AGI Standards Committee

Metadata Working Group

Schematron Error Descriptions

# Document Control

Change Summary

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| 1.3 | 2018-07-03 | James Passmore | Changes following review of GEMINI 2.3 |
| 1.4 | 2018-07-19 | James Passmore | Fix to abstract test for service metadata |

References

|  |  |
| --- | --- |
| Ref. | Title/Version/Publication Date/Author |
| [1] | UK GEMINI, Specification for discovery metadata for geospatial data resources, Version 2.3, AGI, <http://www.agi.org.uk/uk-gemini/> |
| [2] | UK GEMINI Encoding Guidance, Technical guidance on the encoding of UK GEMINI using XSD Schemas, |
| [3] | UK GEMINI Schematron Schema Guidance, An introduction to the UK GEMINI 2 Schematron Schema, version 1.4, April 2018 |
| [4] | XML in a Nutshell, Second Edition, June 2002, Elliotte Rusty Harold and W. Scott Means |
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# Introduction

## Purpose of document

1. The purpose of this document is to give ‘plain English’ explanations of the constraints that exist in the GEMINI 2.3 Schematron schema and how they work in the context of GEMINI 2.3 metadata instances. This edition of this document relates to the Schematron rules GEMINI\_2.3\_Schematron\_Schema-v1.0
2. Schematron is an XML technology described as a Document Schema Definition Language (DSDL). It provides a mechanism for applying rules based constraints to XML documents and reporting the level of conformance. A Schematron schema is encoded in XML and uses other XML technologies such as XPath to define constraints, so it might be described as human-readable and self-documenting. Knowledge of the constituent technologies is needed, however, in order to understand the meaning of a constraint.
3. This document aims to translate every constraint in the GEMINI Schematron schema in to more easily understandable language. Each section of this document explains one constraint from the Schematron schema, in plain English. A section presents the error message, the XML context within which the constraint works, the cause of the constraint failing and gives relevant examples of XML showing failure cases and success cases.

## Scope

1. The scope of this document is the Schematron schema (version 2.3) used for validating XML encoded metadata conforming to the UK GEMINI 2.3 standard [1] (henceforth referred to as GEMINI).
2. Outside the scope of this document is the description of GEMINI metadata items, their content, obligation and meaning. Readers seeking this information should consult the GEMINI standard [1]. Examples of XML encoding are given but the scope of this document does not cover encoding explicitly. Readers seeking information on XML and the encoding of GEMINI should consult the UK GEMINI Encoding Guidance [2].
3. This document does not cover the concepts of the Schematron validation language. Readers seeking this information should consult the UK GEMINI Schematron Schema Guidance [3].

## Assumed knowledge

1. The intended audience includes people responsible for creating and validating GEMINI metadata instances. It is hoped that in providing clear explanations of the constraints and their error messages, users will be assisted in creating valid GEMINI metadata. Readers will necessarily need some understanding of XML[[1]](#footnote-1), the UK GEMINI standard [1], metadata encoding guidance [2] and the UK GEMINI Schematron schema [3].

## Terminology

#### Assertion

1. A statement that a logical test is true.

#### Attribute

1. An attribute is a name-value pair attached to an element’s start tag [4].
2. <element **attribute=”attribute value”**/>

#### Element

1. An XML element is an item in an *XML document* consisting of a start tag and an end tag. XML elements may contain content which may ba a value or other elements (but not both in a data centric *XML document*) and may have associated *attributes*.

<element>value</element>

<element>

<child>value</child>

</element>

#### GEMINI

1. The UK discovery metadata profile of ISO 19115.

#### GML

1. Geography Markup Language – an XML language for encoding feature types with geometry and other attributes. GML is included in ISO 19139 to encode temporal types [ISO 19136]

#### INSPIRE

1. Infrastructure for Spatial Information in Europe

#### ISO

1. International Organisation for Standardisation

#### Mandatory

1. The obligation on the creator of metadata to provide a metadata item. The obligation is defined at a number of levels: at the lowest level this is ISO 19115 but obligations may be redefined by subsequent standards in the hierarchy. A metadata item must be provided if its obligation is mandatory. XML elements that are used to encode metadata items inherit the obligation and that obligation might be tested by an XSD schema or some other constraining schema such as Schematron.

#### Metadata Instance

1. Physically instantiated metadata.
2. In the context of this document a metadata instance will be an *XML* *document* conforming to ISO / TS 19139 and other associated standards.

#### Metadata Item

1. A top level metadata concept in the UK GEMINI standard. Title, for example, is a metadata item.
2. Metadata items may comprise sub-items.

#### Nillable

1. This term is used to indicate whether the contents of a mandatory metadata item can be left out. The ISO 19139 schema has all elements nillable; the Schematron schema reduces this to a small number, failing others if they are empty. ISO 19139 does not use the XML nil value approach, functionally extending this by requiring a reason to be given if a mandatory item is empty in a metadata instance. See "nil reason".

#### Nil Reason

1. A Nil Reason is expressed in XML encoded metadata using the gco:nilReason attribute. This attribute can be added to elements in the XML to show why a value can not be provided for the element. The valid values are defined in the underlying schema:

* inapplicable – there is no value
* missing – the correct value is not readily available to the sender of this data. Furthermore, a correct value may not exist
* template – the value will be available later
* unknown – the correct value is not known to, and not computable by, the sender of this data. However, a correct value probably exists
* withheld – the value is not divulged
* other:[text] – other brief explanation, where [text] is a string of two or more characters with no included spaces
* anyURI – which should refer to a resource which describes the reason for the exception

#### String

1. A string is a sequence of characters. An empty string has no characters.

#### UML®

1. Unified Modelling Language™

#### UUID

1. A universally unique identifier, also known as a GUID (Globally Unique Identifier) is a unique 128-bit integer that is represented as a 36 (or 32 ignoring the dashes) character string of hexadecimal numbers. UUIDs are system generated and ideally a UUID will never be generated twice by any computer in existence.
2. Format: xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx
3. Example: 3ce4f380-b394-4e5d-b222-6914ea311156

#### XML

1. eXtensible Markup Language.
2. The XML specification can be found at <http://www.w3.org/TR/REC-xml/>

#### Xml Document

1. A collection of data represented in XML.

#### XSD

1. XML Schema Definition Language. An XSD is a document written in XML that defines the structure of an XML document.

#### 1089/2010

1. Commission Regulation (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services

#### 976/2009

1. Commission Regulation (EC) No 976/2009 of 19 October 2009 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards the Network Services

# Error Description Structure

## Introduction

1. Each exception, which has potential to be raised during a Schematron validation, will be described under the headings: Error Message, Context, Cause, Example – fail, Example – success and Schematron pattern. The headings are described in the following sections.

## Error Message

1. The error message shows the text that is presented to the user if an assertion fails, rendering the XML instance invalid.

## Context

1. The context corresponds to the location in the XML instance where the assertion fires. The context will be expressed in terms of ISO 19115 classes and properties, starting at the level of the class MD\_Metadata.
2. The context will be expressed in the following way: ClassName.propertyName > ClassName.propertyName
3. For example: MD\_Metadata.identificationInfo > MD\_DataIdentification
4. See Appendix 1 for more detail on the derivation of the context expression.

## Cause

1. The cause describes the case or cases that would result in the assertion failing.

## Example – fail

1. An example of invalid XML is given. The XML will be abbreviated, with missing content indicated by an ellipsis. No namespace declarations will be made.

## Example – success

1. An example of valid XML is given. It will be abbreviated in the same way.

## Schematron pattern

1. The Schematron pattern will be shown as below, for example. More information on Schematron patterns is given in Appendix 2.

|  |
| --- |
| <sch:pattern fpi="Gemini2-mi6">  <sch:title>Keyword</sch:title>  <sch:rule context="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]">  <sch:assert test="count(gmd:descriptiveKeywords) &gt;= 1">  MI-6: Descriptive keywords are mandatory.  </sch:assert>  </sch:rule> </sch:pattern> |

# Title

## Title not nillable

### Error message

1. The gmd:title element is not nillable and shall have a value.

### Context

1. MD\_Metadata.identificationInfo > MD\_Identification.citation > CI\_Citation.title

### Cause

1. The element named gmd:title has been assigned a gco:nilReason attribute or the value of the element gmd:title is an empty string.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  <gmd:citation>  <gmd:CI\_Citation>  <gmd:title gco:nilReason="unknown"/>  </gmd:CI\_Citation>  ...  </gmd:citation>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  <gmd:citation>  <gmd:CI\_Citation>  <gmd:title/>  </gmd:CI\_Citation>  ...  </gmd:citation>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  <gmd:citation>  <gmd:CI\_Citation>  <gmd:title>  <gco:CharacterString>A valid dataset title</gco:CharacterString>  </gmd:title>  ...  </gmd:CI\_Citation>  ...  </gmd:citation>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern is-a="TypeNotNillablePattern" id="Gemini2-mi1-NotNillable">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:citation/\*[1]/gmd:title" /> </sch:pattern>  <!-- Test that an element has a value - the value is not nillable --> <sch:pattern abstract="true" id="TypeNotNillablePattern">  <sch:rule context="$context">  <sch:assert test="string-length(.) &gt; 0 and count(./@gco:nilReason) = 0">  AP-2: The <sch:name/> element is not nillable and shall have a value.  </sch:assert>  </sch:rule> </sch:pattern> |

# Alternative title

## Alternative title nillable

### Error message

1. The gmd:alternateTitle element shall have a value or a valid Nil Reason.

### Context

1. MD\_Metadata.identificationInfo > MD\_Identification.citation > CI\_Citation.alternateTitle

### Cause

1. The element named gmd:alternateTitle has either no value or it has a gco:nilReason attribute with an invalid value. The value of the gco:nilReason attribute must be taken from a controlled list.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  <gmd:citation>  <gmd:CI\_Citation>  ...  <gmd:alternateTitle gco:nilReason="invalidvalue"/>  ...  </gmd:CI\_Citation>  ...  </gmd:citation>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  <gmd:citation>  <gmd:CI\_Citation>  ...  <gmd:alternateTitle/>  ...  </gmd:CI\_Citation>  ...  </gmd:citation>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  <gmd:citation>  <gmd:CI\_Citation>  ...  <gmd:alternateTitle gco:nilReason="unknown"/>  ...  </gmd:CI\_Citation>  ...  </gmd:citation>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  <gmd:citation>  <gmd:CI\_Citation>  ...  <gmd:alternateTitle>  <gco:CharacterString>A valid alternate title</gco:CharacterString>  </gmd:alternateTitle>  ...  </gmd:CI\_Citation>  ...  </gmd:citation>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern is-a="TypeNillablePattern" id="Gemini2-mi2-Nillable">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:citation/\*[1]/gmd:alternateTitle" />  </sch:pattern>  <!-- Test that an element has a value or has a valid nilReason value --> <sch:pattern abstract="true" id="TypeNillablePattern">  <sch:rule context="$context">  <sch:assert test="  (string-length(normalize-space(.)) &gt; 0) or  (@gco:nilReason = 'inapplicable' or  @gco:nilReason = 'missing' or  @gco:nilReason = 'template' or  @gco:nilReason = 'unknown' or  @gco:nilReason = 'withheld' or  starts-with(@gco:nilReason, 'other:'))">  AP-1a: The <sch:name/> element shall have a value or a valid Nil Reason.  </sch:assert>  </sch:rule> </sch:pattern> |

# Dataset Language

## Dataset Language Code

### Error message

1. Language shall be implemented with gmd:LanguageCode.

### Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.language

### Cause

1. The element named gmd:language may have one of two child elements: gco:CharacterString or gmd:LanguageCode. Either is valid according to the ISO 19139 XSD schemas. However, the encoding guidance [2] requires that only the gmd:LanguageCode element is used. The assertion fails if the child element of the element named gmd:language is gco:CharacterString.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:language>  <gco:CharacterString>eng</gco:CharacterString>  </gmd:language>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:language>  <gmd:LanguageCode codeList="http://www.loc.gov/standards/iso639-2/php/code\_list.php" codeListValue="eng">eng</gmd:LanguageCode>  </gmd:language>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern is-a="LanguagePattern" id="Gemini2-mi3-Language">  <sch:param name="context"  value="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:language" />  </sch:pattern>  <!-- Test the language values (Metadata and Resource) --> <sch:pattern abstract="true" id="LanguagePattern">  <sch:rule context="$context">  <sch:assert test="count(gmd:LanguageCode) = 1">  AP-4a: Language shall be implemented with gmd:LanguageCode.  </sch:assert>  </sch:rule> …  </sch:pattern> |

## Dataset Language Code List

### Error message

1. The language code list value is absent. When a dataset has no natural language use code zxx

### Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.language

### Cause

1. The codeListValue attribute of the element gmd:LanguageCode must have a value. This assertion fails if the value of the attribute is an empty string.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:language>  <gmd:LanguageCode codeList="http://www.loc.gov/standards/iso639-2/php/code\_list.php" **codeListValue=""**>eng</gmd:LanguageCode>  </gmd:language>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:language>  <gmd:LanguageCode codeList="http://www.loc.gov/standards/iso639-2/php/code\_list.php" **codeListValue="eng"**>eng</gmd:LanguageCode>  </gmd:language>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |
| Schematron rule <sch:pattern is-a="LanguagePattern" id="Gemini2-mi3-Language">  <sch:param name="context"  value="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:language" /> </sch:pattern>  <!-- Test the language values (Metadata and Resource) --> <sch:pattern abstract="true" id="LanguagePattern"> …  <sch:rule context="$context/gmd:LanguageCode">  <sch:assert test="string-length(@codeListValue) &gt; 0">  AP-4b: The language code list value is absent. When a dataset has no natural language use code zxx  </sch:assert> …  </sch:rule>  </sch:pattern> Dataset language code lengthError message  1. The language code should be three characters  Context  1. MD\_Metadata.identificationInfo > MD\_DataIdentification.language  Cause  1. The codeListValue attribute of the element gmd:LanguageCode must have a value which is exactly three characters long. This assertion fails if the value of the attribute is not a code of three characters.  Example – fail <gmd:language>  <gmd:LanguageCode  codeList="http://www.isotc211.org/2005/resources/codeList.xml#LanguageCode"  codeListValue="**en**"/> </gmd:language> Example – pass <gmd:language>  <gmd:LanguageCode  codeList="http://www.isotc211.org/2005/resources/codeList.xml#LanguageCode"  codeListValue="**eng**"/> </gmd:language> Schematron rule <sch:pattern is-a="LanguagePattern" id="Gemini2-mi3-Language">  <sch:param name="context"  value="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:language"/> </sch:pattern>  <!-- Test the language values (Metadata and Resource) --> <sch:pattern abstract="true" id="LanguagePattern"> …  <sch:rule context="$context/gmd:LanguageCode"> …  <sch:report test="string-length(@codeListValue) != 3">  AP-4c: The language code should be three characters  </sch:report>  </sch:rule> </sch:pattern> ABSTRACT |

