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| --- | --- | --- | --- | --- | --- | --- | --- |
|  | CHS 01 | V2 Part 1 | V2 Fig 1-6 and Clause 4.5.3.9 | Te | The class **S100\_IndeterminateDate** has the attribute *dateValue* which has type of S100\_TM\_TruncatedDate ; however in the enumerated list S100\_CD\_AttributeDataType defined in Part 2a the type is called S100\_TruncatedDate. | Use S100\_TruncatedDate. | Agreed – fixes inconsistency |
|  | CHS 02 | V2 Part 2 | V1 Fig 2-4 and Clause  2-7.2 & V2 Fig 2a-1 and Clause 2-1.14 | Te | In class **S100\_RE\_Register**, the attribute *operatingLanguage* should reference RE\_Locale from ISO 19135 Registers rather than PT\_Locale from the 19139 XML implementation of Metadata. PT\_Locale is meant for encoding in XML. | The reference should be to RE\_Locale since S100\_RE\_Register implements ISO 19135 RE\_Register which references RE\_Locale. | (Note: The class RE\_Locale has been used as the attribute type of the attribute *operatingLanguage* in the associated model.)  Agreed  NOTE: The metadata S100\_Catalogue still uses PT\_Locale as that references an XML encoding. |
|  | CHS 03 | V2 Part 2 | V1 Clause  2-7.3 and V2 Clause  2-2-1.15 | Ed | In class **S100\_RE\_RegisterItem**, the attribute *itemStatus* in the Description field there is a spelling mistake “Tthe”. | Correct spelling. | Agreed |
|  | CHS 05 | V2 Part 2 | V2 Clause  2-1.18 | Te | Class **RE\_** **SimilarityToSource** is taken from ISO 19135; however in S-100 it is indicated as an <enumeration>, whereas in ISO 19135 it is actually a <codelist>. If S-100 references ISO directly it should use classes directly as ISO defined them, otherwise S-100 would have to “realizet” and rename the class rather than directly use it. | Change class type to a <codelist>. Note this is an ISO codelist so the stereotype should be what ISO uses. | Rejected. Although CA pointed out an inconsistency that this needs to be realized and has been changed to S100\_RE\_SimilarityToSource. This follows the rule that was defined in S-100 Part 1 Clause 4.8.1. |
|  | CHS 06 | V2 Part 2 | V2 Clause  2-1 | Ed | Part 2-7 of S-100 includes subsections describing every class in Figure 2-4 – The Register schema, except for class **RE\_SubmittingOrganization** which is taken from ISO 19135. The documentation for this class is in ISO 19135 so the omission has no technical effect, but the S-100 standard should be consistent since all of the other classes taken from ISO 19135 are described. | Make S-100 consistent. | Agreed |
|  | CHS 07 | V2 Part 2a | V2 Clause  2a-4.2.5 | Ed | The attributes in the class S100\_CD\_FeatureConcept are in the order “featureUseType”, “alphaCodeIdentifier” in the UML model diagram in Figure 2-1 but are in the opposite order in the table in clause Part 2a-4.2.5. The order in the documentation should match the model. | Match the model in the documentation. | Agreed |
|  | CHS 08 | V2 Part 2a | V2 Clause  2a-4.2.6 | Ed | The attributes in the class S100\_CD\_FeatureUseType are in the order “geographic”, “meta”, “cartographic”, aggregation”, “theme” in the UML model diagram in Figure 2-1 but are in a different order in the table in clause Part 2a-4.2.6. The order in the documentation should match the model. | Match the model in the documentation. | Agreed – NOTE Aggregation was removed as a feature use type in 2.0.0 |
|  | CHS 09 | V2 Part 2a | V2 Clause  2a-4.2.19 | Te | The class S100\_CD\_ManagementInfo is defined in the text of S100, however the class S100\_RE\_ManagementInfo is used in the models of both Fig 2a-1 and Fig 2-4. | Use S100\_RE\_ManagementInfo | Agreed |
|  | CHS 10 | V2 Part 2a | V2 Clause  2a-4.2.20 | Te | The class S100\_CD\_DecisionStatus is defined in the text of S100 Part 2a, however the class RE\_DecisionStatus is used in the model of Fig 2-4 and defined in clause 2-1.21. Since neither S100\_CD\_DecisionStatus or S100\_RE\_DecisionStatus appear in Fig 2a-1 then clause 2a-4.2.20 is redundant. | Delete clause 2a-4.2.20. | Agreed |
|  | CHS 11 | Part 3 | Clause  3-5.2.4 | Ed/Te | In Table 3-1 the relationship between the class S100\_GF\_NamedType and S100\_GF\_InformationAssociationType is not described. | Describe the relationship. | Deferred – the model changed between edition 1.0.0 and 2.0.0 and there is no longer a direct relationship between these two classes.  NOTE: Will need to update the package that CHS provided with the correct model from 2.0.0 |
|  | CHS 12 | Part 3 | Clause  3-5.2.5 | Te | In Table 3-2 a relationship between the class S100\_GF\_ObjectType and S100\_GF\_InformationAssociationType is described. In the model this relation is between the classes S100\_GF\_NamedType and S100\_GF\_InformationAssociationType. | Correct the table or the model so that the relationship is between the correct classes. This impacts the previous comment on table 3-1 since the relationship maybe misplaced. | Deferred – the model changed between edition 1.0.0 and 2.0.0 and there is no longer a direct relationship between these two classes. |
