. | | | | | | | | | |
| **Solution** | Use correctly formatted and named text and picture files. | | | | | **Conformity** | | Appendix B.1 (5.6.4) | | |
| **Test Case No. 1** | BRIDGE feature created with TXTDSC and PICREP file names have incorrect format. | | | | | | | | | |
| **Location** | | **Feature** | **Attributes** | | **FRID** | | **FOID** | | | **VRID** |
| 32°30'51.80"S 60°56'34.84"E | | BRIDGE (L) | TXTDSC=“AABRIDGE“;  PICREP=“12BRIDGE“; | | FE-325 | | AA 0000003730 00001 | | | VE-215 |
| **Screen Capture** |  | | | | | | | | | |
| **Expected Test Results** | 1015: An error “Text and picture file names have incorrect format/name” must be triggered. | | | | | | | | | |
| **Secondary Critical Errors** | 1011: additional error “Text or picture file referenced by a feature object is not present in the exchange set or its name is non-conformant” must be triggered.  1023: additional error “picture file not in the TIF format” must be triggered. | | | | | | | | | |
|  | | | | | | | | | | |
| **Dataset Name** | AA400012 | | | **S‐58 Check** | | 1023 | | | **Type** | C |
| **S-58 Description** | For each picture file which is not in the TIF format. | | | | | | | | | |
| **Message** | Picture file not in TIF format. | | | | | | | | | |
| **Solution** | Replace picture file with TIF format version. | | | | | **Conformity** | | Appendix B.1,  Annex A (4.8.20) | | |
| **Test Case No. 1** | BUISGL feature created with PICREP file in PNG format. | | | | | | | | | |
| **Location** | | **Feature** | **Attributes** | | **FRID** | | **FOID** | | | **VRID** |
| 32°30'46.03"S 60°57'44.82"E | | BUISGL (P) | PICREP=“AABRIDGE.PNG“ | | FE-323 | | AA 0000003547 0001 | | | VI-43 |
| **Screen Capture** |  | | | | | | | | | |
| **Expected Test Results** | 1023: An error “picture file not in the TIF format” must be triggered. | | | | | | | | | |
| **Secondary Critical Errors** | None | | | | | | | | | |
|  | | | | | | | | | | |
| **Dataset Name** | AA400012 | | | **S‐58 Check** | | 1679 | | | **Type** | C |
| **S-58 Description** | For each feature object where attributes of types enumerated ('E'), float ('F'), integer ('I') or code string ('A') have more than one value. | | | | | | | | | |
| **Message** | More than one value present for attributes of the following types; enumerated ('E'), float ('F'), integer ('I') or code string ('A'). | | | | | | | | | |
| **Solution** | Remove unnecessary attribute values. | | | | | **Conformity** | | Appendix A, Ch.2  (2.1) | | |
| **Test Case No. 1** | WRECK feature object created by encoding the CATWRK with more than one value. | | | | | | | | | |
| **Location** | | **Feature** | **Attributes** | | **FRID** | | **FOID** | | | **VRID** |
| 32°32'27.10"S 60°57'06.83"E | | WRECK (P) | CATWRK = 5,4 | | FE-294 | | AA 0000003688 00001 | | | VI-40 |
| **ASCII** |  | | | | | | | | | |
| **Expected Test Results** | 1679: error “More than one value present for attributes of the following types; enumerated ('E'), float ('F'), integer ('I') or code string ('A').” must be triggered. | | | | | | | | | |
| **Secondary Critical Errors** | -None- | | | | | | | | | |
| **Test Case No. 2** | LNDMRK (P) feature object created by encoding the ELEVAT with more than one value. | | | | | | | | | |
| **Location** | | **Feature** | **Attributes** | | **FRID** | | **FOID** | | | **VRID** |
| 32°31'01.89"S 60°56'19.96"E | | LNDMRK (P) | ELEVAT = 30,10 | | FE-335 | | AA 0000000205 00001 | | | VI-44 |
| **ASCII** |  | | | | | | | | | |
| **Expected Test Results** | 1679: An error “attribute ELEVAT must have only one value” must be triggered. | | | | | | | | | |
| **Secondary Critical Errors** | -None- | | | | | | | | | |
| **Test Case No. 3** | SBDARE (P) feature object created by encoding the SCAMIN with more than one value. | | | | | | | | | |
| **Location** | | **Feature** | **Attributes** | | **FRID** | | **FOID** | | | **VRID** |
| 32°31'02.28"S 60°56'50.91"E | | SBDARE (P) | SCAMIN=4000,5000 | | FE-336 | | AA 0000000207 00001 | | | VI-45 |
| **ASCII** |  | | | | | | | | | |
| **Expected Test Results** | 1679: An error “attribute SCAMIN must have only one value” must be triggered. | | | | | | | | | |
| **Secondary Critical Errors** | None | | | | | | | | | |
|  | | | | | | | | | | |
| **Dataset Name** | AA400012 | | | **S‐58 Check** | | 1804 | | | **Type** | C |
| **S-58 Description** | For each OBSTRN, UWTROC or WRECKS feature object of geometric primitive point which TOUCHES an edge of a DEPARE, DRGARE or UNSARE feature object. | | | | | | | | | |
| **Message** | Point object touches an edge between Group 1 objects. | | | | | | | | | |
| **Solution** | Amend Group 1 object geometry so that it does not touch the point object. | | | | | **Conformity** | | 6.1 | | |
| **Test Case No. 1** | OBSTRN, UWTROC and WRECKS (P) features created which touches an edge between group 1 objects. | | | | | | | | | |
| **Location** | | **Feature** | **Attributes** | | **FRID** | | **FOID** | | | **VRID** |
| 32°32'20.87"S 60°57'21.47"E | | OBSTRN (P) | QUASOU=2; VALSOU=””;  WATLEV=3; | | FE-293 | | AA 0000003687 00001 | | | VI-39 |
| 32°32'20.87"S 60°57'21.47"E | | UWTROC (P) | NATSUR=9; QUASOU=2;  VALSOU=””; WATLEV=3 | | FE-292 | | AA 0000003686 00001 | | | VI-38 |
| 32°32'20.87"S 60°57'21.47"E | | WRECKS (P) | CATWRK=1; QUASOU=2; VALSOU=””; WATLEV=3 | | FE-291 | | AA 0000003685 00001 | | | VI-37 |
| **Screen Capture** |  | | | | | | | | | |
| **Expected Test Results** | 1804: An error “Point object touches an edge between Group 1 objects” must be triggered. | | | | | | | | | |
| **Secondary Critical Errors** | None | | | | | | | | | |