## Abstract not nillable

### Error message

1. The gmd:abstract element is not nillable and shall have a value.

### Context

1. MD\_Metadata.identificationInfo > MD\_Identification.abstract

### Cause

1. The element named gmd:abstract has been assigned a gco:nilReason attribute or the value of the element gmd:abstract is an empty string.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:abstract gco:nilReason="unknown"/>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:abstract>  <gco:CharacterString>A valid abstract</gco:CharacterString>  </gmd:abstract>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern is-a="TypeNotNillablePattern" id="Gemini2-mi4-NotNillable">  <sch:param name="context"  value="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:abstract"/> </sch:pattern>  <!-- Test that an element has a value - the value is not nillable --> <sch:pattern abstract="true" id="TypeNotNillablePattern">  <sch:rule context="$context">  <sch:assert test="string-length(.) &gt; 0 and count(./@gco:nilReason) = 0">  AP-2: The <sch:name/> element is not nillable and shall have a value.  </sch:assert>  </sch:rule> </sch:pattern> Abstract shall not be emptyError message  1. A human readable, non-empty description of the dataset, dataset series, or service shall be provided  Context  1. MD\_Metadata.identificationInfo > MD\_Identification.abstract  Cause  1. The element named gmd:abstract has an no textual content.  Example – fail <gmd:abstract>  <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  </gco:CharacterString> </gmd:abstract> Example – pass <gmd:abstract>  <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">This is a basic list of terrestrial habitats that were included in the UK Report in 2013 under the Habitats Directive. Every six years, all EU Member States are required (under Article 17 of the Directive) to report on the implementation of the EU Habitats Directive . The 3rd UK Habitats Directive Report was submitted to the European Commission in 2013. The list includes the code for each habitat, the formal name (with and without formatting characters for italics), The Countries within the UK where that habitat has been recorded and the broad category of each habitat.  </gco:CharacterString> </gmd:abstract> Schematron rule <sch:pattern fpi="metadata/2.0/req/common/resource-abstract">  <sch:title>Abstract free-text element check</sch:title>  <sch:p>A human readable, non-empty description of the dataset, dataset series or service shall be provided</sch:p>  <sch:rule context="//gmd:abstract">  <sch:assert test="normalize-space(.) and \*">  MI-4a: A human readable, non-empty description of the dataset, dataset series, or service shall be provided  </sch:assert>  </sch:rule>  </sch:pattern> Abstract lengthError message  1. Abstract is too short. GEMINI 2.3 requires an abstract of at least 100 characters  Context  1. MD\_Metadata.identificationInfo > MD\_Identification.abstract  Cause  1. The element named gmd:abstract has content, but it is deemed too short (less than 100 charaters, excluding any spaces at the beginning or end of the content), to provide any meaningful information about the resource.  Example – fail <gmd:abstract>  <gco:CharacterString mlns:gco="http://www.isotc211.org/2005/gco">  Wolverhampton City Council Minerals Safeguarding Areas  </gco:CharacterString> </gmd:abstract> Example – pass <gmd:abstract>  <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  Common Land : Land registered as Common Land, for open public access and outdoor recreation, encompassing commoners and local grazing rights.  </gco:CharacterString> </gmd:abstract> Schematron rule <sch:pattern fpi="metadata/2.0/req/common/resource-abstract-len">  <sch:title>Abstract length check</sch:title>  <sch:rule context="//gmd:abstract/\*[1]">  <sch:assert test="string-length() &gt; 99">  MI-4b: Abstract is too short.   GEMINI 2.3 requires an abstract of at least 100 characters, but abstract "<sch:value-of select='normalize-space(.)'/>" has only <sch:value-of select='string-length(.)'/> characters  </sch:assert>  </sch:rule> </sch:pattern> Abstract shall not match TitleError message  1. Abstract must not be the same text as the title  Context  1. MD\_Metadata.identificationInfo > MD\_Identification.abstract  Cause  1. The element named gmd:abstract has content that is exactly the same as the title.  Example – fail <gmd:CI\_Citation>  <gmd:title>  <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  2012 - 2012 Centre for Environment, Fisheries &amp; Aquaculture Science (Cefas) Farnes East - Infauna - 2012  </gco:CharacterString>  </gmd:title>  <gmd:alternateTitle>  <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  INFAUNA  </gco:CharacterString>  </gmd:alternateTitle>  …  <gmd:abstract>  <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  2012 - 2012 Centre for Environment, Fisheries &amp; Aquaculture Science (Cefas) Farnes East - Infauna - 2012  </gco:CharacterString> </gmd:abstract> Example – pass <gmd:citation>  <gmd:CI\_Citation>  <gmd:title>  <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  Timeliness of reporting deaths between 1 July to 31 December 2008  </gco:CharacterString>  </gmd:title>  …  <gmd:abstract>  <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">This dataset as reported to the Rural Payments Agency contains death registrations that have cleared Cattle Tracing System validation, death notifications received between July and December 2007, deaths notified at the time of registration by electronic means for example Cattle Tracing System online, death notifications reported by passports and temporary Pre Printed Application Forms Attribution statement:  </gco:CharacterString> </gmd:abstract> Schematron rule <sch:pattern fpi="metadata/2.0/req/common/resource-abstract-text">  <sch:title>Abstract is not the same as Title...</sch:title>  <sch:rule context="//gmd:abstract/\*[1]">  <sch:let name="resourceTitle" value="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:citation/\*[1]/gmd:title/\*[1][normalize-space()]"/>  <sch:let name="resourceAbstract" value="normalize-space(.)"/>  <sch:assert test="$resourceAbstract != $resourceTitle ">  MI-4c: Abstract "<sch:value-of select='$resourceAbstract'/>" must not be the same text as the title "<sch:value-of select='$resourceTitle'/>")).  </sch:assert>  </sch:rule> </sch:pattern> |

# Topic Category

## Topic category is mandatory

### Error message

1. Topic category is mandatory for datasets and series. One or more shall be provided.

### Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification

### Cause

1. A metadata instance with a hierarchy level of ‘dataset’ or ‘series’ must have one or more topic category codes. This assertion fails if there are no gmd:topicCategory elements and the value of the codeListValue attribute of the gmd:hierarchyLevel element is either ‘dataset’ or ‘series’.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <!--Dataset language-->  <gmd:language>  <gmd:LanguageCode codeList="http://www.loc.gov/standards/iso639-2/php/code\_list.php" codeListValue="eng">eng</gmd:LanguageCode>  </gmd:language>  <!--dataset-->  <gmd:extent>  <gmd:EX\_Extent>  ...  </gmd:EX\_Extent>  </gmd:extent>  <!--Additional information source-->  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <!--Dataset language-->  <gmd:language>  <gmd:LanguageCode codeList="http://www.loc.gov/standards/iso639-2/php/code\_list.php" codeListValue="eng">eng</gmd:LanguageCode>  </gmd:language>  <!--Topic category-->  <gmd:topicCategory>  <gmd:MD\_TopicCategoryCode>boundaries</gmd:MD\_TopicCategoryCode>  </gmd:topicCategory>  <!--dataset-->  <gmd:extent>  <gmd:EX\_Extent>  ...  </gmd:EX\_Extent>  </gmd:extent>  <!--Additional information source-->  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern fpi="Gemini2-mi5">  <sch:title>Topic Category</sch:title>  <sch:rule context="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]">  <sch:assert test="  ((../../gmd:hierarchyLevel[1]/\*[1]/@codeListValue = 'dataset' or  ../../gmd:hierarchyLevel[1]/\*[1]/@codeListValue = 'series') and  count(gmd:topicCategory) >= 1) or  (../../gmd:hierarchyLevel[1]/\*[1]/@codeListValue != 'dataset' and  ../../gmd:hierarchyLevel[1]/\*[1]/@codeListValue != 'series') or  count(../../gmd:hierarchyLevel) = 0">  MI-5a: Topic category is mandatory for datasets and series.  One or more shall be provided.  </sch:assert>  </sch:rule> … </sch:pattern> |

## Topic Category not nillable

### Error message

1. Topic category shall not be null.

### Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.topicCategory

### Cause

1. The element named gmd:topicCategory has been assigned a gco:nilReason attribute or the value of the element is an empty string.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <!--Dataset language-->  <gmd:language>  <gmd:LanguageCode codeList="http://www.loc.gov/standards/iso639-2/php/code\_list.php" codeListValue="eng">eng</gmd:LanguageCode>  </gmd:language>  <!--Topic category-->  <gmd:topicCategory gco:nilReason="missing"/>  <!--dataset-->  <gmd:extent>  <gmd:EX\_Extent>  ...  </gmd:EX\_Extent>  </gmd:extent>  <!--Additional information source-->  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <!--Dataset language-->  <gmd:language>  <gmd:LanguageCode codeList="http://www.loc.gov/standards/iso639-2/php/code\_list.php" codeListValue="eng">eng</gmd:LanguageCode>  </gmd:language>  <!--Topic category-->  <gmd:topicCategory>  <gmd:MD\_TopicCategoryCode>boundaries</gmd:MD\_TopicCategoryCode>  </gmd:topicCategory>  <!--dataset-->  <gmd:extent>  <gmd:EX\_Extent>  ...  </gmd:EX\_Extent>  </gmd:extent>  <!--Additional information source-->  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern fpi="Gemini2-mi5">  <sch:title>Topic Category</sch:title> …  <sch:rule context="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:topicCategory">  <sch:assert test="  ((../../../gmd:hierarchyLevel[1]/\*[1]/@codeListValue = 'dataset' or  ../../../gmd:hierarchyLevel[1]/\*[1]/@codeListValue = 'series') and  count(@gco:nilReason) = 0) or  (../../../gmd:hierarchyLevel[1]/\*[1]/@codeListValue != 'dataset' and  ../../../gmd:hierarchyLevel[1]/\*[1]/@codeListValue != 'series') or  count(../../../gmd:hierarchyLevel) = 0">  MI-5b: Topic Category shall not be null.  </sch:assert>  </sch:rule> </sch:pattern> |

# Keyword

## Descriptive Keywords are mandatory

### Error message

1. Descriptive keywords are mandatory.

### Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.descriptiveKeywords
2. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.descriptiveKeywords

### Cause

1. An MD\_DataIdentification element or an SV\_ServiceIdentification element must have one or more descriptiveKeywords elements in its set of child elements.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:resourceFormat>  ...  </gmd:resourceFormat>  <!--Keyword-->  <!--Limitations on public access-->  <gmd:resourceConstraints>  ...  </gmd:resourceConstraints>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:resourceFormat>  ...  </gmd:resourceFormat>  <!--Keyword-->  <gmd:descriptiveKeywords>  <gmd:MD\_Keywords>  <gmd:keyword>  <gco:CharacterString>Farming, agricultural land</gco:CharacterString>  </gmd:keyword>  <gmd:thesaurusName>  <gmd:CI\_Citation>  <gmd:title>  <gco:CharacterString>IPVS - Integrated Public Sector Vocabulary version 2</gco:CharacterString>  </gmd:title>  <gmd:date>  <gmd:CI\_Date>  <gmd:date>  <gco:Date>2006-04-02</gco:Date>  </gmd:date>  <gmd:dateType>  <gmd:CI\_DateTypeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode" codeListValue="revision">revision</gmd:CI\_DateTypeCode>  </gmd:dateType>  </gmd:CI\_Date>  </gmd:date>  </gmd:CI\_Citation>  </gmd:thesaurusName>  </gmd:MD\_Keywords>  </gmd:descriptiveKeywords>  <!--Limitations on public access-->  <gmd:resourceConstraints>  ...  </gmd:resourceConstraints>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern fpi="Gemini2-mi6">  <sch:title>Keyword</sch:title>  <sch:rule context="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]">  <sch:assert test="count(gmd:descriptiveKeywords) &gt;= 1">  MI-6: Descriptive keywords are mandatory.  </sch:assert>  </sch:rule> </sch:pattern> |

## Keywords are nillable

### Error message

1. The gmd:keyword element shall have a value or a valid Nil Reason.

### Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.descriptiveKeywords > MD\_Keywords.keyword
2. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.descriptiveKeywords > MD\_Keywords.keyword

### Cause

1. The element named gmd:keyword has either no value or it has a gco:nilReason attribute with an invalid value. The value of the gco:nilReason attribute must be taken from a controlled list.

### Example – fail

|  |
| --- |
| <gmd:keyword>  <gco:CharacterString></gco:CharacterString>  </gmd:keyword>  <gmd:keyword/> |

### Example – success

|  |
| --- |
| <gmd:keyword>  <gco:CharacterString>Farming, agricultural land</gco:CharacterString>  </gmd:keyword>  <gmd:keyword gco:nilReason="missing"/> |

### Schematron rule

|  |
| --- |
| <sch:pattern is-a="TypeNillablePattern" id="Gemini2-mi6-Keyword-Nillable">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:descriptiveKeywords/\*[1]/gmd:keyword" />  </sch:pattern>  <!-- Test that an element has a value or has a valid nilReason value --> <sch:pattern abstract="true" id="TypeNillablePattern">  <sch:rule context="$context">  <sch:assert test="  (string-length(normalize-space(.)) &gt; 0) or  (@gco:nilReason = 'inapplicable' or  @gco:nilReason = 'missing' or  @gco:nilReason = 'template' or  @gco:nilReason = 'unknown' or  @gco:nilReason = 'withheld' or  starts-with(@gco:nilReason, 'other:'))">  AP-1a: The <sch:name/> element shall have a value or a valid Nil Reason.  </sch:assert>  </sch:rule> </sch:pattern> |

## Thesaurus title is not nillable

### Error message

1. The gmd:title element is not nillable and shall have a value.

### Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.descriptiveKeywords > MD\_Keywords.thesaurusName > CI\_Citation.title
2. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.descriptiveKeywords > MD\_Keywords.thesaurusName > CI\_Citation.title

### Cause

1. The element named gmd:title has been assigned a gco:nilReason attribute or the value of the element is an empty string. A declaration of the thesaurus is not mandatory but should be given if it is available. Therefore, the thesaurus declaration can be omitted altogether if the title is not known.

### Example – fail

|  |
| --- |
| <gmd:thesaurusName>  <gmd:CI\_Citation>  <gmd:title>  <gco:CharacterString></gco:CharacterString>  </gmd:title>  ...  </gmd:CI\_Citation>  </gmd:thesaurusName> |
| <gmd:thesaurusName>  <gmd:CI\_Citation>  <gmd:title/>  ...  </gmd:CI\_Citation>  </gmd:thesaurusName> |

### Example – success

|  |
| --- |
| <gmd:thesaurusName>  <gmd:CI\_Citation>  <gmd:title>  <gco:CharacterString>IPVS - Integrated Public Sector Vocabulary version 2</gco:CharacterString>  </gmd:title>  ...  </gmd:CI\_Citation>  </gmd:thesaurusName> |

### Schematron rule

|  |
| --- |
| <sch:pattern is-a="TypeNotNillablePattern" id="Gemini2-mi6-Thesaurus-Title-NotNillable">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:descriptiveKeywords/\*[1]/gmd:thesaurusName/\*[1]/gmd:title" />  </sch:pattern>  <!-- Test that an element has a value - the value is not nillable --> <sch:pattern abstract="true" id="TypeNotNillablePattern">  <sch:rule context="$context">  <sch:assert test="string-length(.) &gt; 0 and count(./@gco:nilReason) = 0">  AP-2: The <sch:name/> element is not nillable and shall have a value.  </sch:assert>  </sch:rule> </sch:pattern> |

## Thesaurus date type code list

### Error message

1. The codeListValue attribute does not have a value.

### Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.descriptiveKeywords > MD\_Keywords.thesaurusName > CI\_Citation.date > CI\_Date.dateType
2. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.descriptiveKeywords > MD\_Keywords.thesaurusName > CI\_Citation.date > CI\_Date.dateType

### Cause

1. This assertion fails if the attribute codeListValue of the element gmd:CI\_DateTypeCode does not have a value.

### Example – fail

|  |
| --- |
| <gmd:thesaurusName>  <gmd:CI\_Citation>  ...  <gmd:date>  <gmd:CI\_Date>  ...  <gmd:dateType>  <gmd:CI\_DateTypeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode" **codeListValue=""**>revision</gmd:CI\_DateTypeCode>  </gmd:dateType>  </gmd:CI\_Date>  </gmd:date>  </gmd:CI\_Citation>  </gmd:thesaurusName> |

### Example – success

|  |
| --- |
| <gmd:thesaurusName>  <gmd:CI\_Citation>  ...  <gmd:date>  <gmd:CI\_Date>  ...  <gmd:dateType>  <gmd:CI\_DateTypeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode" **codeListValue="revision"**>revision</gmd:CI\_DateTypeCode>  </gmd:dateType>  </gmd:CI\_Date>  </gmd:date>  </gmd:CI\_Citation>  </gmd:thesaurusName> |

### Schematron rule

|  |
| --- |
| <sch:pattern is-a="IsoCodeListPattern" id="Gemini2-mi6-Thesaurus-DateType-CodeList">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:descriptiveKeywords/\*[1]/gmd:thesaurusName/\*[1]/gmd:date/\*[1]/gmd:dateType/\*[1]" /> </sch:pattern>  <!-- Test ISO code lists --> <sch:pattern abstract="true" id="IsoCodeListPattern">  <sch:rule context="$context">  <sch:assert test="string-length(@codeListValue) &gt; 0">  AP-3: The codeListValue attribute does not have a value.  </sch:assert>  </sch:rule> </sch:pattern> |

# Temporal Extent

## Temporal extent element

### Error message

1. Temporal extent shall be implemented using gml:TimePeriod or gml:TimeInstant.

### Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.extent > EX\_Extent.temporalElement > EX\_TemporalExtent.extent
2. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.extent > EX\_Extent.temporalElement > EX\_TemporalExtent.extent

### Cause

1. Temporal types are encoded using GML. The GML schema provides a wide range of temporal data types which can be used within metadata to express the temporal extent. The Schematron rule limits the choice of data types that can be used to TimePeriod and TimeInstant.

### Example – fail

|  |
| --- |
| <gmd:extent>  <gmd:EX\_Extent>  ...  <gmd:temporalElement>  <gmd:EX\_TemporalExtent>  <gmd:extent>  <gml:TimeNode gml:id="\_id1">  ...  </gml:TimeNode>  </gmd:extent>  </gmd:EX\_TemporalExtent>  </gmd:temporalElement>  ...  </gmd:EX\_Extent>  </gmd:extent> |

### Example – success

|  |
| --- |
| <gmd:extent>  <gmd:EX\_Extent>  ...  <gmd:temporalElement>  <gmd:EX\_TemporalExtent>  <gmd:extent>  <gml:TimePeriod gml:id="\_884CEEC4-7DF9-4BCB-9A19-4F60C070DE6B">  <gml:beginPosition>2012-01-10</gml:beginPosition>  <gml:endPosition>2012-01-05</gml:endPosition>  </gml:TimePeriod>  </gmd:extent>  </gmd:EX\_TemporalExtent>  </gmd:temporalElement>  ...  </gmd:EX\_Extent>  </gmd:extent> |

### Schematron rule

|  |
| --- |
| <sch:pattern fpi="Gemini2-mi7">  <sch:title>Temporal extent</sch:title>  <sch:rule context=" //gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:extent/\*[1]/gmd:temporalElement/gmd:EX\_TemporalExtent/gmd:extent  | //gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:extent/\*[1]/gmd:temporalElement/\*[@gco:isoType = 'gmd:EX\_TemporalExtent'][1]/gmd:extent  | //gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/srv:extent/\*[1]/gmd:temporalElement/gmd:EX\_TemporalExtent/gmd:extent  | //gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/srv:extent/\*[1]/gmd:temporalElement/\*[@gco:isoType = 'gmd:EX\_TemporalExtent'][1]/gmd:extent">  <sch:assert test="count(gml:TimePeriod) = 1 or count(gml:TimeInstant) = 1">  MI-7a: Temporal extent shall be implemented using gml:TimePeriod or gml:TimeInstant.  </sch:assert>  </sch:rule> </sch:pattern> |

## endPosition has inconsistent date information

### Error message

1. When indeterminatePosition='unknown' or indeterminatePosition='now' are specified endPosition should be empty

### Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.extent > EX\_Extent.temporalElement > EX\_TemporalExtent.extent
2. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.extent > EX\_Extent.temporalElement > EX\_TemporalExtent.extent

### Cause

1. The element named endPosition has an attribute that states that the end of the temporal extent does not have a known date (indeterminatePosition="**unknown**"), or the date is constantly changing (indeterminatePosition="**now**"), but a date is given.