|  | CHS13 | Part 3 | Clause  3-5.3.2 | Ed/Te | The relationship between the class S100\_GF\_ThematicAttributeType and S100\_GF\_ComplexAttributeType is not described | Describe the roles of the relationship, | Defer to 2.1.0 with official proposal |
|  | CHS14 | Part 3 | Clause  3-5.3.1 | Ed/Te | The classes:  S100\_GF\_TextAttributeType,   S100\_GF\_DateAttributeType,  S100\_GF\_TimeAttributeType,  S100\_GF\_DateTimeAttributeType,  S100\_GF\_IntegerAttributeType,  S100\_GF\_RealAttributeType,  S100\_GF\_BooleanAttributeType,  S100\_GF\_URIAttributeType,  S100\_GF\_URLAttributeType, and S100\_GF\_URNAttributeType  are undocumented. | Document these attribute types with at least a single clause for the group of them that references back to the basic types in Part 1. | Defer to 2.1.0 with official proposal |
|  | CHS15 | Part 3 | Clause  3-5.3.1 | Ed/Te | The classes:  S100\_GF\_TextAttributeType,   S100\_GF\_DateAttributeType,  S100\_GF\_TimeAttributeType,  S100\_GF\_DateTimeAttributeType,  S100\_GF\_IntegerAttributeType,  S100\_GF\_RealAttributeType,  S100\_GF\_BooleanAttributeType,  S100\_GF\_URIAttributeType,  S100\_GF\_URLAttributeType, and S100\_GF\_URNAttributeType  all inherit the attribute *valueType* from the class S100\_GF\_AttributeType. This means that the attribute *valueType i*s doubly defined. If the intent is for the subtype to overwrite the subtype to overwrite the attribute definition then this should be documented in the text.  The overwriting of subtypes is called covariant overriding and is allowed in a limited sense in UML 2.0 but is not permitted in many implementation languages such as C++ or JAVA. Since these are metaclasses and are not directly implemented covariant overriding can be used but should be documented. | Document that the attribute *valueType* inherited from the class S100\_GF\_AttributeType is overwritten by the definition of the same attribute in the subtype. | Defer to 2.1.0 with official proposal for S-100 working group discussion. |
|  | CHS16 | Part 3 | Clause  3-5.3.1 | Ed/Te | In the class S100\_GF\_TimeAttributeType the data type available from ISO 19103 is called ClockTime rather than Time. This is to distinguish it from a time interval. | Use the type available from ISO 19103. | Defer to 2.1.0 with official proposal for S-100 working group discussion. |
|  | CHS 17 | Part 3 | Clause  3-7.2 | Te | The model for Gridded Data is not in alignment with ISO TC211. This is probably due to the fact that the models in ISO 19123 and ISO 19129 were still in flux when this part of S-100 was developed. Also there has been a corrigenda to ISO 19115 since S-100 was published. A revision to ISO 19123 is expected soon and a new version of 19115 has just been published.  The current model in S-100 does not show all of the applicable attributes or data types or code list classes. | The model in S-100 V1 is workable, since the essential classes are correct, but the model needs to be revised soon. This should probably be done after the revision of ISO 19123 and the creation of a new part to ISO 19123 is developed in ISO TC211.  A revised model in alignment with the current status of the ISO TC211 standards 19129 and 19123 is provided so that S-100 V2 can be published without waiting on ISO. See associated file. | Defer to 2.1.0 with official proposal for S-100 working group discussion |
|  | CHS 18 | Part 3 | Clause  3-7.3 | Te | The model for Part 3-7.3 Variable Cell Size Grid has all of the same issues as does the model for a Quadrilateral Grid (see comment 3-7.2). The class IF\_RiemannGriddedData makes use of the classes CV\_GridValueCell and CV\_GridValuesMatrix that are in the package Quadrilateral Grid. This is not a problem since a Riemann Gridded is technically a Quadrilateral grid with a different traversal order and all that the Morton order implies.  The model in S100 V1 redefines the attribute default in an ISO class. This cannot be done because it alters an external class. An object is shown in the new model that realizes the ISO class with the attribute value changed. | The model in S-100 V1 is workable, since the essential classes are correct, but the model needs to be revised soon. This should probably be done after the revision of ISO 19123 and the creation of a new part to ISO 19123 is developed in ISO TC211.  A revised model in alignment with the current status of the ISO TC211 standards 19129 and 19123 is provided so that S-100 V2 can be published without waiting on ISO. See associated file | Defer to 2.1.0 with official proposal for S-100 working group discussion |
