## A.2 Conformance classes – Logical Model

### A.2.1 Conformance class: 8.2 GeoSciML Core Abstract

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| **Conformance Class** | /conf/gsml4-core | |
| **Requirements** | /req/gsml4-core | |
| **Dependency** | Urn:iso:dis:iso:19156:clause:A.1.1 | |
| **Test** | **/conf/gsml4-core/uml-entity-name** | |
| **Requirement** | /req/gsml4-core/uml-entity-name |
| **Test purpose** | Ensure that the names used in the target implementation matches the names in the logical model |
| **Test method** | Visual inspection that, when possible, name used in the target implementation matches the names in the logical model. |
| **Test type** |  |
| **Test** | **/conf/gsml4-core/uml-cardinality** | |
| **Requirement** | /req/gsml4-core/uml-cardinality |
| **Test purpose** | Ensure that the cardinalities of the properties are the same as the logical model |
| **Test method** | Visually inspect the target implementation and validate that all properties have the same cardinality as the one expressed in the logical model. |
| **Test type** |  |
| **Test** | **/conf/gsml4-core/uml-abstract** | |
| **Requirement** | /req/gsml4-core/uml-abstract |
| **Test purpose** | Ensure that target implementation does not allow materialisation of abstract classes |
| **Test method** | Visually inspect the target implementation and validate that no classifiers (Feature, Type or Datatype) marked as abstract can be materialised. |
| **Test type** | Capability |
| **Test** | **/conf/gsml4-core/uml-polymorphism** | |
| **Requirement** | /req/gsml4-core/uml-polymorphism |
| **Test purpose** | Ensure that target implementation has mechanisms to allow type substitutions for property values. |
| **Test method** | Visually check the target implementation for properties that have value types at the head of substitution group also accept subtypes as valid values |
| **Test type** | Capability |
| **Test** | **/conf/gsml4-core/quantities-uom** | |
| **Requirement** | /req/gsml4-core/quantities-uom |
| **Test purpose** | Ensure that quantities have a governed units of measure |
| **Test method** | Visually check that the target implementation has a mechanism to enforce a unit of measure from a governed source. |
| **Test type** | Capability |
| **Test** | **/conf/gsml4-core/codelist** | |
| **Requirement** | /req/gsml4-core/codelist |
| **Test purpose** | Ensure that vocabulary are governed |
| **Test method** | Visually check that the target implementation has a mechanism to enforce a vocabulary from a governed source |
| **Test type** | Capability |

### A.2.1 Conformance class: Portrayal Abstract Class

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| **Conformance Class** | /conf/gsml4-portrayal | |
| **Requirements** | /req/gsml4-portrayal | |
| **Dependency** | /req/gsml4-core | |
| **Test** | /conf/gsml4-portrayal/geomtype | |
| **Requirement** | /req/gsml4-portrayal/geomtype |
| **Test purpose** | Ensure that the target implementation only allow a single geometry per instance |
| **Test method** | Visual inspection that the target implementation has a mechanism to limit a single geometry per instance |
| **Test type** |  |
| **Test** | **/conf/gsml4-portrayal/string** | |
| **Requirement** | /req/gsml4-portrayal/string |
| **Test purpose** | Ensure that human readable string are allowed in all properties of type CharacterString |
| **Test method** | Visual inspection that the target implementation does not prevent human readable string (by ensuring that property data types are used) |
| **Test type** |  |
| **Test** | **/conf/gsml4-portrayal/formal-syntax** | |
| **Requirement** | /req/gsml4-portrayal/formal-syntax |
| **Test purpose** | Ensure that string can use formal syntax |
| **Test method** | Visual inspection that the target implementation can accommodate a documented formal syntax that will allow parsing of the content. |
| **Test type** |  |
| **Test** | **/conf/gsml4-portrayal/datetime** | |
| **Requirement** | /req/gsml4-portrayal/datetime |
| **Test purpose** | Ensure that all representation of date and time uses ISO8601 |
| **Test method** | Visual inspection that the target implementation has mechanism or rules to enforce the usage of ISO8601 date and time |
| **Test type** |  |
| **Test** | **/conf/gsml4-portrayal/uri** | |
| **Requirement** | /req/gsml4-portrayal/uri |
| **Test purpose** | Ensure that all properties ending in URI contain a URI |
| **Test method** | Check that the target implementation enforce the content to RFC 3986 |
| **Test type** |  |
| **Test** | **/conf/gsml4-portrayal/**user-defined | |
| **Requirement** | /req/gsml4-portrayal/user-defined |
| **Test purpose** | Ensure that user defined properties conform to GML Simple Feature Level 0 |
| **Test method** | Check that the target implementation enforce user defined properties to be conform to GML Simple Feature Level 0 |
| **Test type** |  |
| **Test** | **/conf/gsml4-portrayal/**geologicunitview-identifier-unique | |
| **Requirement** | /req/gsml4-portrayal/geologicunitview-identifier-unique |
| **Test purpose** | Ensure that the identifier is unique for the dataset |
| **Test method** | Check that the target implementation implement a unique key constrain or mechanism to ensure that identifier property is unique. |
| **Test type** |  |
| **Test** | **/conf/gsml4-portrayal/**geologicunitview-representativeLithology | |
| **Requirement** | /req/gsml4-portrayal/geologicunitview-representativeLithology |
| **Test purpose** | Ensure that the geologic unit view representative lithology come from a controlled vocabulary |
| **Test method** | Check that the target implementation implements a mechanism to ensure that the term comes from a controlled vocabulary |
| **Test type** |  |
| **Test** | **/conf/gsml4-portrayal/**geologicunitview-representativeAge | |
| **Requirement** | /req/gsml4-portrayal/geologicunitview-representativeAge |
| **Test purpose** | Ensure that the geologic unit view representative age come from a controlled vocabulary |
| **Test method** | Check that the target implementation implements a mechanism to ensure that the term comes from a controlled vocabulary |
| **Test type** |  |
| **Test** | **/conf/gsml4-portrayal/**geologicunitview-representativeOlderAge | |
| **Requirement** | /req/gsml4-portrayal/geologicunitview-representativeOlderAge |
| **Test purpose** | Ensure that the geologic unit view representative older age come from a controlled vocabulary |
| **Test method** | Check that the target implementation implements a mechanism to ensure that the term comes from a controlled vocabulary |
| **Test type** |  |
| **Test** | **/conf/gsml4-portrayal/**geologicunitview-representativeYoungerAge | |
| **Requirement** | /req/gsml4-portrayal/geologicunitview-representativeYoungerAge |
| **Test purpose** | Ensure that the geologic unit view representative older age come from a controlled vocabulary |
| **Test method** | Check that the target implementation implements a mechanism to ensure that the term comes from a controlled vocabulary |
| **Test type** |  |
| **Test** | **/conf/gsml4-portrayal/**boreholeview-elevationSrs | |
| **Requirement** | /req/gsml4-portrayal/boreholeview-elevationSrs |
| **Test purpose** | Ensure that the elevation is using a valid SRS |
| **Test method** | Check that the target implementation implements a proper CRS reference to a EPSG vertical datum |
| **Test type** |  |
| **Test** | **/conf/gsml4-portrayal/**contactview-contacttype | |
| **Requirement** | /req/gsml4-portrayal/contactview-contacttype |
| **Test purpose** | Ensure that the contact’s contact type come from a controlled vocabulary |
| **Test method** | Check that the target implementation implements mechanism to ensure that the term comes from a controlled vocabulary. |
| **Test type** |  |