### Example – fail

<gml32:endPosition indeterminatePosition="**unknown**">

**05/12/2013**

</gml32:endPosition>

### Example – pass

<gml32:TimePeriod xmlns:gml32="http://www.opengis.net/gml/3.2"

gml32:id="T1">  
 …  
 <gml32:endPosition indeterminatePosition="**unknown**"/>  
</gml32:TimePeriod>

### Schematron rule

<sch:pattern fpi="Gemini2-mi7-endpos">  
 <sch:rule context=" //gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:extent/\*[1]/gmd:temporalElement/gmd:EX\_TemporalExtent/gmd:extent/gml:TimePeriod/gml:endPosition

| //gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:extent/\*[1]/gmd:temporalElement/\*[@gco:isoType = 'gmd:EX\_TemporalExtent'][1]/gmd:extent/gml:TimePeriod/gml:endPosition

| //gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/srv:extent/\*[1]/gmd:temporalElement/gmd:EX\_TemporalExtent/gmd:extent/gml:TimePeriod/gml:endPosition

| //gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/srv:extent/\*[1]/gmd:temporalElement/\*[@gco:isoType = 'gmd:EX\_TemporalExtent'][1]/gmd:extent/gml:TimePeriod/gml:endPosition">  
 <sch:report  
 test="((@indeterminatePosition = 'unknown' or @indeterminatePosition = 'now') and normalize-space(.))">

MI-7b: When indeterminatePosition='unknown' or indeterminatePosition='now' are specified endPosition should be empty

</sch:report>  
…  
 </sch:rule>  
</sch:pattern>

## endPosition has incorrect date

### Error message

1. Date string doesn't have correct length, check it conforms to Gregorian calendar and UTC as per ISO 8601

### Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.extent > EX\_Extent.temporalElement > EX\_TemporalExtent.extent
2. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.extent > EX\_Extent.temporalElement > EX\_TemporalExtent.extent

### Cause

1. The element named endPosition has a date with a length that indicates that the date format does not conform to ISO 8601.

### Example – fail

<gml32:endPosition>**19970803**</gml32:endPosition>

### Example – pass

<gml32:endPosition>**1997-08-03**</gml32:endPosition>

### Schematron rule

<sch:pattern fpi="Gemini2-mi7-endpos">  
 <sch:rule context=" //gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:extent/\*[1]/gmd:temporalElement/gmd:EX\_TemporalExtent/gmd:extent/gml:TimePeriod/gml:endPosition

| //gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:extent/\*[1]/gmd:temporalElement/\*[@gco:isoType = 'gmd:EX\_TemporalExtent'][1]/gmd:extent/gml:TimePeriod/gml:endPosition

| //gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/srv:extent/\*[1]/gmd:temporalElement/gmd:EX\_TemporalExtent/gmd:extent/gml:TimePeriod/gml:endPosition

| //gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/srv:extent/\*[1]/gmd:temporalElement/\*[@gco:isoType = 'gmd:EX\_TemporalExtent'][1]/gmd:extent/gml:TimePeriod/gml:endPosition">  
…  
 <sch:assert test="string-length() = 0 or string-length() = 4 or string-length() = 7 or string-length() = 10 or string-length() = 19">

MI-7c: Date string doesn't have correct length, check it conforms to Gregorian calendar and UTC as per ISO 8601

</sch:assert>  
 </sch:rule>  
</sch:pattern>

## beginPosition has inconsistent date information

### Error message

1. When indeterminatePosition='unknown' is specified beginPosition should be empty

### Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.extent > EX\_Extent.temporalElement > EX\_TemporalExtent.extent
2. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.extent > EX\_Extent.temporalElement > EX\_TemporalExtent.extent

### Cause

1. The element named beginPosition has an attribute that states that the start of the temporal extent does not have a known date (indeterminatePosition="**unknown**"), or the date is constantly changing (indeterminatePosition="**now**"), but a date is given.

### Example – fail

<gml32:TimePeriod xmlns:gml32="http://www.opengis.net/gml/3.2"

gml32:id="T1">  
 <gml32:beginPosition indeterminatePosition="**unknown**">

**2016-01-14**

</gml32:beginPosition>  
 …  
</gml32:TimePeriod>

### Example – pass

<gml32:TimePeriod xmlns:gml32="http://www.opengis.net/gml/3.2"

gml32:id="T1">  
 <gml32:beginPosition indeterminatePosition="**unknown**" />  
 …  
</gml32:TimePeriod>

### Schematron rule

<sch:pattern fpi="Gemini2-mi7-begpos">  
 <sch:rule context=" //gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:extent/\*[1]/gmd:temporalElement/gmd:EX\_TemporalExtent/gmd:extent/gml:TimePeriod/gml:beginPosition

| //gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:extent/\*[1]/gmd:temporalElement/\*[@gco:isoType = 'gmd:EX\_TemporalExtent'][1]/gmd:extent/gml:TimePeriod/gml:beginPosition

| //gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/srv:extent/\*[1]/gmd:temporalElement/gmd:EX\_TemporalExtent/gmd:extent/gml:TimePeriod/gml:beginPosition

| //gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/srv:extent/\*[1]/gmd:temporalElement/\*[@gco:isoType = 'gmd:EX\_TemporalExtent'][1]/gmd:extent/gml:TimePeriod/gml:beginPosition">  
 <sch:report

test="(@indeterminatePosition = 'unknown' and normalize-space(.))">

MI-7d: When indeterminatePosition='unknown' is specified beginPosition should be empty

</sch:report>  
…  
 </sch:rule>  
</sch:pattern>

## beginPosition has incorrect date

### Error message

1. Date string doesn't have correct length, check it conforms to Gregorian calendar and UTC as per ISO 8601

### Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.extent > EX\_Extent.temporalElement > EX\_TemporalExtent.extent
2. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.extent > EX\_Extent.temporalElement > EX\_TemporalExtent.extent

### Cause

1. The element named beginPosition has a date with a length that indicates that the date format does not conform to ISO 8601.

### Example – fail

<gml32:beginPosition>

**19970426**

</gml32:beginPosition>

### Example – pass

<gml32:beginPosition>

**1997-04-26**

</gml32:beginPosition>

### Schematron rule

<sch:pattern fpi="Gemini2-mi7-begpos">  
 <sch:rule context=" //gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:extent/\*[1]/gmd:temporalElement/gmd:EX\_TemporalExtent/gmd:extent/gml:TimePeriod/gml:beginPosition

| //gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:extent/\*[1]/gmd:temporalElement/\*[@gco:isoType = 'gmd:EX\_TemporalExtent'][1]/gmd:extent/gml:TimePeriod/gml:beginPosition

| //gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/srv:extent/\*[1]/gmd:temporalElement/gmd:EX\_TemporalExtent/gmd:extent/gml:TimePeriod/gml:beginPosition

| //gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/srv:extent/\*[1]/gmd:temporalElement/\*[@gco:isoType = 'gmd:EX\_TemporalExtent'][1]/gmd:extent/gml:TimePeriod/gml:beginPosition">

…  
 <sch:assert test="string-length() = 0 or string-length() = 4 or string-length() = 7 or string-length() = 10 or string-length() = 19">

MI-7e: Date string doesn't have correct length, check it conforms to Gregorian calendar and UTC as per ISO 8601

</sch:assert>  
 </sch:rule>  
</sch:pattern>

# Dataset Reference Date

## Error message

1. The codeListValue attribute does not have a value.

## Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.citation > CI\_Citation.date > CI\_Date.dateType
2. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.citation > CI\_Citation.date > CI\_Date.dateType

## Cause

1. This assertion fails if the attribute codeListValue of the element gmd:CI\_DateTypeCode does not have a value.

## Example – fail

|  |
| --- |
| <gmd:citation>  <gmd:CI\_Citation>  ...  <gmd:date>  <gmd:CI\_Date>  ...  <gmd:dateType>  <gmd:CI\_DateTypeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode" **codeListValue=""**>revision</gmd:CI\_DateTypeCode>  </gmd:dateType>  </gmd:CI\_Date>  </gmd:date>  </gmd:CI\_Citation>  </gmd:citation> |

## Example – success

|  |
| --- |
| <gmd:citation>  <gmd:CI\_Citation>  ...  <gmd:date>  <gmd:CI\_Date>  ...  <gmd:dateType>  <gmd:CI\_DateTypeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode" **codeListValue="revision"**>revision</gmd:CI\_DateTypeCode>  </gmd:dateType>  </gmd:CI\_Date>  </gmd:date>  </gmd:CI\_Citation>  </gmd:citation> |

## Schematron rule

|  |
| --- |
| <sch:pattern is-a="IsoCodeListPattern" id="Gemini2-mi8-ReferenceDate-DateType-CodeList">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:citation/\*[1]/gmd:date/\*[1]/gmd:dateType/\*[1]" /> </sch:pattern>  <!-- Test ISO code lists --> <sch:pattern abstract="true" id="IsoCodeListPattern">  <sch:rule context="$context">  <sch:assert test="string-length(@codeListValue) &gt; 0">  AP-3: The codeListValue attribute does not have a value.  </sch:assert>  </sch:rule> </sch:pattern> |

# Lineage

## Mandatory for dataset and series

### Error message

1. Lineage is mandatory for datasets and series. One shall be provided.

### Context

1. MD\_Metadata.dataQualityInfo > DQ\_DataQuality.lineage > LI\_Lineage.statement

### Cause

1. The lineage statement must be provided for metadata describing a dataset or a series. This assertion fails if it is not provided.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:hierarchyLevel>  <gmd:MD\_ScopeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#MD\_ScopeCode" codeListValue="dataset">dataset</gmd:MD\_ScopeCode>  </gmd:hierarchyLevel>  ...  <gmd:dataQualityInfo>  <gmd:DQ\_DataQuality>  ...  <!--Lineage-->  ...  </gmd:DQ\_DataQuality>  </gmd:dataQualityInfo>  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:hierarchyLevel>  <gmd:MD\_ScopeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#MD\_ScopeCode" codeListValue="dataset">dataset</gmd:MD\_ScopeCode>  </gmd:hierarchyLevel>  ...  <gmd:dataQualityInfo>  <gmd:DQ\_DataQuality>  ...  <!--Lineage-->  <gmd:lineage>  <gmd:LI\_Lineage>  <gmd:statement>  <gco:CharacterString>The lineage statement</gco:CharacterString>  </gmd:statement>  </gmd:LI\_Lineage>  </gmd:lineage>  </gmd:DQ\_DataQuality>  </gmd:dataQualityInfo>  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern fpi="Gemini2-mi10">  <sch:title>Lineage</sch:title>  <sch:rule context="//gmd:MD\_Metadata[1]">  <sch:assert test="  ((gmd:hierarchyLevel[1]/\*[1]/@codeListValue = 'dataset' or  gmd:hierarchyLevel[1]/\*[1]/@codeListValue = 'series') and  count(gmd:dataQualityInfo[1]/\*[1]/gmd:lineage/\*[1]/gmd:statement) = 1) or  (gmd:hierarchyLevel[1]/\*[1]/@codeListValue != 'dataset' and  gmd:hierarchyLevel[1]/\*[1]/@codeListValue != 'series') or  count(gmd:hierarchyLevel) = 0">  MI-10a: Lineage is mandatory for datasets and series. One shall be  provided.  </sch:assert>  </sch:rule> </sch:pattern> |

## Statement is nillable

### Error message

1. The gmd:statement element shall have a value or a valid Nil Reason.

### Context

1. MD\_Metadata.dataQualityInfo > DQ\_DataQuality.lineage > LI\_Lineage.statement

### Cause

1. The element named gmd:statement has either no value or it has a gco:nilReason attribute with an invalid value. The value of the gco:nilReason attribute must be taken from a controlled list.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:hierarchyLevel>  <gmd:MD\_ScopeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#MD\_ScopeCode" codeListValue="dataset">dataset</gmd:MD\_ScopeCode>  </gmd:hierarchyLevel>  ...  <gmd:dataQualityInfo>  <gmd:DQ\_DataQuality>  ...  <!--Lineage-->  <gmd:lineage>  <gmd:LI\_Lineage>  <gmd:statement/>  </gmd:LI\_Lineage>  </gmd:lineage>  </gmd:DQ\_DataQuality>  </gmd:dataQualityInfo>  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:hierarchyLevel>  <gmd:MD\_ScopeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#MD\_ScopeCode" codeListValue="dataset">dataset</gmd:MD\_ScopeCode>  </gmd:hierarchyLevel>  ...  <gmd:dataQualityInfo>  <gmd:DQ\_DataQuality>  ...  <!--Lineage-->  <gmd:lineage>  <gmd:LI\_Lineage>  <gmd:statement gco:nilReason="missing"/>  </gmd:LI\_Lineage>  </gmd:lineage>  </gmd:DQ\_DataQuality>  </gmd:dataQualityInfo>  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern is-a="TypeNillablePattern" id="Gemini2-mi10-Statement-Nillable">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:dataQualityInfo[1]/\*[1]/gmd:lineage/\*[1]/gmd:statement"/> </sch:pattern>  <!-- Test that an element has a value or has a valid nilReason value --> <sch:pattern abstract="true" id="TypeNillablePattern">  <sch:rule context="$context">  <sch:assert test="  (string-length(normalize-space(.)) &gt; 0) or  (@gco:nilReason = 'inapplicable' or  @gco:nilReason = 'missing' or  @gco:nilReason = 'template' or  @gco:nilReason = 'unknown' or  @gco:nilReason = 'withheld' or  starts-with(@gco:nilReason, 'other:'))">  AP-1a: The <sch:name/> element shall have a value or a valid Nil Reason.  </sch:assert>  </sch:rule> </sch:pattern> |

## dataQualityInfo (dataset) must have lineage

### Error message

1. The gmd:dataQualityInfo scoped to dataset must have a lineage section

### Context

1. MD\_Metadata.dataQualityInfo > DQ\_DataQuality.lineage

### Cause

1. A metadata record with a dataQualityInfo section scoped to a dataset is missing a lineage element.

### Example – fail

<gmd:dataQualityInfo>  
 <gmd:DQ\_DataQuality>  
 <gmd:scope>  
 <gmd:DQ\_Scope>  
 <gmd:level>  
 <gmd:MD\_ScopeCode codeList="http://standards.iso.org/iso/19139/resources/codelist/gmxCodelists.xml#MD\_ScopeCode" codeListValue="**dataset**">dataset</gmd:MD\_ScopeCode>  
 </gmd:level>  
 </gmd:DQ\_Scope>  
 </gmd:scope>  
 <gmd:report>  
 <gmd:DQ\_DomainConsistency>  
 <gmd:result>  
 <gmd:DQ\_ConformanceResult>

…  
 </gmd:DQ\_ConformanceResult>  
 </gmd:result>  
 </gmd:DQ\_DomainConsistency>  
 </gmd:report>  
 </gmd:DQ\_DataQuality>  
 </gmd:dataQualityInfo>

### Example – pass

<gmd:dataQualityInfo>  
 <gmd:DQ\_DataQuality>  
 <gmd:scope>  
 <gmd:DQ\_Scope>  
 <gmd:level>  
 <gmd:MD\_ScopeCode codeList="http://standards.iso.org/iso/19139/resources/codelist/gmxCodelists.xml#MD\_ScopeCode" codeListValue="**dataset**">dataset</gmd:MD\_ScopeCode>  
 </gmd:level>  
 </gmd:DQ\_Scope>  
 </gmd:scope>  
 <gmd:report>  
 <gmd:DQ\_DomainConsistency>  
 <gmd:result>  
 <gmd:DQ\_ConformanceResult>

…  
 </gmd:DQ\_ConformanceResult>  
 </gmd:result>  
 </gmd:DQ\_DomainConsistency>  
 </gmd:report>  
 <gmd:**lineage**>  
 <gmd:LI\_Lineage>  
 <gmd:statement>  
 <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">Commissioning Organisation: Scrabster Harbour Trust; Purpose: Safety of navigation; Collection Type: Digital; Principal Vessel: Not Known; Primary Instrument Type: Echosounder - single beam; Primary Navigation Type: Not Known</gco:CharacterString>  
 </gmd:statement>  
 </gmd:LI\_Lineage>  
 </gmd:**lineage**>  
 </gmd:DQ\_DataQuality>  
 </gmd:dataQualityInfo>

### Schematron rule

<sch:pattern fpi="Gemini2-mi10-scoped">  
 <sch:rule context="//gmd:MD\_Metadata[1]/gmd:dataQualityInfo[1]/gmd:DQ\_DataQuality[1]/gmd:scope[1]/gmd:DQ\_Scope[1]/gmd:level[1]/gmd:MD\_ScopeCode[1][@codeListValue = 'dataset']">  
 <sch:assert test="count(parent::gmd:level/parent::gmd:DQ\_Scope/parent::gmd:scope/following-sibling::gmd:lineage) = 1">