|  | CHS 19 | Part 3 | Clause  3-7.4 | Te | The model for Part 3-7.4 Feature Oriented Image has different attributes from the ISO TC211 classes CV\_GridPointValuePair and CV\_GridValuesMatrix as is shown in S-100. This is probably the result of S-100 referencing an earlier (or maybe a draft) version of the ISO model. Discrete coverage is part of the ISO 19123 model that will change when there is a revision. This will occur in 2015. | A revised model in alignment with the current status of the ISO TC211 standards 19129 and 19123 is provided so that S-100 V2 can be published without waiting on ISO. See associated file | Defer to 2.1.0 with official proposal for S-100 working group discussion |
|  | CHS 20 | Part 3 | Clause  3-3 | Ed/Te | The standards ISO 19129 and ISO 19123 are referenced in the description of the models for Imagery and Gridded Data. | Add these references to clause 3-3. | Defer to 2.1.0 with official proposal for S-100 working group discussion |
|  | CHS 21 | Part 4 | Clause A.1  Fig 4a-2 | Ed/Te | The class S100\_Metadata overrides the attribute fileIdentifier and makes it mandatory. This needs to be explicitly indicated. | A revised model has been drawn that emphasises the relationship of S100)Metadata and documents the overriding of the attribute. See associated file.. | Agreed |
|  | CHS 22 | Part 4a | Annex  4A-D  Figure 4a-D1 | Ed/Te | In Figure 4a-D1 Realization of the Exchange Set Classes, the composition relation for a CT\_Catalogue subCatalogue is not shown, although the relation is in the ISO model and the class CT\_Catalogue is an ISO class. Also the names of many relations are not shown even though they are in the ISO model. The relationship between DS\_Dataset and DS\_Aggregate is shown as a composition in S-100 although it is shown as a simple relationship with a composition role in the ISO model. | The S-100 model should be revised to align with the ISO model. See associated file.  . | Defer to 2.1.0 with official proposal for S-100 working group discussion |
|  | CHS 23 | Part 4a | Annex  Fig 4a-D2 | Te | In the classes S-100\_CatalogueMetadata and S100\_19115DatasetMetadata are not defined in clauses in the text | Define these classes. | Defer to 2.1.0 with official proposal for S-100 working group discussion |
|  | CHS 24 | Part 4a | Annex  Fig 4a-D2 | Ed | In the classes S-100\_CatalogueMetadata and S100\_19115DatasetMetadata are shown in the diagram with the spelling of Metadata as MetaData. This is inconsistent with the other uses of the use Metadata. | Use the spelling Metadata. | Agreed |
|  | CHS 25 | Part 4a | Annex  Fig 4a-D2 | Ed | The composition relationship between S100\_SupportFileDiscoveryMetadata and S100DatasetDiscoveryMetadata is shown in the next figure 4a-D3 as between S100\_SupportFileDiscoveryMetadata and S100ExchangeCatalogue. While technically a component of a component is also a component of the whole, so this relationship is correct. However, the figures are different for no apparent reason. | The relationship should be shown the same way in both figures or a note should be added explaining the difference. | Defer to 2.1.0 with official proposal for S-100 working group discussion |
|  | CHS 26 | Part 4a | Annex  Clause  4A-D-2.4 | Ed/Te | In the class S-100\_CataloguePointOfContact the definition for the attributes phone and address are incorrect. They seem to be copied from the previous table. | Revise the definitions of the attributes. | Agreed |
|  | CHS 27 | Part 4a | Annex  Clause  4A-D-2.7 | Te | The class S100\_VerticalAndSoundingDatum is a code list and should be stereotyped as such. This may be extended by some nations that have other sounding datums. | Change class to a code list. | Defer to 2.1.0 with official proposal for S-100 working group discussion |
|  | CHS 28 | Part 4a | Annex  Clause  4A-D-2.12 | Te | This class is named S100\_SupportFormat in Figure 4a-D4 but as S100\_SupportFileFormat in the description in clause 4A-D-2.12. | Use the name S100\_SupportFileFormat in the model and figure. | Agreed |
|  | CHS 29 | Part 4a | Annex  Clause  4A-D-2.12 | Te | The class S100\_SupportFileFormat should be a code list since it can be extended. | Us the stereotype codeList. | Defer to 2.1.0 with official proposal for S-100 working group discussion |
|  | CHS 30 | Part 4a | Annex  Fig 4a-D4 | Ed | The class S100\_VerticalAndSoundingDatum should be in Figure 4a-D4 S100 Exchange Set - class details. | Add the class to the figure. | Agreed – note did not change the two proposals to codelists. |
|  | CHS 31 | Part 4b | Figure 4b-1 | Ed/Te | When this figure is derived from the ISO model there exist many additional package relationships not shown in the figure. | Revise the figure to match the ISO model.  See associated file. | Defer to 2.1.0 with official proposal for S-100 working group discussion |