MI-10b: The gmd:dataQualityInfo scoped to dataset must have a lineage section  
 </sch:assert>  
 </sch:rule>  
…  
</sch:pattern>

## dataQualityInfo (series) must have lineage

### Error message

1. The gmd:dataQualityInfo scoped to series must have a lineage section

### Context

1. MD\_Metadata.dataQualityInfo > DQ\_DataQuality.lineage

### Cause

1. A metadata record with a dataQualityInfo section scoped to a series is missing a lineage element

### Example – fail

<gmd:dataQualityInfo>  
 <gmd:DQ\_DataQuality>  
 <gmd:scope>  
 <gmd:DQ\_Scope>  
 <gmd:level>  
 <gmd:MD\_ScopeCode codeListValue="**series**" codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/codelist/gmxCodelists.xml#MD\_ScopeCode">

series

</gmd:MD\_ScopeCode>  
 </gmd:level>  
 </gmd:DQ\_Scope>  
 </gmd:scope>  
 </gmd:DQ\_DataQuality>  
 </gmd:dataQualityInfo>

### Example – pass

<gmd:dataQualityInfo>  
 <gmd:DQ\_DataQuality>  
 <gmd:scope>  
 <gmd:DQ\_Scope>  
 <gmd:level>  
 <gmd:MD\_ScopeCode codeListValue="**series**" codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/codelist/gmxCodelists.xml#MD\_ScopeCode">

series

</gmd:MD\_ScopeCode>  
 </gmd:level>  
 </gmd:DQ\_Scope>  
 </gmd:scope>  
 <gmd:**lineage**>  
 <gmd:LI\_Lineage>  
 …  
 </gmd:LI\_Lineage>  
 </gmd:**lineage**>  
 </gmd:DQ\_DataQuality>  
 </gmd:dataQualityInfo>

### Schematron rule

<sch:pattern fpi="Gemini2-mi10-scoped">  
 …  
 <sch:rule context="//gmd:MD\_Metadata[1]/gmd:dataQualityInfo[1]/gmd:DQ\_DataQuality[1]/gmd:scope[1]/gmd:DQ\_Scope[1]/gmd:level[1]/gmd:MD\_ScopeCode[1][@codeListValue = 'series']">  
 <sch:assert test="count(parent::gmd:level/parent::gmd:DQ\_Scope/parent::gmd:scope/following-sibling::gmd:lineage) = 1">

MI-10c: The gmd:dataQualityInfo scoped to series must have a lineage section  
 </sch:assert>  
 </sch:rule>  
</sch:pattern>

# Geographic Bounding box

## Geographic bounding box is mandatory

### Error message

1. Geographic bounding box is mandatory for datasets and series. One or more shall be provided.

### Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.extent > EX\_Extent.geographicElement > EX\_GeographicBoundingBox
2. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.extent > EX\_Extent.geographicElement > EX\_GeographicBoundingBox

### Cause

1. This assertion fails if no bounding box is provided.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:hierarchyLevel>  <gmd:MD\_ScopeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#MD\_ScopeCode" codeListValue="dataset">dataset</gmd:MD\_ScopeCode>  </gmd:hierarchyLevel>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:extent>  <gmd:EX\_Extent>  ...  </gmd:EX\_Extent>  </gmd:extent>  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:hierarchyLevel>  <gmd:MD\_ScopeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#MD\_ScopeCode" codeListValue="dataset">dataset</gmd:MD\_ScopeCode>  </gmd:hierarchyLevel>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:extent>  <gmd:EX\_Extent>  ...  <gmd:geographicElement>  <gmd:EX\_GeographicBoundingBox>  <gmd:westBoundLongitude>  <gco:Decimal>-9.226253</gco:Decimal>  </gmd:westBoundLongitude>  <gmd:eastBoundLongitude>  <gco:Decimal>-0.707798</gco:Decimal>  </gmd:eastBoundLongitude>  <gmd:southBoundLatitude>  <gco:Decimal>54.513061</gco:Decimal>  </gmd:southBoundLatitude>  <gmd:northBoundLatitude>  <gco:Decimal>60.866752</gco:Decimal>  </gmd:northBoundLatitude>  </gmd:EX\_GeographicBoundingBox>  </gmd:geographicElement>  ...  </gmd:EX\_Extent>  </gmd:extent>  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern fpi="Gemini2-mi11">  <sch:title>West and east longitude, north and south latitude</sch:title>  <sch:rule context="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]">  <sch:assert test="  ((../../gmd:hierarchyLevel[1]/\*[1]/@codeListValue = 'dataset' or  ../../gmd:hierarchyLevel[1]/\*[1]/@codeListValue = 'series') and (count(gmd:extent/\*[1]/gmd:geographicElement/gmd:EX\_GeographicBoundingBox) &gt;= 1) or count(gmd:extent/\*[1]/gmd:geographicElement/\*[@gco:isoType = 'gmd:EX\_GeographicBoundingBox'][1]) &gt;= 1) or  (../../gmd:hierarchyLevel[1]/\*[1]/@codeListValue != 'dataset' and  ../../gmd:hierarchyLevel[1]/\*[1]/@codeListValue != 'series') or  count(../../gmd:hierarchyLevel) = 0">  MI-(11,12,13,13): Geographic bounding box is mandatory for datasets and  series. One or more shall be provided.  </sch:assert>  </sch:rule> </sch:pattern> |

## Coordinate values

### Error message

1. West bounding longitude has a value of <X> which is outside bounds.
2. East bounding longitude as a value of <X> which is outside bounds.
3. South bounding latitude has a value of <Y> which is outside bounds.
4. North bounding latitude has a value of <Y> which is outside bounds.

### Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.extent > EX\_Extent.geographicElement > EX\_GeographicBoundingBox
2. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.extent > EX\_Extent.geographicElement > EX\_GeographicBoundingBox

### Cause

1. The bounding box coordinates are referenced to a WGS 84 coordinate reference system, with coordinate units of degrees and the Greenwich prime meridian. This means that, in general, longitude values must be between -180 and +180 and latitude values must be between -90 and +90.
2. Specifically, the following tests are applied:
3. -180 <= east bounding longitude <= +180
4. -180 <= west bounding longitude <= +180
5. -90 <= south bounding latitude <= north bounding latitude
6. South bounding latitude <= north bounding latitude <= +90
7. The east and west bounding longitude values are not compared against each other because the west value can be greater than the east value where bounding boxes cross the +/-180 degree meridian.

### Example – fail

|  |
| --- |
| ...  <gmd:geographicElement>  <gmd:EX\_GeographicBoundingBox>  <gmd:westBoundLongitude>  <gco:Decimal>-190.0</gco:Decimal>  </gmd:westBoundLongitude>  <gmd:eastBoundLongitude>  <gco:Decimal>190.0</gco:Decimal>  </gmd:eastBoundLongitude>  <gmd:southBoundLatitude>  <gco:Decimal>-100.0</gco:Decimal>  </gmd:southBoundLatitude>  <gmd:northBoundLatitude>  <gco:Decimal>100.0</gco:Decimal>  </gmd:northBoundLatitude>  </gmd:EX\_GeographicBoundingBox>  </gmd:geographicElement>  ... |

### Example – success

|  |
| --- |
| ...  <gmd:geographicElement>  <gmd:EX\_GeographicBoundingBox>  <gmd:westBoundLongitude>  <gco:Decimal>-9.226253</gco:Decimal>  </gmd:westBoundLongitude>  <gmd:eastBoundLongitude>  <gco:Decimal>-0.707798</gco:Decimal>  </gmd:eastBoundLongitude>  <gmd:southBoundLatitude>  <gco:Decimal>54.513061</gco:Decimal>  </gmd:southBoundLatitude>  <gmd:northBoundLatitude>  <gco:Decimal>60.866752</gco:Decimal>  </gmd:northBoundLatitude>  </gmd:EX\_GeographicBoundingBox>  </gmd:geographicElement>  ... |

### Schematron rule

|  |
| --- |
| <sch:pattern is-a="GeographicBoundingBoxPattern" id="Gemini2-mi11-BoundingBox">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:extent/\*[1]/gmd:geographicElement/gmd:EX\_GeographicBoundingBox  | //gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:extent/\*[1]/gmd:geographicElement/\*[@gco:isoType='gmd:EX\_GeographicBoundingBox'][1]  | //gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/srv:extent/\*[1]/gmd:geographicElement/gmd:EX\_GeographicBoundingBox  | //gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/srv:extent/\*[1]/gmd:geographicElement/\*[@gco:isoType='gmd:EX\_GeographicBoundingBox'][1]" /> </sch:pattern>  <!-- Test for gmd:MD\_GeographicBoundingBox values --> <sch:pattern abstract="true" id="GeographicBoundingBoxPattern">  <sch:rule context="$context">  <!-- West Bound Longitude -->  <sch:assert test="string-length(gmd:westBoundLongitude) = 0 or (  gmd:westBoundLongitude &gt;= -180.0 and gmd:westBoundLongitude &lt;= 180.0)">  AP-6a: West bound longitude has a value of <sch:value-of select="gmd:westBoundLongitude"/> which is outside bounds.  </sch:assert>  <!-- East Bound Longitude -->  <sch:assert test="string-length(gmd:eastBoundLongitude) = 0 or (  gmd:eastBoundLongitude &gt;= -180.0 and gmd:eastBoundLongitude &lt;= 180.0)">  AP-6b: East bound longitude has a value of <sch:value-of select="gmd:eastBoundLongitude"/> which is outside bounds.  </sch:assert>  <!-- South Bound Latitude -->  <sch:assert test="string-length(gmd:southBoundLatitude) = 0 or (  gmd:southBoundLatitude &gt;= -90.0 and gmd:southBoundLatitude &lt;= gmd:northBoundLatitude)">  AP-6c: South bound latitude has a value of <sch:value-of select="gmd:southBoundLatitude"/> which is outside bounds.  </sch:assert>  <!-- North Bound Latitude -->  <sch:assert test="string-length(gmd:northBoundLatitude) = 0 or (  gmd:northBoundLatitude &lt;= 90.0 and gmd:northBoundLatitude &gt;= gmd:southBoundLatitude)">  AP-6d: North bound latitude has a value of <sch:value-of select="gmd:northBoundLatitude"/> which is outside bounds.  </sch:assert>  </sch:rule> </sch:pattern> |

## West bound longitude not nillable

### Error message

1. The gmd:westBoundLongitude element is not nillable and shall have a value.

### Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.extent > EX\_Extent.geographicElement > EX\_GeographicBoundingBox.westBoundLongitude
2. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.extent > EX\_Extent.geographicElement > EX\_GeographicBoundingBox.westBoundLongitude

### Cause

1. The element named gmd:westBoundLongitude has been assigned a gco:nilReason attribute or the value of the element is an empty string.

### Example – fail

|  |
| --- |
| <gmd:westBoundLongitude/> |
| <gmd:westBoundLongitude gco:nilReason="missing"/> |

### Example – success

|  |
| --- |
| <gmd:westBoundLongitude>  <gco:Decimal>-9.226253</gco:Decimal>  </gmd:westBoundLongitude> |

### Schematron rule

|  |
| --- |
| <sch:pattern is-a="TypeNotNillablePattern" id="Gemini2-mi11-West-NotNillable">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:extent/\*[1]/gmd:geographicElement/\*[1]/gmd:westBoundLongitude  | //gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/srv:extent/\*[1]/gmd:geographicElement/\*[1]/gmd:westBoundLongitude" /> </sch:pattern>  <!-- Test that an element has a value - the value is not nillable --> <sch:pattern abstract="true" id="TypeNotNillablePattern">  <sch:rule context="$context">  <sch:assert test="string-length(.) &gt; 0 and count(./@gco:nilReason) = 0">  AP-2: The <sch:name/> element is not nillable and shall have a value.  </sch:assert>  </sch:rule> </sch:pattern> |

## East bound longitude not nillable

### Error message

1. The gmd:eastBoundLongitude element is not nillable and shall have a value.

### Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.extent > EX\_Extent.geographicElement > EX\_GeographicBoundingBox.eastBoundLongitude
2. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.extent > EX\_Extent.geographicElement > EX\_GeographicBoundingBox.eastBoundLongitude

### Cause

1. The element named gmd:eastBoundLongitude has been assigned a gco:nilReason attribute or the value of the element is an empty string.

### Example – fail

|  |
| --- |
| <gmd:eastBoundLongitude/> |
| <gmd:eastBoundLongitude gco:nilReason="missing"/> |

### Example – success

|  |
| --- |
| <gmd:eastBoundLongitude>  <gco:Decimal>-0.707798</gco:Decimal>  </gmd:eastBoundLongitude> |

### Schematron rule

|  |
| --- |
| <sch:pattern is-a="TypeNotNillablePattern" id="Gemini2-mi11-East-NotNillable">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:extent/\*[1]/gmd:geographicElement/\*[1]/gmd:eastBoundLongitude  | //gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/srv:extent/\*[1]/gmd:geographicElement/\*[1]/gmd:eastBoundLongitude" /> </sch:pattern>  <!-- Test that an element has a value - the value is not nillable --> <sch:pattern abstract="true" id="TypeNotNillablePattern">  <sch:rule context="$context">  <sch:assert test="string-length(.) &gt; 0 and count(./@gco:nilReason) = 0">  AP-2: The <sch:name/> element is not nillable and shall have a value.  </sch:assert>  </sch:rule> </sch:pattern> |

## South bound latitude not nillable

### Error message

1. The gmd:southBoundLatitude element is not nillable and shall have a value.

### Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.extent > EX\_Extent.geographicElement > EX\_GeographicBoundingBox.southBoundLatitude
2. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.extent > EX\_Extent.geographicElement > EX\_GeographicBoundingBox.southBoundLatitude

### Cause

1. The element named gmd:southBoundLatitude has been assigned a gco:nilReason attribute or the value of the element is an empty string.

### Example – fail

|  |
| --- |
| <gmd:southBoundLatitude/> |
| <gmd:southBoundLatitude gco:nilReason="missing"/> |

### Example – success

|  |
| --- |
| <gmd:southBoundLatitude>  <gco:Decimal>54.513061</gco:Decimal>  </gmd:southBoundLatitude> |

### Schematron rule

|  |
| --- |
| <sch:pattern is-a="TypeNotNillablePattern" id="Gemini2-mi11-South-NotNillable">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:extent/\*[1]/gmd:geographicElement/\*[1]/gmd:southBoundLatitude  | //gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/srv:extent/\*[1]/gmd:geographicElement/\*[1]/gmd:southBoundLatitude" /> </sch:pattern>  <!-- Test that an element has a value - the value is not nillable -->  <sch:pattern abstract="true" id="TypeNotNillablePattern">  <sch:rule context="$context">  <sch:assert test="string-length(.) &gt; 0 and count(./@gco:nilReason) = 0">  AP-2: The <sch:name/> element is not nillable and shall have a value.  </sch:assert>  </sch:rule> </sch:pattern> |

## North bound latitude not nillable

### Error message

1. The gmd:northBoundLatitude element is not nillable and shall have a value.

### Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.extent > EX\_Extent.geographicElement > EX\_GeographicBoundingBox.northBoundLatitude
2. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.extent > EX\_Extent.geographicElement > EX\_GeographicBoundingBox.northBoundLatitude

### Cause

1. The element named gmd:northBoundLatitude has been assigned a gco:nilReason attribute or the value of the element is an empty string.

### Example – fail

|  |
| --- |
| <gmd:northBoundLatitude/> |
| <gmd:northBoundLatitude gco:nilReason="missing"/> |

### Example – success

|  |
| --- |
| <gmd:northBoundLatitude>  <gco:Decimal>54.513061</gco:Decimal>  </gmd:northBoundLatitude> |

### Schematron rule

|  |
| --- |
| <sch:pattern is-a="TypeNotNillablePattern" id="Gemini2-mill-North-NotNillable">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:extent/\*[1]/gmd:geographicElement/\*[1]/gmd:northBoundLatitude  | //gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/srv:extent/\*[1]/gmd:geographicElement/\*[1]/gmd:northBoundLatitude" /> </sch:pattern>  <!-- Test that an element has a value - the value is not nillable --> <sch:pattern abstract="true" id="TypeNotNillablePattern">  <sch:rule context="$context">  <sch:assert test="string-length(.) &gt; 0 and count(./@gco:nilReason) = 0">  AP-2: The <sch:name/> element is not nillable and shall have a value.  </sch:assert>  </sch:rule> </sch:pattern> |

# Extent

## Error message

1. The gmd:code element shall have a value or a valid Nil Reason.

## Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.extent > EX\_Extent.geographicElement > EX\_GeographicDescription.geographicIdentifier > MD\_Identifier.code
2. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.extent > EX\_Extent.geographicElement > EX\_GeographicDescription.geographicIdentifier > MD\_Identifier.code

## Cause

1. The element named gmd:code, in the context of EX\_GeographicDescription, has no value or has a gco:nilReason attribute with an invalid value.

## Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:extent>  <gmd:EX\_Extent>  <gmd:geographicElement>  <gmd:EX\_GeographicDescription>  <gmd:geographicIdentifier>  <gmd:MD\_Identifier>  <gmd:code>  <gco:CharacterString></gco:CharacterString>  </gmd:code>  </gmd:MD\_Identifier>  </gmd:geographicIdentifier>  </gmd:EX\_GeographicDescription>  </gmd:geographicElement>  ...  </gmd:EX\_Extent>  </gmd:extent>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:extent>  <gmd:EX\_Extent>  <gmd:geographicElement>  <gmd:EX\_GeographicDescription>  <gmd:geographicIdentifier>  <gmd:MD\_Identifier>  <gmd:code gco:nilReason="invalidvalue"/>  </gmd:MD\_Identifier>  </gmd:geographicIdentifier>  </gmd:EX\_GeographicDescription>  </gmd:geographicElement>  ...  </gmd:EX\_Extent>  </gmd:extent>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

## Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:extent>  <gmd:EX\_Extent>  <gmd:geographicElement>  <gmd:EX\_GeographicDescription>  <gmd:geographicIdentifier>  <gmd:MD\_Identifier>  <gmd:code>  <gco:CharacterString> http://data.ordnancesurvey.co.uk/doc/7000000000041546  </gco:CharacterString>  </gmd:code>  </gmd:MD\_Identifier>  </gmd:geographicIdentifier>  </gmd:EX\_GeographicDescription>  </gmd:geographicElement>  ...  </gmd:EX\_Extent>  </gmd:extent>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:extent>  <gmd:EX\_Extent>  <gmd:geographicElement>  <gmd:EX\_GeographicDescription>  <gmd:geographicIdentifier>  <gmd:MD\_Identifier>  <gmd:code gco:nilReason="inapplicable"/>  </gmd:MD\_Identifier>  </gmd:geographicIdentifier>  </gmd:EX\_GeographicDescription>  </gmd:geographicElement>  ...  </gmd:EX\_Extent>  </gmd:extent>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

## Schematron rule

|  |
| --- |
| <sch:pattern fpi="Gemini2-mi15">  <sch:title>Extent</sch:title> </sch:pattern>  <sch:pattern is-a="TypeNillablePattern" id="Gemini2-mi15-Nillable">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:extent/\*[1]/gmd:geographicElement/gmd:EX\_GeographicDescription/gmd:geographicIdentifier/\*[1]/gmd:code | //gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:extent/\*[1]/gmd:geographicElement/\*[@gco:isoType='gmd:EX\_GeographicDescription'][1]/gmd:geographicIdentifier/\*[1]/gmd:code  | //gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/srv:extent/\*[1]/gmd:geographicElement/gmd:EX\_GeographicDescription/gmd:geographicIdentifier/\*[1]/gmd:code  | //gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/srv:extent/\*[1]/gmd:geographicElement/\*[@gco:isoType='gmd:EX\_GeographicDescription'][1]/gmd:geographicIdentifier/\*[1]/gmd:code" /> </sch:pattern>  <!-- Test that an element has a value or has a valid nilReason value --> <sch:pattern abstract="true" id="TypeNillablePattern">  <sch:rule context="$context">  <sch:assert test="  (string-length(normalize-space(.)) &gt; 0) or  (@gco:nilReason = 'inapplicable' or  @gco:nilReason = 'missing' or  @gco:nilReason = 'template' or  @gco:nilReason = 'unknown' or  @gco:nilReason = 'withheld' or  starts-with(@gco:nilReason, 'other:'))">  AP-1a: The <sch:name/> element shall have a value or a valid Nil Reason.  </sch:assert>  </sch:rule> </sch:pattern> |

# Vertical Extent Information

## Error message

1. The gmd:minimumValue element shall have a value or a valid Nil Reason.
2. The gmd:maximumValue element shall have a value or a valid Nil Reason.

## Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.extent > EX\_Extent.verticalElement > EX\_VerticalExtent.minimumValue
2. MD\_Metadata.identificationInfo > MD\_DataIdentification.extent > EX\_Extent.verticalElement > EX\_VerticalExtent.maximumValue

## Cause

1. The element named gmd:minimumValue has either no value or it has a gco:nilReason attribute with an invalid value, and / or, the element named gmd:maximumValue has either no value of it has a gco:nilReason attribute with an invalid value. The value of the gco:nilReason attribute must be taken from a controlled list.

## Example – fail

|  |
| --- |
| <MD\_Metadata>  ...  <identificationInfo>  <MD\_DataIdentification>  ...  <extent>  <EX\_Extent>  ...  <verticalElement>  <EX\_VerticalExtent>  <minimumValue>  <gco:Real></gco:Real>  </minimumValue>  <maximumValue/>  <verticalCRS xlink:href="urn:ogc:def:crs:ESPG::5101" />  </EX\_VerticalExtent>  </verticalElement>  </EX\_Extent>  </extent>  </MD\_DataIdentification>  </identificationInfo>  ...  </MD\_Metadata> |

## Example – success

|  |
| --- |
| <MD\_Metadata>  ...  <identificationInfo>  <MD\_DataIdentification>  ...  <extent>  <EX\_Extent>  ...  <verticalElement>  <EX\_VerticalExtent>  <minimumValue>  <gco:Real>10</gco:Real>  </minimumValue gco:nilReason="unknown" />  <maximumValue>  <verticalCRS xlink:href="urn:ogc:def:crs:ESPG::5101" />  </EX\_VerticalExtent>  </verticalElement>  </EX\_Extent>  </extent>  </MD\_DataIdentification>  </identificationInfo>  ...  </MD\_Metadata> |

## Schematron rule

|  |
| --- |
| <sch:pattern fpi="Gemini2-mi16">  <sch:title>Vertical extent information</sch:title> </sch:pattern>  <sch:pattern is-a="TypeNillablePattern" id="Gemini2-mi16-Nillable">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:extent/\*[1]/gmd:verticalElement/\*[1]/gmd:minimumValue | //gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:extent/\*[1]/gmd:verticalElement/\*[1]/gmd:maximumValue" /> </sch:pattern>  <!-- Test that an element has a value or has a valid nilReason value --> <sch:pattern abstract="true" id="TypeNillablePattern">  <sch:rule context="$context">  <sch:assert test="  (string-length(normalize-space(.)) &gt; 0) or  (@gco:nilReason = 'inapplicable' or  @gco:nilReason = 'missing' or  @gco:nilReason = 'template' or  @gco:nilReason = 'unknown' or  @gco:nilReason = 'withheld' or  starts-with(@gco:nilReason, 'other:'))">  AP-1a: The <sch:name/> element shall have a value or a valid Nil Reason.  </sch:assert>  </sch:rule> </sch:pattern> |

# Spatial Reference System

## RS\_Identifier shall have a value

### Error message

1. The gmd:code element shall have a value or a valid Nil Reason.

### Context

1. MD\_Metadata.referenceSystemInfo > MD\_ReferenceSystem.referenceSystemIdentifier > RS\_Identifier.code

### Cause

1. The element named gmd:code has either no value or it has a gco:nilReason attribute with an invalid value. The value of the gco:nilReason attribute must be taken from a controlled list.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:referenceSystemInfo>  <gmd:MD\_ReferenceSystem>  <gmd:referenceSystemIdentifier>  <gmd:RS\_Identifier>  <gmd:code/>  </gmd:RS\_Identifier>  </gmd:referenceSystemIdentifier>  </gmd:MD\_ReferenceSystem>  </gmd:referenceSystemInfo>  ...  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:referenceSystemInfo>  <gmd:MD\_ReferenceSystem>  <gmd:referenceSystemIdentifier>  <gmd:RS\_Identifier>  <gmd:code>  <gco:CharacterString>urn:ogc:def:crs:EPSG::27700</gco:CharacterString>  </gmd:code>  </gmd:RS\_Identifier>  </gmd:referenceSystemIdentifier>  </gmd:MD\_ReferenceSystem>  </gmd:referenceSystemInfo>  ...  </gmd:MD\_Metadata> |
| <gmd:MD\_Metadata>  ...  <gmd:referenceSystemInfo>  <gmd:MD\_ReferenceSystem>  <gmd:referenceSystemIdentifier>  <gmd:RS\_Identifier>  <gmd:code gco:nilReason="unknown"/>  </gmd:RS\_Identifier>  </gmd:referenceSystemIdentifier>  </gmd:MD\_ReferenceSystem>  </gmd:referenceSystemInfo>  ...  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern fpi="Gemini2-mi17">  <sch:title>Spatial reference system</sch:title> </sch:pattern>  <sch:pattern is-a="TypeNotNillablePattern" id="Gemini2-mi17-NotNillable">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:referenceSystemInfo/\*[1]/gmd:referenceSystemIdentifier/\*[1]/gmd:code" /> </sch:pattern>  <!-- Test that an element has a value or has a valid nilReason value --> <sch:pattern abstract="true" id="TypeNillablePattern">  <sch:rule context="$context">  <sch:assert test="  (string-length(normalize-space(.)) &gt; 0) or  (@gco:nilReason = 'inapplicable' or  @gco:nilReason = 'missing' or  @gco:nilReason = 'template' or  @gco:nilReason = 'unknown' or  @gco:nilReason = 'withheld' or  starts-with(@gco:nilReason, 'other:'))">  AP-1a: The <sch:name/> element shall have a value or a valid Nil Reason.  </sch:assert>  </sch:rule> </sch:pattern> Spatial reference system requires RS\_IdentifierError message  1. At least one coordinate reference system used in the described dataset, dataset series, or service shall be given using gmd:referenceSystemInfo/gmd:MD\_ReferenceSystem/gmd:referenceSystemIdentifier/gmd:RS\_Identifier  Context  1. MD\_ReferenceSystem.referenceSystemIdentifier > RS\_Identifier.code  Cause  1. The metadata record is missing an RS\_Identifier element; at least one is required.  Example – fail <gmd:hierarchyLevel>  <gmd:MD\_ScopeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#MD\_ScopeCode"  codeListValue="**series**">series</gmd:MD\_ScopeCode>  </gmd:hierarchyLevel>  …  <gmd:metadataStandardVersion>  <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  Version 2.3.7  </gco:CharacterString> </gmd:metadataStandardVersion>  **<!-- looking for content here, but none is found -->**  <gmd:identificationInfo>  <gmd:MD\_DataIdentification> Example – pass <gmd:referenceSystemInfo>  <gmd:MD\_ReferenceSystem>  <gmd:referenceSystemIdentifier>  <gmd:RS\_Identifier>  <gmd:code>  <gmx:Anchor  xlink:href="http://www.opengis.net/def/crs/EPSG/0/4258">  2D geodetic in ETRS89 on GRS80 (Latitude, Longitude) / ETRS89-GRS80  </gmx:Anchor>  </gmd:code>  </gmd:RS\_Identifier>  </gmd:referenceSystemIdentifier>  </gmd:MD\_ReferenceSystem> </gmd:referenceSystemInfo> Schematron rule <sch:pattern fpi="Gemini2-mi17-refSysInfo-1">  <sch:p>  The coordinate reference system(s) used in the described dataset or dataset series shall be given using element gmd:referenceSystemInfo/gmd:MD\_ReferenceSystem/gmd:referenceSystemIdentifier/gmd:RS\_Identifier  INSPIRE Requirements:  metadata/2.0/req/sds-interoperable/crs and  metadata/2.0/req/isdss/crs  </sch:p>  <sch:rule context="//gmd:MD\_Metadata[1]">  <sch:assert test="count(//gmd:MD\_Metadata[1]/child::gmd:referenceSystemInfo/descendant::gmd:RS\_Identifier) &gt; 0">  MI-17a: At least one coordinate reference system used in the described dataset, dataset series, or service shall be given using gmd:referenceSystemInfo/gmd:MD\_ReferenceSystem/gmd:referenceSystemIdentifier/gmd:RS\_Identifier  </sch:assert>  </sch:rule> </sch:pattern> Default CRS Identifiers codeSpace issueError message  1. The coordinate reference system xxxx is listed in Default Coordinate Reference System Identifiers in Annex D.4. Such identifiers SHALL NOT use gmd:codeSpace  Context  1. MD\_ReferenceSystem.referenceSystemIdentifier > RS\_Identifier.code  Cause  1. The coordinate reference system listed appears in the Default Coordinate Reference System Identifiers in Annex D.4 of the INSPIRE Metadata regulations. In such a case, the gmd:codeSpace element shall not be used.  Example – fail <gmd:RS\_Identifier>  <gmd:code>  <gmx:Anchor   xmlns:gmx="http://www.isotc211.org/2005/gmx"  xmlns:xlink="http://www.w3.org/1999/xlink"  xlink:href="http://www.opengis.net/def/crs/EPSG/0/4258" />  </gmd:code>  <gmd:codeSpace>  <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  INSPIRE RS registry  </gco:CharacterString>  </gmd:codeSpace> </gmd:RS\_Identifier> Example – pass <gmd:RS\_Identifier>  <gmd:code>  <gmx:Anchor  xmlns:gmx="http://www.isotc211.org/2005/gmx"  xmlns:xlink="http://www.w3.org/1999/xlink"  xlink:href="http://www.opengis.net/def/crs/EPSG/0/4258" />  </gmd:code> </gmd:RS\_Identifier> Schematron rule <sch:let name="defaultCRScodes"  value="document('http://agi.dev.web-foundry.co.uk/images/xslt/d4.xml')" />  <sch:pattern fpi="Gemini2-mi17-refSysInfo-3">  <sch:p>  If the coordinate reference system is listed in the table Default Coordinate Reference System Identifiers in Annex D.4, ... The gmd:codeSpace element shall not be used in this case.  </sch:p>  <sch:rule context="//gmd:MD\_Metadata[1]/gmd:referenceSystemInfo/\*[1]/gmd:referenceSystemIdentifier/gmd:RS\_Identifier[1]/gmd:code/gmx:Anchor[1]/@xlink:href">  <!-- associated test for whether code is a default CRS is in supplemental -->  <sch:report test="$defaultCRScodes//crs/text()[normalize-space(.) = normalize-space(current()/.)] and count(parent::gmx:Anchor/parent::gmd:code/parent::gmd:RS\_Identifier/child::gmd:codeSpace) &gt; 0">  MI-17b: The coordinate reference system <sch:value-of select="normalize-space(current()/.)"/> is listed in Default Coordinate Reference System Identifiers in Annex D.4. Such identifiers SHALL NOT use gmd:codeSpace  </sch:report>  </sch:rule>  … </sch:pattern> Default CRS Identifiers codeSpace issueError message  1. The coordinate reference system xxxx is listed in Default Coordinate Reference System Identifiers in Annex D.4. Such identifiers SHALL NOT use gmd:codeSpace  Context  1. MD\_ReferenceSystem.referenceSystemIdentifier > RS\_Identifier.code  Cause  1. The coordinate reference system listed appears in the Default Coordinate Reference System Identifiers in Annex D.4 of the INSPIRE Metadata regulations. In such a case, the gmd:codeSpace element shall not be used.  Example – fail <gmd:RS\_Identifier>  <gmd:code>  <gco:CharacterString  xmlns:gco="http://www.isotc211.org/2005/gco">  **http://www.opengis.net/def/crs/EPSG/0/4258**  </gco:CharacterString>  </gmd:code>  **<gmd:codeSpace>  <gco:CharacterString**  **xmlns:gco="http://www.isotc211.org/2005/gco">**  **INSPIRE RS registry**  **</gco:CharacterString>  </gmd:codeSpace>** </gmd:RS\_Identifier> Example – pass <gmd:RS\_Identifier>  <gmd:code>  <gco:CharacterString  xmlns:gco="http://www.isotc211.org/2005/gco">  **http://www.opengis.net/def/crs/EPSG/0/4258**  </gco:CharacterString>  </gmd:code> </gmd:RS\_Identifier> Schematron rule <sch:let name="defaultCRScodes"  value="document('http://agi.dev.web-foundry.co.uk/images/xslt/d4.xml')" />  <sch:pattern fpi="Gemini2-mi17-refSysInfo-3">  <sch:p>  If the coordinate reference system is listed in the table Default Coordinate Reference System Identifiers in Annex D.4, ... The gmd:codeSpace element shall not be used in this case.  </sch:p> …  <sch:rule context="//gmd:MD\_Metadata[1]/gmd:referenceSystemInfo/\*[1]/gmd:referenceSystemIdentifier/gmd:RS\_Identifier[1]/gmd:code/gco:CharacterString">  <!-- associated test for whether code is a default CRS is in supplemental -->  <sch:report test="$defaultCRScodes//crs/text()[normalize-space(.) = normalize-space(current()/.)] and count(parent::gmd:code/parent::gmd:RS\_Identifier/child::gmd:codeSpace) &gt; 0">  MI-17c: The coordinate reference system <sch:value-of select="normalize-space(current()/.)"/> is listed in Default Coordinate Reference System Identifiers in Annex D.4. Such identifiers SHALL NOT use gmd:codeSpace  </sch:report>  </sch:rule> … </sch:pattern> Default CRS Identifiers codeSpace issueError message  1. The coordinate reference system xxxx is listed in Default Coordinate Reference System Identifiers in Annex D.4. Such identifiers SHALL NOT use gmd:codeSpace  Context  1. MD\_ReferenceSystem.referenceSystemIdentifier > RS\_Identifier.code  Cause  1. The coordinate reference system listed appears in the Default Coordinate Reference System Identifiers in Annex D.4 of the INSPIRE Metadata regulations. In such a case, the gmd:codeSpace element shall not be used.  Example – fail <gmd:RS\_Identifier>  <gmd:code>  <gmx:Anchor xmlns:gmx="http://www.isotc211.org/2005/gmx">  http://www.opengis.net/def/crs/EPSG/0/4258  </gmx:Anchor>  </gmd:code>  <gmd:codeSpace>  <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  INSPIRE RS registry  </gco:CharacterString>  </gmd:codeSpace> </gmd:RS\_Identifier> Example – pass <gmd:RS\_Identifier>  <gmd:code>  <gmx:Anchor xmlns:gmx="http://www.isotc211.org/2005/gmx">  http://www.opengis.net/def/crs/EPSG/0/4258  </gmx:Anchor>  </gmd:code> </gmd:RS\_Identifier> Schematron rule <sch:let name="defaultCRScodes"  value="document('http://agi.dev.web-foundry.co.uk/images/xslt/d4.xml')" />  <sch:pattern fpi="Gemini2-mi17-refSysInfo-3">  <sch:p>  If the coordinate reference system is listed in the table Default Coordinate Reference System Identifiers in Annex D.4, ... The gmd:codeSpace element shall not be used in this case.  </sch:p>  …  <sch:rule context="//gmd:MD\_Metadata[1]/gmd:referenceSystemInfo/\*[1]/gmd:referenceSystemIdentifier/gmd:RS\_Identifier[1]/gmd:code/gmx:Anchor">  <sch:report test="$defaultCRScodes//crs/text()[normalize-space(.) = normalize-space(current()/.)] and count(parent::gmd:code/parent::gmd:RS\_Identifier/child::gmd:codeSpace) &gt; 0">  MI-17d: The coordinate reference system <sch:value-of select="normalize-space(current()/.)"/> is listed in Default Coordinate Reference System Identifiers in Annex D.4. Such identifiers SHALL NOT use gmd:codeSpace  </sch:report>  </sch:rule> </sch:pattern> |

# Spatial Resolution

## Error message

1. The gmd:distance element shall have a value or a valid Nil Reason.

## Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.spatialResolution > MD\_Resolution.distance

## Cause

1. The element named gmd:distance has either no value or it has a gco:nilReason attribute with an invalid value. The value of the gco:nilReason attribute must be taken from a controlled list.

## Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:spatialResolution>  <gmd:MD\_Resolution>  <gmd:distance/>  </gmd:spatialResolution>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

## Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:spatialResolution>  <gmd:MD\_Resolution>  <gmd:distance>  <gco:Distance uom="urn:ogc:def:uom:EPSG::9001">29.2</gco:Distance>  </gmd:distance>  </gmd:MD\_Resolution>  </gmd:spatialResolution>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:spatialResolution>  <gmd:MD\_Resolution>  <gmd:distance gco:nilReason="missing"/>  </gmd:MD\_Resolution>  </gmd:spatialResolution>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

## Schematron rule

|  |
| --- |
| <sch:pattern fpi="Gemini2-mi18">  <sch:title>Spatial Resolution</sch:title> </sch:pattern>  <sch:pattern is-a="TypeNillablePattern" id="Gemini2-mi18-Nillable">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:spatialResolution/\*[1]/gmd:distance" /> </sch:pattern>  <!-- Test that an element has a value or has a valid nilReason value --> <sch:pattern abstract="true" id="TypeNillablePattern">  <sch:rule context="$context">  <sch:assert test="  (string-length(normalize-space(.)) &gt; 0) or  (@gco:nilReason = 'inapplicable' or  @gco:nilReason = 'missing' or  @gco:nilReason = 'template' or  @gco:nilReason = 'unknown' or  @gco:nilReason = 'withheld' or  starts-with(@gco:nilReason, 'other:'))">  AP-1a: The <sch:name/> element shall have a value or a valid Nil Reason.  </sch:assert>  </sch:rule> </sch:pattern> |

# Resource Locator

## Valid URI

### Error message

1. The value of resource locator does not appear to be a valid URL. It has a value of '[VALUE]'. The URL must start with either http://, https:// or ftp://.

### Context

1. MD\_Metadata.distributionInfo > MD\_Distribution.transferOptions > MD\_DigitalTransferOptions.onLine > CI\_OnlineResource.linkage

### Cause

1. The value of the gmd:linkage element must be a valid URL. The assertion test looks for the strings ‘http://’, ‘https://’ or ‘ftp://’ at the start of the element value string.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:distributionInfo>  <gmd:MD\_Distribution>  ...  <gmd:transferOptions>  <gmd:MD\_DigitalTransferOptions>  <gmd:onLine>  <gmd:CI\_OnlineResource>  <gmd:linkage>  <gmd:URL>www.anyuri.com</gmd:URL>  </gmd:linkage>  </gmd:CI\_OnlineResource>  </gmd:onLine>  </gmd:MD\_DigitalTransferOptions>  </gmd:transferOptions>  </gmd:MD\_Distribution>  </gmd:distributionInfo>  ...  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:distributionInfo>  <gmd:MD\_Distribution>  ...  <gmd:transferOptions>  <gmd:MD\_DigitalTransferOptions>  <gmd:onLine>  <gmd:CI\_OnlineResource>  <gmd:linkage>  <gmd:URL>http://www.anyuri.com</gmd:URL>  </gmd:linkage>  </gmd:CI\_OnlineResource>  </gmd:onLine>  </gmd:MD\_DigitalTransferOptions>  </gmd:transferOptions>  </gmd:MD\_Distribution>  </gmd:distributionInfo>  ...  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern fpi="Gemini2-mi19">  <sch:title>Resource locator</sch:title>  <sch:rule context="//gmd:MD\_Metadata[1]/gmd:distributionInfo/\*[1]/gmd:transferOptions/\*[1]/gmd:onLine/\*[1]">  <sch:assert test="  count(gmd:linkage) = 0 or  (starts-with(normalize-space(gmd:linkage/\*[1]), 'http://') or  starts-with(normalize-space(gmd:linkage/\*[1]), 'https://') or  starts-with(normalize-space(gmd:linkage/\*[1]), 'ftp://'))">  MI-19: The value of resource locator does not appear to be a valid URL.  It has a value of '<sch:value-of select="gmd:linkage/\*[1]"/>'.  The URL must start with either http://, https:// or ftp://.  </sch:assert>  </sch:rule> </sch:pattern> |

## Online resource is nillable

### Error message

1. The gmd:linkage element shall have a value or a valid Nil Reason.

### Context

1. MD\_Metadata.distributionInfo > MD\_Distribution.transferOptions > MD\_DigitalTransferOptions.onLine > CI\_OnlineResource.linkage

### Cause

1. The element named gmd:linkage has either no value or it has a gco:nilReason attribute with an invalid value. The value of the gco:nilReason attribute must be taken from a controlled list.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:distributionInfo>  <gmd:MD\_Distribution>  ...  <gmd:transferOptions>  <gmd:MD\_DigitalTransferOptions>  <gmd:onLine>  <gmd:CI\_OnlineResource>  <gmd:linkage/>  </gmd:CI\_OnlineResource>  </gmd:onLine>  </gmd:MD\_DigitalTransferOptions>  </gmd:transferOptions>  </gmd:MD\_Distribution>  </gmd:distributionInfo>  ...  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:distributionInfo>  <gmd:MD\_Distribution>  ...  <gmd:transferOptions>  <gmd:MD\_DigitalTransferOptions>  <gmd:onLine>  <gmd:CI\_OnlineResource>  <gmd:linkage gco:nilReason="missing"/>  </gmd:CI\_OnlineResource>  </gmd:onLine>  </gmd:MD\_DigitalTransferOptions>  </gmd:transferOptions>  </gmd:MD\_Distribution>  </gmd:distributionInfo>  ...  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern is-a="TypeNillablePattern" id="Gemini2-mi19-Nillable">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:distributionInfo/\*[1]/gmd:transferOptions/\*[1]/gmd:onLine/\*[1]/gmd:linkage" /> </sch:pattern>  <!-- Test that an element has a value or has a valid nilReason value --> <sch:pattern abstract="true" id="TypeNillablePattern">  <sch:rule context="$context">  <sch:assert test="  (string-length(normalize-space(.)) &gt; 0) or  (@gco:nilReason = 'inapplicable' or  @gco:nilReason = 'missing' or  @gco:nilReason = 'template' or  @gco:nilReason = 'unknown' or  @gco:nilReason = 'withheld' or  starts-with(@gco:nilReason, 'other:'))">  AP-1a: The <sch:name/> element shall have a value or a valid Nil Reason.  </sch:assert>  </sch:rule> </sch:pattern> |

# Data Format

## Nil reasons

### Error message

1. The gmd:name element shall have a value or a valid Nil Reason.
2. The gmd:version element shall have a value or a valid Nil Reason.

### Context

1. MD\_Metadata.distributionInfo > MD\_Distribution.distributionFormat > MD\_Format.name
2. MD\_Metadata.distributionInfo > MD\_Distribution.distributionFormat > MD\_Format.version

### Cause

1. The element named gmd:name has either no value or it has a gco:nilReason attribute with an invalid value, and / or, the element named gmd:version has either no value of it has a gco:nilReason attribute with an invalid value. The value of the gco:nilReason attribute must be taken from a controlled list.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:distributionInfo>  <gmd:MD\_Distribution>  <gmd:distributionFormat>  <gmd:MD\_Format>  <gmd:name/>  <gmd:version>  <gco:CharacterString></gco:CharacterString>  </gmd:version>  </gmd:MD\_Format>  </gmd:distributionFormat>  ...  </gmd:MD\_Distribution>  </gmd:distributionInfo>  ...  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:distributionInfo>  <gmd:MD\_Distribution>  <gmd:distributionFormat>  <gmd:MD\_Format>  <gmd:name>  <gco:CharacterString>GML</gco:CharacterString>  </gmd:name>  <gmd:version>  <gco:CharacterString>3.2</gco:CharacterString>  </gmd:version>  </gmd:MD\_Format>  </gmd:distributionFormat>  ...  </gmd:MD\_Distribution>  </gmd:distributionInfo>  ...  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern is-a="TypeNillablePattern" id="Gemini2-mi21-Name-Nillable">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:distributionInfo/\*[1]/gmd:distributionFormat/\*[1]/gmd:name" /> </sch:pattern>  <sch:pattern is-a="TypeNillableVersionPattern" id="Gemini2-mi21-Version-Nillable">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:distributionInfo/\*[1]/gmd:distributionFormat/\*[1]/gmd:version" /> </sch:pattern>  <!-- Test that an element has a value or has a valid nilReason value --> <sch:pattern abstract="true" id="TypeNillablePattern">  <sch:rule context="$context">  <sch:assert test="  (string-length(normalize-space(.)) &gt; 0) or  (@gco:nilReason = 'inapplicable' or  @gco:nilReason = 'missing' or  @gco:nilReason = 'template' or  @gco:nilReason = 'unknown' or  @gco:nilReason = 'withheld' or  starts-with(@gco:nilReason, 'other:'))">  AP-1a: The <sch:name/> element shall have a value or a valid Nil Reason.  </sch:assert>  </sch:rule>  </sch:pattern> |

## At least one MD\_Format is required

### Error message

1. Datasets or dataset series must have at least one gmd:distributionFormat/gmd:MD\_Format

### Context

1. MD\_Metadata.distributionInfo > MD\_Distribution.distributionFormat

### Cause

1. The dataset or dataset series metadata record is missing a gmd:distributionFormat/gmd:MD\_Format element. At least one such element is required.

### Example – fail

<gmd:MD\_Distribution>  
 <!--The ISO 19115 Constraints require this element!-->  
 <gmd:distributionFormat

xmlns:gco="http://www.isotc211.org/2005/gco" gco:nilReason="inapplicable"/>

### Example – pass

<gmd:MD\_Distribution>  
 <!--The ISO 19115 Constraints require this element!-->  
 <gmd:distributionFormat xmlns:gco="http://www.isotc211.org/2005/gco">  
 <gmd:MD\_Format>  
 <gmd:name xmlns:gco="http://www.isotc211.org/2005/gco"

gco:nilReason="unknown">  
 <gco:CharacterString>image/png</gco:CharacterString>  
 </gmd:name>  
 <gmd:version gco:nilReason="unknown" />  
 </gmd:MD\_Format>  
 </gmd:distributionFormat>

### Schematron rule

<sch:let name="hierarchyLevelCLValue" value="//gmd:MD\_Metadata/gmd:hierarchyLevel[1]/gmd:MD\_ScopeCode[1]/@codeListValue"/>

<sch:pattern fpi="Gemini2-mi21">  
 <sch:title>Data Format</sch:title>  
 <sch:p>The encoding and the storage or transmission format of the provided datasets or dataset  
 series shall be given using the gmd:distributionFormat/gmd:MD\_Format element. The multiplicity  
 of this element is 1..\*. </sch:p>  
 <sch:let name="MDFs" value="count(//gmd:MD\_Metadata[1]/gmd:distributionInfo/gmd:MD\_Distribution/gmd:distributionFormat/gmd:MD\_Format)"/>  
 <sch:rule context="//gmd:MD\_Metadata[1]/gmd:distributionInfo/gmd:MD\_Distribution">  
 <sch:report test="($hierarchyLevelCLValue = 'dataset' or $hierarchyLevelCLValue = 'series') and ($MDFs &lt; 1)">  
 MI-21a: Datasets or dataset series must have at least one gmd:distributionFormat/gmd:MD\_Format  
 We have <sch:value-of select="$MDFs"/>  
 </sch:report>  
 </sch:rule>  
</sch:pattern>

## nil reason must be unknown or inapplicable

### Error message

1. A value of *[some term for not known…]* is not expected here.   
   If the version of the encoding is not known, then use nilReason='unknown',  
   otherwise if the encoding is not versioned use nilReason='inapplicable', like:

**<gmd:version nilReason='unknown' />**

### Context

1. MD\_Metadata.distributionInfo > MD\_Distribution.distributionFormat > MD\_Format.version

### Cause

1. The version of an MD\_Format element is not known, but an appropriate nil reason is not given.

### Example – fail

<gmd:distributionFormat xmlns:gco="http://www.isotc211.org/2005/gco">  
 <gmd:MD\_Format>  
 <gmd:name xmlns:gco="http://www.isotc211.org/2005/gco"

gco:nilReason="unknown">  
 <gco:CharacterString>image/png</gco:CharacterString>  
 </gmd:name>  
 <gmd:version>  
 <gco:CharacterString>Not Applicable</gco:CharacterString>  
 </gmd:version>  
 </gmd:MD\_Format>  
</gmd:distributionFormat>

### Example – pass

<gmd:distributionFormat xmlns:gco="http://www.isotc211.org/2005/gco">  
 <gmd:MD\_Format>  
 <gmd:name xmlns:gco="http://www.isotc211.org/2005/gco"

gco:nilReason="unknown">  
 <gco:CharacterString>image/png</gco:CharacterString>  
 </gmd:name>  
 <gmd:version gco:nilReason="unknown" />  
 </gmd:MD\_Format>  
</gmd:distributionFormat>

### Schematron rule

<sch:let name="hierarchyLevelCLValue"

value="//gmd:MD\_Metadata/gmd:hierarchyLevel[1]/gmd:MD\_ScopeCode[1]/@codeListValue />

<sch:pattern fpi="Gemini2-mi21-versionNils">  
 <sch:p>

If the version of the encoding is unknown or if the encoding is not versioned,  
 the gmd:version shall be left empty and the nil reason attribute shall be provided  
 with either value "unknown" or "inapplicable" correspondingly

</sch:p>  
 <sch:rule context="//gmd:MD\_Metadata[1]/gmd:distributionInfo/gmd:MD\_Distribution/gmd:distributionFormat/gmd:MD\_Format/gmd:version/\*[1]">  
 <sch:report test="($hierarchyLevelCLValue = 'dataset' or $hierarchyLevelCLValue = 'series') and  
 (normalize-space(.) = 'NotApplicable'

or normalize-space(.) = 'Not Applicable'

or normalize-space(.) = 'Not entered' or  
 normalize-space(.) = 'Missing' or normalize-space(.) = 'missing' or  
 normalize-space(.) = 'Unknown' or normalize-space(.) = 'unknown' )">  
 MI-21b: A value of <sch:value-of select="normalize-space(.)"/> is not expected here.  
 If the version of the encoding is not known, then use nilReason='unknown',  
 otherwise if the encoding is not versioned use nilReason='inapplicable', like: &lt;gmd:version nilReason='unknown' /&gt;  
 </sch:report>  
 </sch:rule>  
</sch:pattern>

# Responsible Organisation

## Mandatory

### Error message

1. Responsible organisation is mandatory. At least one shall be provided.

### Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.pointOfContact
2. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.pointOfContact

### Cause

1. The assertion will fail if no responsible party information is provided. Specifically, there must be at least one pointOfContact element in the context of MD\_DataIdentification or SV\_ServiceIdentification.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:pointOfContact>  <gmd:CI\_ResponsibleParty>  <gmd:organisationName>  <gco:CharacterString>SeaZone Solutions Limited</gco:CharacterString>  </gmd:organisationName>  <gmd:contactInfo>  <gmd:CI\_Contact>  <gmd:address>  <gmd:CI\_Address>  <gmd:electronicMailAddress>  <gco:CharacterString>info@seazone.com</gco:CharacterString>  </gmd:electronicMailAddress>  </gmd:CI\_Address>  </gmd:address>  </gmd:CI\_Contact>  </gmd:contactInfo>  <gmd:role>  <gmd:CI\_RoleCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#CI\_RoleCode" codeListValue="owner">owner</gmd:CI\_RoleCode>  </gmd:role>  </gmd:CI\_ResponsibleParty>  </gmd:pointOfContact>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern fpi="Gemini2-23">  <sch:title>Responsible organisation</sch:title>  <sch:rule context="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]">  <sch:assert test="count(gmd:pointOfContact) &gt;= 1">  MI-23a: Responsible organisation is mandatory. At least one shall be provided.  </sch:assert>  </sch:rule>  …  </sch:pattern> |