|  | CHS 32 | Part 4c | Figure 4c-A2 | Ed | S100 references to the ISO 19138 classes do not work with the ISO harmonized model.  The ISO harmonized model is missing the model for ISO 19138:2006. According to the ISO Model Harmonization Convenor this seems to be the fault of the ISO Project Leader not submitting that model.  Note that ISO has replaced 19138 quality measures with the new ISO 19157 incorporating all of the aspects of quality, including quality metadata, into one place. | The missing model elements have been reported to ISO and the ISO model will be revised. S-100 will just need to ensure that the correct references are made to 19138 in S100. A correct model is available in the associated file.  In the next version of S-100 the quality references and structure should be revised to use ISO 19157 | Defer to 2.1.0 with official proposal for S-100 working group discussion |
|  | CHS 33 | Part 5 | Figure 5-A1 & Table A.1 | Te | For the class S100\_FC\_FeatureCatalogue the table A.1 describes three roles. However, the relation to the class MD\_ClassificationCode is not shown in Figure 5-A1 and the target class MD\_ClassificationCode is not shown. | Show the class . MD\_ClassificationCode in Figure 5-A1 and show the relationship.  Also create a table in Part 5 that describes the class MD\_ClassificationCode indicating that it comes from ISO 19115:2006 (corrigenda). Note: although there is a later version of this class defined in ISO 19115-1:2014 one cannot just reference that class without updating all the references to all of the other metadata classes taken from ISO used in S-100. | Agreed |
|  | CHS 34 | Part 5 | Figure 5-A1 & Table A.4 | Ed/Te | The description in table A.4 says that the class S100\_FC\_Item is an abstract class. The class should have the stereotype <abstract>. | Use the stereotype <abstract>. | Agreed |
|  | CHS 35 | Part 5 | Figure 5-A1 & Table A.4 | Te | The description in table A.4 says that the class S100\_FC\_Item has four attributes; however, the model as shown in Figure 5-A1 shows five attributes. | Determine if the extra attribute *code* should be added to the table or deleted from the model. | Not Applicable – code is both in the table and in the diagram |
|  | CHS 36 | Part 5 | Figure 5-A1 & Table A.4 | Te | Table A.4 indicates a relation with the class FC\_DefinitionReference that is not shown in Figure 5-A1. | Determine whether the table or the figure is correct. | Table is correct. The relation was deleted when the model was rebuilt. Amended figure to reflect this |
|  | CHS 37 | Part 5 | Figure 5-A1 & Table A.5 | Ed/Te | The description in table A.5 says that the class S100\_FC\_NamedType is an abstract class. The class should have the stereotype <abstract>. | Use the stereotype <abstract>. | Agreed |
|  | CHS 38 | Part 5 | Figure 5-A1 & Table A.6 | Ed/Te | The description in table A.6 says that the class S100\_FC\_ObjectType is an abstract class. The class should have the stereotype <abstract>. | Use the stereotype <abstract>. | Agreed |
|  | CHS 39 | Part 5 | Figure 5-A1 & Table A.8 | Te | The class S100\_FC\_FeatureType in the model, as shown in Figure 5-A1 has only one attribute, whereas Table A.8 has two attributes. | Determine whether the attribute *permittedPrimitives* should be in the model and in Figure 5-A1 or removed from Table A.8. Note that this is the only reference to the class S100\_FC\_SpatialPrimitiveType which is described as a class in the model. | Table is correct. The relation was deleted when the model was rebuilt. Amended Figure to reflect this |
|  | CHS 40 | Part 5 | Figure 5-A1 & Table A.16 | Te | The description in table A.16 does not include a description of the relation to the class S100\_FC\_ListedValue although that relation is shown in the model in Figure 5-A1. However it includes an attribute *permittedValues*. | Determine whether the relation to the class S100\_FC\_ListedValue should be done with the attribute *permittedValues or via a relation with the role permittedValues.* | It appears that the attribute permittedValues was omitted in the diagram as it is in the table. Amended the diagram to include this attribute. |
|  | CHS 41 | Part 5 | Figure 5-A1 & Table A.20 | Te | The class S100\_FC\_SpatialPrimitive should be a code list rather than an enumeration since the list can be extended. It was extended from S-100 V1. | Make the class a code list. | Defer to 2.1.0 with official proposal for S-100 working group discussion |
|  | CHS 42 | Part 5 | Figure 5-A1 & Table A.20 | Ed/Te | In class S100\_FC\_SpatialPrimitive the type of the primitives as described in table A.20 for the new attributes *arcByCentrePoint* and *circleBy CentrePoint* are GM\_Curve with constraints. These constraints need to be documented in the model and shown in a note. | Include the constraints in a note. | Agreed |