## Responsible organisation not null

### Error message

1. The value of responsible organisation shall not be null.

### Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.pointOfContact
2. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.pointOfContact

### Cause

1. The assertion fails if the pointOfContact element has a nilReason attribute. The responsible party information must be provided in all cases and a nil reason is not acceptable.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:pointOfContact>  <gmd:CI\_ResponsibleParty>  <gmd:organisationName gco:nilReason="missing"/>  ...  <gmd:role>  <gmd:CI\_RoleCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#CI\_RoleCode" codeListValue="owner">owner</gmd:CI\_RoleCode>  </gmd:role>  </gmd:CI\_ResponsibleParty>  </gmd:pointOfContact>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:pointOfContact>  <gmd:CI\_ResponsibleParty>  <gmd:organisationName>  <gco:CharacterString>SeaZone Solutions Limited</gco:CharacterString>  </gmd:organisationName>  ...  <gmd:role>  <gmd:CI\_RoleCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#CI\_RoleCode" codeListValue="owner">owner</gmd:CI\_RoleCode>  </gmd:role>  </gmd:CI\_ResponsibleParty>  </gmd:pointOfContact>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern fpi="Gemini2-23">  <sch:title>Responsible organisation</sch:title>  …  <sch:rule context="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:pointOfContact">  <sch:assert test="count(@gco:nilReason) = 0">  MI-23b: The value of responsible organisation shall no be null.  </sch:assert>  </sch:rule>  </sch:pattern> |

## Organisation name

### Error message

1. One organisation name shall be provided.

### Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.pointOfContact > CI\_ResponsibleParty.organisationName
2. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.pointOfContact > CI\_ResponsibleParty.organisationName

### Cause

1. The organisation name has an obligation of conditional in the base ISO 19115 standard. However, it must be provided in GEMINI metadata. It must occur once only within the context of a CI\_ResponsibleParty element.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:pointOfContact>  <gmd:CI\_ResponsibleParty>  <gmd:individualName>  <gco:CharacterString>A N Other</gco:CharacterString>  </gmd:individualName>  <gmd:positionName>  <gco:CharacterString>Metadata Manager</gco:CharacterString>  </gmd:positionName>  <gmd:role>  <gmd:CI\_RoleCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#CI\_RoleCode" codeListValue="owner">owner</gmd:CI\_RoleCode>  </gmd:role>  </gmd:CI\_ResponsibleParty>  </gmd:pointOfContact>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:pointOfContact>  <gmd:CI\_ResponsibleParty>  <gmd:organisationName>  <gco:CharacterString>SeaZone Solutions Limited</gco:CharacterString>  </gmd:organisationName>  ...  <gmd:role>  <gmd:CI\_RoleCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#CI\_RoleCode" codeListValue="owner">owner</gmd:CI\_RoleCode>  </gmd:role>  </gmd:CI\_ResponsibleParty>  </gmd:pointOfContact>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern is-a="ResponsiblePartyPattern" id="Gemini2-mi23-ResponsibleParty">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:pointOfContact"/> </sch:pattern>  <!-- Test for the responsible party information --> <sch:pattern abstract="true" id="ResponsiblePartyPattern">  <!-- Count of Organisation Name and Individual Name >= 1 -->  <sch:rule context="$context">  …  <sch:assert test="count(\*/gmd:contactInfo/\*[1]/gmd:address/\*[1]/gmd:electronicMailAddress) = 1">  AP-5b: One email address shall be provided.  </sch:assert>  </sch:rule> </sch:pattern> |

## Email address

### Error message

1. One email address shall be provided.

### Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.pointOfContact > CI\_ResponsibleParty.contactInfo > CI\_Contact.address > CI\_Address.electronicMailAddress
2. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.pointOfContact > CI\_ResponsibleParty.contactInfo > CI\_Contact.address > CI\_Address.electronicMailAddress

### Cause

1. The element electronicMail Address is mandatory in GEMINI metadata. One shall be provided within the context of a CI\_ResponsibleParty element.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:pointOfContact>  <gmd:CI\_ResponsibleParty>  ...  <gmd:contactInfo>  <gmd:CI\_Contact>  <gmd:address>  <gmd:CI\_Address>  ...  </gmd:CI\_Address>  </gmd:address>  </gmd:CI\_Contact>  </gmd:contactInfo>  ...  </gmd:CI\_ResponsibleParty>  </gmd:pointOfContact>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:pointOfContact>  <gmd:CI\_ResponsibleParty>  ...  <gmd:contactInfo>  <gmd:CI\_Contact>  <gmd:address>  <gmd:CI\_Address>  <gmd:electronicMailAddress>  <gco:CharacterString>info@seazone.com</gco:CharacterString>  </gmd:electronicMailAddress>  </gmd:CI\_Address>  </gmd:address>  </gmd:CI\_Contact>  </gmd:contactInfo>  ...  </gmd:CI\_ResponsibleParty>  </gmd:pointOfContact>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern is-a="ResponsiblePartyPattern" id="Gemini2-mi23-ResponsibleParty">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:pointOfContact"/> </sch:pattern>  <!-- Test for the responsible party information --> <sch:pattern abstract="true" id="ResponsiblePartyPattern">  <!-- Count of Organisation Name and Individual Name >= 1 -->  <sch:rule context="$context">  ...  <sch:assert test="count(\*/gmd:contactInfo/\*[1]/gmd:address/\*[1]/gmd:electronicMailAddress) = 1">  AP-5b: One email address shall be provided.  </sch:assert>  </sch:rule> </sch:pattern> |

## Elements not nillable

### Error message

1. The gmd:organisationName element is not nillable and shall have a value.
2. The gmd:electronicMailAddress element is not nillable and shall have a value.

### Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.pointOfContact > CI\_ResponsibleParty.organisationName
2. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.pointOfContact > CI\_ResponsibleParty.organisationName
3. MD\_Metadata.identificationInfo > MD\_DataIdentification.pointOfContact > CI\_ResponsibleParty.contactInfo > CI\_Contact.address > CI\_Address.electronicMailAddress
4. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.pointOfContact > CI\_ResponsibleParty.contactInfo > CI\_Contact.address > CI\_Address.electronicMailAddress

### Cause

1. The element gmd:organisationName has been assigned a gco:nilReason attribute or the value of the element is an empty string, and / or the element named gmd:electronicMailAddress has been assigned a gco:nilReason attribute or the value of the element is an empty string.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:pointOfContact>  <gmd:CI\_ResponsibleParty>  <gmd:organisationName gco:nilReason="unknown"/>  <gmd:contactInfo>  <gmd:CI\_Contact>  <gmd:address>  <gmd:CI\_Address>  <gmd:electronicMailAddress gco:nilReason="missing"/>  </gmd:CI\_Address>  </gmd:address>  </gmd:CI\_Contact>  </gmd:contactInfo>  ...  </gmd:CI\_ResponsibleParty>  </gmd:pointOfContact>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:pointOfContact>  <gmd:CI\_ResponsibleParty>  <gmd:organisationName>  <gco:CharacterString>SeaZone Solutions Limited</gco:CharacterString>  </gmd:organisationName>  <gmd:contactInfo>  <gmd:CI\_Contact>  <gmd:address>  <gmd:CI\_Address>  <gmd:electronicMailAddress>  <gco:CharacterString>info@seazone.com</gco:CharacterString>  </gmd:electronicMailAddress>  </gmd:CI\_Address>  </gmd:address>  </gmd:CI\_Contact>  </gmd:contactInfo>  ...  </gmd:CI\_ResponsibleParty>  </gmd:pointOfContact>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern is-a="TypeNotNillablePattern" id="Gemini2-mi23-OrganisationName-NotNillable">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:pointOfContact/\*[1]/gmd:organisationName  | //gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:pointOfContact/\*[1]/gmd:contactInfo/\*[1]/gmd:address/\*[1]/gmd:electronicMailAddress" />  </sch:pattern>  <!-- Test that an element has a value - the value is not nillable --> <sch:pattern abstract="true" id="TypeNotNillablePattern">  <sch:rule context="$context">  <sch:assert test="string-length(.) &gt; 0 and count(./@gco:nilReason) = 0">  AP-2: The <sch:name/> element is not nillable and shall have a value.  </sch:assert>  </sch:rule> </sch:pattern> |

## Role code list value

### Error message

1. The codeListValue attribute does not have a value.

### Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.pointOfContact > CI\_ResponsibleParty.role
2. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.pointOfContact > CI\_ResponsibleParty.role

### Cause

1. This assertion fails if the attribute codeListValue of the element gmd:CI\_RoleCode does not have a value.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:pointOfContact>  <gmd:CI\_ResponsibleParty>  ...  <gmd:role>  <gmd:CI\_RoleCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#CI\_RoleCode" **codeListValue=""**>owner</gmd:CI\_RoleCode>  </gmd:role>  </gmd:CI\_ResponsibleParty>  </gmd:pointOfContact>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:pointOfContact>  <gmd:CI\_ResponsibleParty>  ...  <gmd:role>  <gmd:CI\_RoleCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#CI\_RoleCode" **codeListValue="owner"**>owner</gmd:CI\_RoleCode>  </gmd:role>  </gmd:CI\_ResponsibleParty>  </gmd:pointOfContact>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern is-a="IsoCodeListPattern" id="Gemini2-mi23-Role-CodeList">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:pointOfContact/\*[1]/gmd:role/\*[1]" /> </sch:pattern>  <!-- Test ISO code lists --> <sch:pattern abstract="true" id="IsoCodeListPattern">  <sch:rule context="$context">  <sch:assert test="string-length(@codeListValue) &gt; 0">  AP-3: The codeListValue attribute does not have a value.  </sch:assert>  </sch:rule> </sch:pattern> |

# Frequency of Update

## Error message

1. The codeListValue attribute does not have a value.

## Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.resourceMaintenance > MD\_MaintenanceInformation.maintenanceAndUpdateFrequency
2. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.resourceMaintenance > MD\_MaintenanceInformation.maintenanceAndUpdateFrequency

## Cause

1. This assertion fails if the attribute codeListValue of the element gmd:MD\_MaintenanceFrequencyCode does not have a value.

## Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:resourceMaintenance>  <gmd:MD\_MaintenanceInformation>  <gmd:maintenanceAndUpdateFrequency>  <gmd:MD\_MaintenanceFrequencyCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#MD\_MaintenanceFrequencyCode" **codeListValue=""**>notPlanned</gmd:MD\_MaintenanceFrequencyCode>  </gmd:maintenanceAndUpdateFrequency>  </gmd:MD\_MaintenanceInformation>  </gmd:resourceMaintenance>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

## Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:resourceMaintenance>  <gmd:MD\_MaintenanceInformation>  <gmd:maintenanceAndUpdateFrequency>  <gmd:MD\_MaintenanceFrequencyCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#MD\_MaintenanceFrequencyCode" **codeListValue="notPlanned"**>notPlanned</gmd:MD\_MaintenanceFrequencyCode>  </gmd:maintenanceAndUpdateFrequency>  </gmd:MD\_MaintenanceInformation>  </gmd:resourceMaintenance>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

## Schematron rule

|  |
| --- |
| <sch:pattern fpi="Gemini2-mi24">  <sch:title>Frequency of update</sch:title> </sch:pattern>  <sch:pattern is-a="IsoCodeListPattern" id="Gemini2-mi24-CodeList">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:resourceMaintenance/\*[1]/gmd:maintenanceAndUpdateFrequency/\*[1]" /> </sch:pattern>  <!-- Test ISO code lists --> <sch:pattern abstract="true" id="IsoCodeListPattern">  <sch:rule context="$context">  <sch:assert test="string-length(@codeListValue) &gt; 0">  AP-3: The codeListValue attribute does not have a value.  </sch:assert>  </sch:rule> </sch:pattern> |

# Limitations on Public Access

## Other constraints nillable

### Error message

1. The gmd:otherConstraints element shall have a value or a valid nil reason.

### Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.resourceConstraints > MD\_LegalConstraints.otherConstraints
2. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.resourceConstraints > MD\_LegalConstraints.otherConstraints

### Cause

1. The element named gmd:otherConstraints has either no value or it has a gco:nilReason attribute with an invalid value. The value of the gco:nilReason attribute must be taken from a controlled list.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:resourceConstraints>  <gmd:MD\_LegalConstraints>  ...  <gmd:accessConstraints>  <gmd:MD\_RestrictionCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#MD\_RestrictionCode" codeListValue="otherRestrictions">otherRestrictions</gmd:MD\_RestrictionCode>  </gmd:accessConstraints>  ...  <gmd:otherConstraints/>  </gmd:MD\_LegalConstraints>  </gmd:resourceConstraints>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:resourceConstraints>  <gmd:MD\_LegalConstraints>  ...  <gmd:accessConstraints>  <gmd:MD\_RestrictionCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#MD\_RestrictionCode" codeListValue="otherRestrictions">otherRestrictions</gmd:MD\_RestrictionCode>  </gmd:accessConstraints>  ...  <gmd:otherConstraints gco:nilReason="unknown"/>  </gmd:MD\_LegalConstraints>  </gmd:resourceConstraints>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern is-a="TypeNillablePattern" id="Gemini2-mi25-OtherConstraints-Nillable">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:resourceConstraints/\*[1]/gmd:otherConstraints" />  </sch:pattern>  <!-- Test that an element has a value or has a valid nilReason value --> <sch:pattern abstract="true" id="TypeNillablePattern">  <sch:rule context="$context">  <sch:assert test="  (string-length(normalize-space(.)) &gt; 0) or  (@gco:nilReason = 'inapplicable' or  @gco:nilReason = 'missing' or  @gco:nilReason = 'template' or  @gco:nilReason = 'unknown' or  @gco:nilReason = 'withheld' or  starts-with(@gco:nilReason, 'other:'))">  AP-1a: The <sch:name/> element shall have a value or a valid Nil Reason.  </sch:assert>  </sch:rule> </sch:pattern> |

## Code list value

### Error message

1. The codeListValue attribute does not have a value.

### Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.resourceConstraints > MD\_LegalConstraints.accessConstraints
2. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.resourceConstraints > MD\_LegalConstraints.accessConstraints

### Cause

1. This assertion fails if the attribute codeListValue of the element gmd:MD\_RestrictionCode does not have a value.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:resourceConstraints>  <gmd:MD\_LegalConstraints>  ...  <gmd:accessConstraints>  <gmd:MD\_RestrictionCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#MD\_RestrictionCode" **codeListValue=""**>otherRestrictions</gmd:MD\_RestrictionCode>  </gmd:accessConstraints>  ...  </gmd:MD\_LegalConstraints>  </gmd:resourceConstraints>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:resourceConstraints>  <gmd:MD\_LegalConstraints>  ...  <gmd:accessConstraints>  <gmd:MD\_RestrictionCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#MD\_RestrictionCode" **codeListValue="otherRestrictions"**>otherRestrictions</gmd:MD\_RestrictionCode>  </gmd:accessConstraints>  ...  </gmd:MD\_LegalConstraints>  </gmd:resourceConstraints>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern is-a="IsoCodeListPattern" id="Gemini2-mi25-AccessConstraints-CodeList">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:resourceConstraints/\*[1]/gmd:accessConstraints/\*[1]" /> </sch:pattern>  <!-- Test ISO code lists --> <sch:pattern abstract="true" id="IsoCodeListPattern">  <sch:rule context="$context">  <sch:assert test="string-length(@codeListValue) &gt; 0">  AP-3: The codeListValue attribute does not have a value.  </sch:assert>  </sch:rule> </sch:pattern> LimitationsOnPublicAccess code list valueError message  1. MI-25c (Limitations on Public Access): There must be one (and only one) LimitationsOnPublicAccess code list value specified using a gmx:Anchor in gmd:otherConstraints  Context  1. MD\_Metadata.identificationInfo > MD\_DataIdentification.resourceConstraints > MD\_LegalConstraints.otherConstraints 2. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.resourceConstraints > MD\_LegalConstraints.otherConstraints  Cause  1. There must be one (and only one) LimitationsOnPublicAccess code list value specified using a gmx:Anchor in gmd:otherConstraints, but none is provided.  Example – fail <gmd:resourceConstraints xlink:title="Limitations">  <gmd:MD\_LegalConstraints>  <gmd:accessConstraints>  <gmd:MD\_RestrictionCode  codeList="gmxCodelists.xml#MD\_RestrictionCode"  codeListValue="otherRestrictions" />  </gmd:accessConstraints>  <gmd:otherConstraints>  **<gco:CharacterString>otherRestrictions</gco:CharacterString>**  </gmd:otherConstraints>  </gmd:MD\_LegalConstraints> </gmd:resourceConstraints> Example – success <gmd:resourceConstraints xlink:title="Limitations">  <gmd:MD\_LegalConstraints>  <gmd:accessConstraints>  <gmd:MD\_RestrictionCode  codeList="gmxCodelists.xml#MD\_RestrictionCode"  codeListValue="otherRestrictions" />  </gmd:accessConstraints>  <gmd:otherConstraints>  **<gmx:Anchor xlink:href="http://inspire.ec.europa.eu/metadata-codelist/LimitationsOnPublicAccess/INSPIRE\_Directive\_Article13\_1g">**  **otherRestrictions**  **</gmx:Anchor>**  </gmd:otherConstraints>  </gmd:MD\_LegalConstraints> </gmd:resourceConstraints> Schematron rule <sch:pattern fpi="Gemini2-mi25-LimitationsOnPublicAccess">  <sch:title>LimitationsOnPublicAccess codelist</sch:title>  <sch:p>We need metadata to have a gmx:Anchor linking to one of the LimitationsOnPublicAccess codelist values from: http://inspire.ec.europa.eu/metadata-codelist/LimitationsOnPublicAccess</sch:p>  <sch:let name="LoPAurl" value="'http://inspire.ec.europa.eu/metadata-codelist/LimitationsOnPublicAccess/'"/>  <sch:let name="LoPAurlNum" value="count(//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:resourceConstraints/gmd:MD\_LegalConstraints/gmd:otherConstraints/gmx:Anchor/@xlink:href[contains(.,$LoPAurl)])"/>  <sch:rule context="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]">  <sch:report test="$LoPAurlNum != 1">  MI-25c (Limitations on Public Access): There must be one (and only one) LimitationsOnPublicAccess code list value specified using a gmx:Anchor in gmd:otherConstraints.  We have <sch:value-of select="$LoPAurlNum"/>  </sch:report>  </sch:rule> </sch:pattern> |