|  | CHS 43 | Part 5 | Figure 5-A1 & Table A.20 | Te | In class S100\_FC\_SpatialPrimitive in Figure 5-A1 the list of attributes is different than the list in the table A.20. The list in the table includes the type coverage. This is correct since it allows for backward compatibility with S-100 V1. It is also correct since a coverage is a type of feature and could be listed in a feature catalogue. Table A.20 is missing the type of the primitive as CV\_Coverage, although this was in S-100 V1. | Include the code list entry coverage in the class S100\_FC\_SpatialPrimitive with the type CV\_Coverage. | This was an oversight when the diagram was rebuilt. Agreed |
|  | CHS 44 | Part 5 | Figure 5-A1 | Te | The class S100\_FC\_FeatureUseType is shown in Figure 5-A1 and used in the model in the attribute featureUseType in class S100\_FC\_FeatureType; however, it is not described in S-100. The class is very similar to the class S100\_CD\_FeatureUseType described in S100 Part 2 | Either directly use the class S100\_CD\_FeatureUseType in the model in Part 5 or add a table to Part 5 to describe the class S100\_FC\_FeatureUseType (and reconcile this table with the class S100\_CD\_FeatureUseType) . The relationship between the classes S100\_FC\_FeatureUseType and S100\_CD\_FeatureUseType needs to be explained in the document text. | It should be S100\_CD\_FeatureUseType. S100\_FC\_FeatureUseType does not exist. |
|  | CHS 45 | Part 5 | Figure 5-A1 | Te | The class S100\_FC\_FeatureAttributeDataType is shown in Figure 5-A1 and used in the model in the attribute dataType in class S100\_FC\_SimpleAttribute; however, it is not described in S-100. | Add a table to Part 5 to describe the class S100\_FC\_FeatureAttributeDataType. | It should be S100\_CD\_FeatureAttributeDataType – This was a typo when the UML was rebuilt. Updated the model |
|  | CHS 46 | Part 5 | Figure 5-A1 | Te | The class S100\_FC\_AttributeConstraints is shown in Figure 5-A1 and used in the model as a relation to class S100\_FC\_Simple\_Attribute however it is not described in S100. The class is very similar to the class S100\_CD\_AttributeConstraints described in S100 Part 2 but has one less attribute. | Either directly use the class S100\_CD\_AttributeConstraints in the model in Part 5 or add a table to Part 5 to describe the class S100\_FC\_ AttributeConstraints (and reconcile this table with the class S100\_CD\_AttributeConstraints). The relationship and the reason for the difference in attribution between the classes S100\_FC\_ AttributeConstraints and S100\_CD\_ AttributeConstraints needs to be explained in the document text. | It should be S100\_CD\_Attribute constraints. Updated the model |
|  | CHS 47 | Part 6 | Figure 6-1 | Te | Figure 6-1 The CRS packages diagram is not in align with the ISO harmonized model. The package Coordinate Datums is called Datums in ISO and the ISO packages contain additional classes. Since these packages are inherited directly from ISO they must match the ISO packages. | Align with the ISO packages, or define derived S-100 packages that inherit only some classes from ISO. | Defer to 2.1.0 with official proposal for S-100 working group discussion |
|  | CHS 48 | Part 6 | Figure 6-1 | Te | Figure 6-1 One cannot establish new relationships which implicitly change the ISO classes. The ISO classes cannot depend on an external non ISO class. The ISO package Identified Object must be used exactly as defined in ISO. One cannot create a new dependency in ISO on an external class. | Structure the packages so that the ISO model in not altered by the S100 model. See associated Figure..  The simplest approach is to ensure that the S100 class is a subtype of the ISO class. | Defer to 2.1.0 with official proposal for S-100 working group discussion as Part 6 did not change from edition 1.0.0 to 2.0.0. |
|  | CHS 49 | Part 6-4.1 | Figure 6-2  Clause 6.4.1.1 | Te | The class S100\_IO\_IdentifiedObject cannot be a new root for the ISO classes that are shown in subsequent figures to be subtypes of it. That changes the ISO model. The class S100\_IO\_IdentifiedObject needs to be a subtype of ISO 19111 IO\_IdentifiedObject.  The description in clause 6-4.1.1 says that “Different from ISO 19111 this class is not derived from an external document but uses members defined by external standards. In addition, no other class in this part is derived from external standards.” | The S-100 model cannot change the meaning of an ISO class. To have a new class S100\_IO\_IdentifiedObject then all of the subtypes will have to be new classes with an S100 identifier. Either the model needs to be changed so that many of the classes in this section are realisations of the corresponding ISO classes or the ISO class needs to be used directly and appropriate constraints defined to effect the objective or the S100 class needs to be a direct subclass of the ISO class. | Defer to 2.1.0 with official proposal for S-100 working group discussion as Part 6 did not change from edition 1.0.0 to 2.0.0. |
|  | CHS 50 | Part 6-4.1 | Figure 6-2  Table 6-2 | Te | The class S100\_IO\_IdentifiedObject has the attributes alias. In Figure 6-2 this attribute has the type Character String, whereas in ISO 19111 and in S-100 Table 6-2 the type of the attribute is GenericName. | The attribute should have the type GenericName to align with ISO, and for S100 Table 6-2 to align with Figure 6-2. However the ISO class GenericName does return a CharacterString (through a operation) so the result is equivalent. | Defer to 2.1.0 with official proposal for S-100 working group discussion as Part 6 did not change from edition 1.0.0 to 2.0.0. |
|  | CHS 51 | Part 6 -4.3 Part 6 -4.4 Part 6 -4.5 Part 6 -4.6 | Figure 6-3 Figure 6-4 Figure 6-5 Figure 6-6 | Te | The class S100\_IO\_IdentifiedObject cannot be a new root for the ISO classes that are shown in subsequent figures to be subtypes of it. That changes the ISO model. The class S100\_IO\_IdentifiedObject needs to be a subtype of ISO 19111 IO\_IdentifiedObject. | If S100\_IO\_IdentifiedObject is a subtype of the ISO class IO\_IdentifiedObject then Figures 6-2, 6-4, 6-5 and 6-6 are valid because a subtype of a subtype is a subtype of the supertype .  If the intent is to make the S-100 use of the ISO standard simpler then constraints can be added in S-100. | Defer to 2.1.0 with official proposal for S-100 working group discussion as Part 6 did not change from edition 1.0.0 to 2.0.0. |
|  | CHS 52 | Part 6 -4.3 | Figure 6-3 | Te | In S-100 the class SC\_CRS has the additional attribute domainOfValitity whereas this attribute does not exist in the ISO standard. | Align with the ISO standard.  If the attribute is necessary subtype the ISO class to add the attribute. | Defer to 2.1.0 with official proposal for S-100 working group discussion as Part 6 did not change from edition 1.0.0 to 2.0.0. |
|  | CHS 53 | Part 6 -4.4 | Figure 6-4 | Te | In the class CS\_CoordinateSystemAxis the attribute axisSymbol is called axisAbbrev in the ISO standard.  The class CSRangeMeaning is a <codeList > in the ISO standard rather than an <enumeration>.  The class CS\_AxisDirection is a codeList in the ISO standard rather than an <enumeration> and has additional code list entries.. | Use the ISO defined attributes and class stereotypes. | Defer to 2.1.0 with official proposal for S-100 working group discussion as Part 6 did not change from edition 1.0.0 to 2.0.0. |
|  | CHS 54 | Part 6 -4.5 | Figure 6-5 | Te | The class CD\_PixelInCell has the stereotype <codeList> in ISO and <enumeration> in S100. | Use the ISO defined class stereotype. | Defer to 2.1.0 with official proposal for S-100 working group discussion as Part 6 did not change from edition 1.0.0 to 2.0.0. |
|  | CHS 55 | Part 6 -4.6 | Figure 6-6 | Te | In S100 the class CC\_OperationParameter has a subtype relationship to the class S100\_IO\_IdentifiedObject. This relationship does not exist in the ISO standard.  In S100 the class CC\_OperationParameter has a aggregation relationship to the class CC\_OperationMethod. This relationship does not exist in the ISO standard.  In S100 the class CC\_OperationParameterValue has a aggregation relationship to the class CC\_SingleOperation. This relationship does not exist in the ISO standard. | Since these are relationships between ISO classes (or in the case of S100\_IO\_IdentifiedObject a subtype of an ISO class), the relationships must match those in ISO. The ISO model cannot be changed.  If additional relationships are necessary these classes need to be subtyped or realized to create S100 classes. | Defer to 2.1.0 with official proposal for S-100 working group discussion as Part 6 did not change from edition 1.0.0 to 2.0.0. |
|  | CHS 56 | Part 6 -4.6 | Figure 6-6 | Te | In S100 the class CC\_OperationMethod only has the attribute formula. In ISO the attribute is named .formulaReference, and there are two additional attributes sourceDimensions and targetDimensions. | Use the ISO defined attributes. | Defer to 2.1.0 with official proposal for S-100 working group discussion as Part 6 did not change from edition 1.0.0 to 2.0.0. |
|  | CHS 57 | Part 6 -4.6 | Figure 6-6 | Te | In S100 the class CC\_PassThroughOperation has the attribute modifiedCoordinates with the type Integer. In ISO the attribute type is Sequence<Integer>. | Use the ISO defined attribute structure. | Defer to 2.1.0 with official proposal for S-100 working group discussion as Part 6 did not change from edition 1.0.0 to 2.0.0. |
|  | CHS 58 | Part 7 -5.1.1 | Figure 7-2 | Te | In S100 the class DirectPosition (which is an ISO class) has the attribute coordinates with the type Real. In ISO the attribute type is Sequence<Number>. Since this class is taken from ISO the ISO attribution must be used.  In S100 the class DirectPosition only has the attribute coordinates . In ISO there is a second derived attribute /dimension with type Integer.  In S100 the class GM\_Position only has the attribute direct with the type DirectPosition. In ISO there is a second attribute indirect with type GM\_PointRef. | Use the ISO defined attributes and attribute structure.  If certain attributes are not to be used then add constraints. | Defer to 2.1.0 with official proposal for S-100 working group discussion.  NOTE: We also need to put a year for which ISO standard was used to insulate S-100 from massive changes from underlying ISO standards |
|  | CHS 59 | Part 7 -5.2 | Figure 7-3 | Te | A number of relationships and attributes differ from those in the published version of the ISO 19107 model. S100 can choose to not use all of the classes and relationships in the ISO model, but it cannot change the ISO model.  In S100 the class GM\_Aggregate is shown as a subtype of GM\_Complex. In the ISO model it is a subtype of GM\_Object and has an aggregation relationship with GM\_Primitive.  In S100 the class GM\_MultiPoint is shown as a component of GM\_Point whereas in the ISO model GM\_Point is a set of DirectPositions and has no relationship with GM\_Point..  S100 shows GM\_OrientableSurface and GM\_OrientableCurve as direct subtypes of GM\_Primitive. ISO has an intermediate class of GM\_OrientablePrimitive. The subtyping is not equivalent because there is a composition relationship between GM\_OrientablePrimitive and GM\_Primitive. | S100 can choose to not use all of the classes and relationships in the ISO model, but it cannot change the ISO model. The S100 model needs to align with the ISO model.  Change the relationships to align with the ISO model. | Defer to 2.1.0 with official proposal for S-100 working group discussion.  NOTE: We also need to put a year for which ISO standard was used to insulate S-100 from massive changes from underlying ISO standards |
|  | CHS 60 | Part 7 -5.2 | Figure 7-3 | Te | In S100 the class GM\_SurfaceInterpolation is stereotyped as an <enumeration> whereas ISO has the class as a <codeList> (which is extensible) and includes additional entries.  In S100 the class GM\_CurveInterpolation is stereotyped as an <enumeration> whereas ISO has the class as a <codeList> (which is extensible) and includes additional entries. | Change the relationships to align with the ISO model. | Defer to 2.1.0 with official proposal for S-100 working group discussion.  NOTE: We also need to put a year for which ISO standard was used to insulate S-100 from massive changes from underlying ISO standards |
|  | CHS 61 | Part 7 -5.2 | Figure 7-3 | Te | S100 shows GM\_Curve to have the attribute boundary with type GM\_CurveBoundary. ISO does not have this attribute. The curve is only composed of the GM\_CurveSegment objects. | Remove the attribute to align with the ISO model. | Defer to 2.1.0 with official proposal for S-100 working group discussion.  NOTE: We also need to put a year for which ISO standard was used to insulate S-100 from massive changes from underlying ISO standards |
|  | CHS 62 | Part 8 -7.1.4 | Figure 8-23 | Te | S100 shows the class CV\_GridValuesMatrix to have the attribute gridRange with type CV\_GridRange. ISO does not have this attribute on this class. | Remove the attribute to align with the ISO model. | Defer to 2.1.0 with official proposal for S-100 working group discussion as Part 8 did not change from edition 1.0.0 to 2.0.0.  NOTE: We also need to put a year for which ISO standard was used to insulate S-100 from massive changes from underlying ISO standards |
|  | CHS 63 | Part 8 -7.1.4 | Figure 8-23 | Ed | S100 shows the operations as part of the class CV\_RectifiedGrid . Showing the operations on this one class is unnecessary. | Do not show the operations. | Defer to 2.1.0 with official proposal for S-100 working group discussion as Part 8 did not change from edition 1.0.0 to 2.0.0. |
|  | CHS 64 | Part 8 -7.2 | Figure 8-24 | Ed/Te | S100 shows the operations as part of the classes CV\_RectifiedGrid and CV\_ReferencableGrid. Showing the operations on these classes is useful here since it shows the operations used to effect the transformations. However the ISO model has the operations complete with attributes, whereas S100 does not show any attributes. | If the operations are shown on the classes CV\_RectifiedGrid and CV\_ReferencableGrid then also show the attributes. Specificly :  And | Defer to 2.1.0 with official proposal for S-100 working group discussion as Part 8 did not change from edition 1.0.0 to 2.0.0. |
|  | CHS 65 | Part 8 -8.3 | Figure 8-27  Part8-8.3 par 1 | Ed/Te | Part 8 of S-100 was completed before the ISO 19101-2 Reference Model for Imagery and the ISO 19129 Imagery Gridded and Coverage Data Framework standards. In fact the 19129 standard was created based on major input from IHO. However this means that the final changes in ISO where their standards were being completed are not reflected in S-100. S100 says that Figure 8-27 is “a generalization of ISO 19102-2”. This is not the case. No figure even remotely like Figure 8-27 appears in ISO 19102-2. | Remove the sentence “This figure is a generalization of ISO 19102-2.” From S100. | Defer to 2.1.0 with official proposal for S-100 working group discussion as Part 8 did not change from edition 1.0.0 to 2.0.0.  NOTE: We also need to put a year for which ISO standard was used to insulate S-100 from massive changes from underlying ISO standards |
|  | CHS 66 | Part 8 -8.3 | Figure 8-27  Part8-8.3 par 2 | Te | Many of the relationships in Figure 8-27 do not exist in ISO, or are much more complex involving intermediate classes. Since this figure shows only ISO classes S-100 must use the relations that are defined in ISO. Only on S100 classes can additional relations or attributes be added. | Since there is no corresponding ISO model elements this entire figure is misleading. It should be entirely replaced with a new figure derived from the ISO 19129 Figure 7. See attached file.  The text of Part 8-8.3 par 2 will need some minor rewriting to accommodate this change.  Also the text of Part 8-8.3 par 2 is out of date since ISO 19115-2 has been published so there will also need to be some minor changes to accommodate this. | Defer to 2.1.0 with official proposal for S-100 working group discussion as Part 8 did not change from edition 1.0.0 to 2.0.0. |
|  | CHS 67 | Part 8 -11.1 | Figure 8-28 | Te | The relationships and attributes in the ISO 19129 standard are different than those in S100 part 8. Since this figure uses all ISO classes the relationships and attributes must match ISO.  The class IF\_QuadGriddedData is related to CV\_ContinuousQuadrilateralGridCoverage by a Realization relationship rather than a Specialization relationship, and there are additional attributes.  For the classes CV\_GridValueCell, CV\_GridValuesMatrix, and CV\_GridPointValuePair the inherited attributes need to be shown since they are relevant.  All of the supporting classes are stereotyped <codeList> not <enumeration> in ISO. | Figure 8-29 should be revised to match the ISO model. See attached file. | Defer to 2.1.0 with official proposal for S-100 working group discussion as Part 8 did not change from edition 1.0.0 to 2.0.0. |
|  | CHS 68 | Part 8 -11.4 | Figure 8-29 | Te | The relationships and attributes in the ISO 19129 standard are different than those in S100 part 8. Since this figure uses all ISO classes the relationships and attributes must match ISO.  The class IF\_RiemannGriddedData is related to CV\_ContinuousQuadrilateralGridCoverage by a Realization relationship rather than a Specialization relationship, and there are additional attributes.  For the classes CV\_GridValueCell, CV\_GridValuesMatrix, and CV\_GridPointValuePair the inherited attributes need to be shown since they are relevant.  All of the supporting classes are stereotyped <codeList> not <enumeration> in ISO. | Figure 8-29 should be revised to match the ISO model. See attached File.. | Defer to 2.1.0 with official proposal for S-100 working group discussion as Part 8 did not change from edition 1.0.0 to 2.0.0.  NOTE: We also need to put a year for which ISO standard was used to insulate S-100 from massive changes from underlying ISO standards |
|  | CHS 69 | Part 8 -11.4 | Figure 8-30 | Ed | This figure is essentially a duplicate for Figure 8-F1. All that is needed in this figure is the introduction of one relationship. The figure should be simplified so that it shows that one relationship and does not duplicate Figure 8-F1 | Figure 8-30 should be simplified. See attached File | Defer to 2.1.0 with official proposal for S-100 working group discussion as Part 8 did not change from edition 1.0.0 to 2.0.0. |
|  | CHS 70 | Part 8 –Appendix 8-F | Figure 8-F1 | Ed | For the classes CV\_GridValuesMatrix, and CV\_GridPointValuePair the inherited attributes need to be shown since they are relevant. | Figure 8-F1 should be revised to show the inherited attributes. | Defer to 2.1.0 with official proposal for S-100 working group discussion as Part 8 did not change from edition 1.0.0 to 2.0.0. |
|  | CHS 71 | Part 8 –Appendix 8-F | Figure 8-F.2 | Te | Part 8 of S-100 was completed before the ISO ISO 19129 Imagery Gridded and Coverage Data Framework standards. The classes IF\_FeatureGridValuesMatrix and IF\_ImageGridValuesMatrix are not part of the ISO standard so they cannot used in this model. Two new S100 classes S100\_FeatureGridValuesMatrix and S100\_ImageGridValuesMatrix need to be created and these become realizations of CV\_GridValuesMatrix. | Figure 8-F.2 should be revised to show the new classes replacing the non-existent ISO classes. See Appendix 6. | Defer to 2.1.0 with official proposal for S-100 working group discussion as Part 8 did not change from edition 1.0.0 to 2.0.0.  NOTE: We also need to put a year for which ISO standard was used to insulate S-100 from massive changes from underlying ISO standards |
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