# Use Constraints

## CodeList Value (UseConstraints-CodeList)

### Error message

1. The codeListValue attribute does not have a value

### Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.resourceConstraints > MD\_LegalConstraints.useConstraints
2. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.resourceConstraints > MD\_LegalConstraints.useConstraints

### Cause

1. This assertion fails if the attribute codeListValue of the element gmd:MD\_RestrictionCode does not have a value.

### Example – fail

<gmd:resourceConstraints xlink:title="Conditions">  
 <gmd:MD\_LegalConstraints>  
 <gmd:useConstraints>  
 <gmd:MD\_RestrictionCode codeList="gmxCodelists.xml#MD\_RestrictionCode" **codeListValue=""** />  
 </gmd:useConstraints>  
 <gmd:otherConstraints>  
 <gmx:Anchor xlink:href="#">Conditions apply</gmx:Anchor>  
 </gmd:otherConstraints>  
 </gmd:MD\_LegalConstraints>  
</gmd:resourceConstraints>

### Example – success

<gmd:resourceConstraints xlink:title="Conditions">  
 <gmd:MD\_LegalConstraints>  
 <gmd:useConstraints>  
 <gmd:MD\_RestrictionCode codeList="gmxCodelists.xml#MD\_RestrictionCode" **codeListValue="otherRestrictions"** />  
 </gmd:useConstraints>  
 <gmd:otherConstraints>  
 <gmx:Anchor xlink:href="#">Conditions apply</gmx:Anchor>  
 </gmd:otherConstraints>  
 </gmd:MD\_LegalConstraints>  
</gmd:resourceConstraints>

### Schematron rule

<sch:pattern is-a="IsoCodeListPattern" id="Gemini2-mi26-UseConstraints-CodeList">  
 <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:resourceConstraints/\*[1]/gmd:useConstraints/\*[1]" />  
</sch:pattern>

<!-- Test ISO code lists -->  
<sch:pattern abstract="true" id="IsoCodeListPattern">  
 <sch:rule context="$context">  
 <sch:assert test="string-length(@codeListValue) &gt; 0"> AP-3: The codeListValue attribute does not have a value. This test may be called by the following Metadata Items: 6 - Keyword, 8 - Dataset Reference Date, 23 - Responsible Organisation, 24 - Frequency of Update, 25 - Limitations on Public Access, 26 - Use Constraints, 39 - Resource Type (aka 46 - Hierarchy Level), 42 - Specification, 50 - Spatial representation type, and 51 - Character encoding

</sch:assert>  
 </sch:rule>  
</sch:pattern>

# Additional Information Source

## Error message

1. The gmd:supplementalInformation element shall have a value or a valid Nil Reason.

## Context

1. MD\_Metadata.identificationInfo > MD\_Identification.supplementalInformation

## Cause

1. The metadata item ‘additional information source’ must have a value or a valid nil reason attribute. However, the item is optional so it can be omitted altogether.

## Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:supplementalInformation/>  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

## Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:supplementalInformation>  <gco:CharacterString>The additional information</gco:CharacterString>  </gmd:supplementalInformation>  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:supplementalInformation gco:nilReason="missing"/>  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

## Schematron rule

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| <sch:pattern fpi="Gemini2-mi27">  <sch:title>Additional information source</sch:title> </sch:pattern>  <sch:pattern is-a="TypeNillablePattern" id="Gemini2-mi27-Nillable">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:supplementalInformation"/> </sch:pattern>  <!-- Test that an element has a value or has a valid nilReason value --> <sch:pattern abstract="true" id="TypeNillablePattern">  <sch:rule context="$context">  <sch:assert test="  (string-length(normalize-space(.)) &gt; 0) or  (@gco:nilReason = 'inapplicable' or  @gco:nilReason = 'missing' or  @gco:nilReason = 'template' or  @gco:nilReason = 'unknown' or  @gco:nilReason = 'withheld' or  starts-with(@gco:nilReason, 'other:'))">  AP-1a: The <sch:name/> element shall have a value or a valid Nil Reason.  </sch:assert>  </sch:rule>  </sch:pattern> Metadata DateError message  1. The gmd:dateStamp element shall have a value or a valid Nil Reason.  Context  1. MD\_Metadata.dateStamp  Cause  1. The dateStamp element must have a valid value or a valid nil reason.  Example – fail  |  | | --- | | <gmd:MD\_Metadata>  ...  <gmd:dateStamp/>  ...  </gmd:MD\_Metadata> |  Example – success  |  | | --- | | <gmd:MD\_Metadata>  ...  <gmd:dateStamp>  <gco:Date>2010-11-10</gco:Date>  </gmd:dateStamp>  ...  </gmd:MD\_Metadata> | | <gmd:MD\_Metadata>  ...  <gmd:dateStamp gco:nilReason="missing"/>  ...  </gmd:MD\_Metadata> | | <gmd:MD\_Metadata>  ...  <gmd:dateStamp>  <gco:DateTime>2010-11-10T13:50:38</gco:DateTime>  </gmd:dateStamp>  ...  </gmd:MD\_Metadata> |  Schematron rule  |  | | --- | | <sch:pattern fpi="Gemini2-mi30">  <sch:title>Metadata date</sch:title> </sch:pattern>  <sch:pattern is-a="TypeNotNillablePattern" id="Gemini2-mi30-NotNillable">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:dateStamp/gco:Date"/> </sch:pattern>  <!-- Test that an element has a value or has a valid nilReason value -->  <sch:pattern abstract="true" id="TypeNillablePattern">  <sch:rule context="$context">  <sch:assert test="  (string-length(normalize-space(.)) &gt; 0) or  (@gco:nilReason = 'inapplicable' or  @gco:nilReason = 'missing' or  @gco:nilReason = 'template' or  @gco:nilReason = 'unknown' or  @gco:nilReason = 'withheld' or  starts-with(@gco:nilReason, 'other:'))">  AP-1a: The <sch:name/> element shall have a value or a valid Nil Reason.  </sch:assert>  </sch:rule> </sch:pattern> |  Metadata Language Metadata language is mandatoryError message  1. Metadata language is mandatory. One shall be provided.  Context  1. MD\_Metadata.language  Cause  1. MD\_Metadata.language is optional in ISO 19115, 19139 and GEMINI, but is mandatory in the INSPIRE metadata regulation and the UK Location profile of GEMINI.  Example – fail <gmd:MD\_Metadata>  ...  <gmd:fileIdentifier>  ...  </gmd:fileIdentifier>  <gmd:hierarchyLevel>  ...  </gmd:hierarchyLevel>  ...  </gmd:MD\_Metadata> Example – success <gmd:MD\_Metadata>  ...  <gmd:language>  <gmd:LanguageCode codeList="http://www.loc.gov/standards/iso639-2/php/code\_list.php" codeListValue="eng">eng</gmd:LanguageCode>  </gmd:language>  ...  </gmd:MD\_Metadata> Schematron rule <sch:pattern fpi="Gemini2-mi33">  <sch:title>Metadata language</sch:title>  <sch:rule context="//gmd:MD\_Metadata[1]">  <sch:assert test="count(gmd:language) = 1">  MI-33: Metadata language is mandatory. One shall be provided.  </sch:assert>  </sch:rule> </sch:pattern> Language codeError message  1. Language shall be implemented with gmd:LanguageCode.  Context  1. MD\_Metadata.language  Cause  1. The element named gmd:language may have one of two child elements: gco:CharacterString or gmd:LanguageCode. Either is valid according to the ISO 19139 XSD schemas. However, the encoding guidance [2] requires that only the gmd:LanguageCode element is used. The assertion fails if the child element of the element named gmd:language is gco:CharacterString.  Example – fail  |  | | --- | | <gmd:MD\_Metadata>  ...  <gmd:language>  <gco:CharacterString>eng</gco:CharacterString>  </gmd:language>  ...  </gmd:MD\_Metadata> |  Example – success  |  | | --- | | <gmd:MD\_Metadata>  ...  <gmd:language>  <gmd:LanguageCode  codeList="http://www.loc.gov/standards/iso639-2/php/code\_list.php"  codeListValue="eng">eng</gmd:LanguageCode>  </gmd:language>  ...  </gmd:MD\_Metadata> |  Schematron rule  |  | | --- | | <sch:pattern is-a="LanguagePattern" id="Gemini2-mi33-Language">  <sch:param name="context" value="/\*[1]/gmd:language"/>  </sch:pattern>  <!-- Test the language values (Metadata and Resource) --> <sch:pattern abstract="true" id="LanguagePattern">  <sch:rule context="$context">  <sch:assert test="count(gmd:LanguageCode) = 1">  AP-4a: Language shall be implemented with gmd:LanguageCode.  </sch:assert>  </sch:rule>  … </sch:pattern> |   Code list valueError message  1. The language code list value is absent.  Context  1. MD\_Metadata.language  Cause  1. This assertion fails if the attribute codeListValue of the element gmd:LanguageCode does not have a value.  Example – fail  |  | | --- | | <gmd:MD\_Metadata>  ...  <gmd:language>  <gmd:LanguageCode  codeList="http://www.loc.gov/standards/iso639-2/php/code\_list.php"  codeListValue="">eng</gmd:LanguageCode>  </gmd:language>  ...  </gmd:MD\_Metadata> |  Example – success  |  | | --- | | <gmd:MD\_Metadata>  ...  <gmd:language>  <gmd:LanguageCode  codeList="http://www.loc.gov/standards/iso639-2/php/code\_list.php"  codeListValue="eng">eng</gmd:LanguageCode>  </gmd:language>  ...  </gmd:MD\_Metadata> |  Schematron rule  |  | | --- | | <sch:pattern is-a="LanguagePattern" id="Gemini2-mi33-Language">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:language"/> </sch:pattern>  <!-- Test the language values (Metadata and Resource) --> <sch:pattern abstract="true" id="LanguagePattern">  …  <sch:rule context="$context/gmd:LanguageCode">  <sch:assert test="string-length(@codeListValue) &gt; 0">  AP-4b: The language code list value is absent.  When a dataset has no natural language use code zxx  </sch:assert>  …  </sch:rule> </sch:pattern> Language code should be three charactersError message  1. The language code should be three characters  Context  1. MD\_Metadata.language  Cause  1. This assertion fails if the attribute codeListValue of the element gmd:LanguageCode does not have a value with the required length. A code of three letters shall be used.  Example – fail <gmd:language>  <gmd:LanguageCode codeListValue="**en**"  codeList="http://www.loc.gov/standards/iso639-2/php/code\_list.php">  English  </gmd:LanguageCode>  </gmd:language> Example – pass <gmd:MD\_Metadata>  ...  <gmd:language>  <gmd:LanguageCode codeListValue="**eng**"  codeList="http://www.loc.gov/standards/iso639-2/php/code\_list.php">  English  </gmd:LanguageCode>  </gmd:language>  ...  </gmd:MD\_Metadata> Schematron rule <!-- Test the language values (Metadata and Resource) --> <sch:pattern abstract="true" id="LanguagePattern">  <sch:rule context="$context"> …  <sch:report test="string-length(@codeListValue) != 3">  AP-4c: The language code should be three characters  </sch:report>  </sch:rule> </sch:pattern> |  Metadata Point Of Contact Not nullError message  1. The value of metadata point of contact shall not be null.  Context  1. MD\_Metadata.contact  Cause  1. The assertion will fail if the metadata item ‘metadata point of contact’ has a nilReason attribute.  Example – fail  |  | | --- | | <gmd:MD\_Metadata>  ...  <gmd:contact gco:nilReason="missing"/>  ...  </gmd:MD\_Metadata> |  Example – success  |  | | --- | | <gmd:MD\_Metadata>  ...  <gmd:contact>  ...  </gmd:contact>  ...  </gmd:MD\_Metadata> |  Schematron rule  |  | | --- | | <sch:pattern fpi="Gemini2-mi35">  <sch:title>Metadata point of contact</sch:title>  <sch:rule context="//gmd:MD\_Metadata[1]/gmd:contact">  <sch:assert test="count(@gco:nilReason) = 0">  MI-35a: The value of metadata point of contact shall not be null.  </sch:assert>  </sch:rule> </sch:pattern> |   Point of contact roleError message  1. At least one metadata point of contact shall have the role ‘pointOfContact’.  Context  1. MD\_Metadata.contact > CI\_ResponsibleParty.role  Cause  1. This assertion fails if none of the ‘metadata point of contact’ instances have a role with the value ‘pointOfContact’.  Example – fail  |  | | --- | | <gmd:MD\_Metadata>  ...  <gmd:contact>  <gmd:CI\_ResponsibleParty>  ...  <gmd:role>  <gmd:CI\_RoleCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#CI\_RoleCode" codeListValue="distributor">distributor</gmd:CI\_RoleCode>  </gmd:role>  </gmd:CI\_ResponsibleParty>  </gmd:contact>  <gmd:contact>  <gmd:CI\_ResponsibleParty>  ...  <gmd:role>  <gmd:CI\_RoleCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#CI\_RoleCode" codeListValue="custodian">custodian</gmd:CI\_RoleCode>  </gmd:role>  </gmd:CI\_ResponsibleParty>  </gmd:contact>  ...  </gmd:MD\_Metadata> |  Example – success  |  | | --- | | <gmd:MD\_Metadata>  ...  <gmd:contact>  <gmd:CI\_ResponsibleParty>  ...  <gmd:role>  <gmd:CI\_RoleCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#CI\_RoleCode" **codeListValue="pointOfContact"**>pointOfContact</gmd:CI\_RoleCode>  </gmd:role>  </gmd:CI\_ResponsibleParty>  </gmd:contact>  <gmd:contact>  <gmd:CI\_ResponsibleParty>  ...  <gmd:role>  <gmd:CI\_RoleCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#CI\_RoleCode" codeListValue="custodian">custodian</gmd:CI\_RoleCode>  </gmd:role>  </gmd:CI\_ResponsibleParty>  </gmd:contact>  ...  </gmd:MD\_Metadata> |  Schematron rule  |  | | --- | | <sch:pattern fpi="Gemini2-mi35">  <sch:title>Metadata point of contact</sch:title>  <sch:rule context="//gmd:MD\_Metadata[1]/gmd:contact">  …  <sch:assert  test="count(parent::node()[gmd:contact/\*[1]/gmd:role/\*[1]/@codeListValue = 'pointOfContact']) >= 1">  MI-35b: At least one metadata point of contact shall have the role 'pointOfContact'.  </sch:assert>  </sch:rule>  </sch:pattern> |   Organisation nameError message  1. One organisation name shall be provided.  Context  1. MD\_Metadata.contact  Cause  1. The organisation name has an obligation of conditional in the base ISO 19115 standard. However, it must be provided in GEMINI metadata. It must occur once only within the context of an CI\_ResponsibleParty element.  Example – fail  |  | | --- | | <gmd:MD\_Metadata>  ...  <gmd:contact>  <gmd:CI\_ResponsibleParty>  <gmd:individualName>  <gco:CharacterString>A N Other</gco:CharacterString>  </gmd:individualName>  <gmd:positionName>  <gco:CharacterString>Metadata Manager</gco:CharacterString>  </gmd:positionName>  ...  </gmd:CI\_ResponsibleParty>  </gmd:contact>  ...  </gmd:MD\_Metadata> |  Example – success  |  | | --- | | <gmd:MD\_Metadata>  ...  <gmd:contact>  <gmd:CI\_ResponsibleParty>  ...  <gmd:organisationName>  <gco:CharacterString>SeaZone Solutions Limited</gco:CharacterString>  </gmd:organisationName>  ...  </gmd:CI\_ResponsibleParty>  </gmd:contact>  ...  </gmd:MD\_Metadata> |  Schematron rule  |  | | --- | | <sch:pattern is-a="ResponsiblePartyPattern" id="Gemini2-mi35-ResponsibleParty">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:contact"/>  </sch:pattern>  <!-- Test for the responsible party information --> <sch:pattern abstract="true" id="ResponsiblePartyPattern">  <!-- Count of Organisation Name and Individual Name >= 1 -->  <sch:rule context="$context">  <sch:assert test="count(\*/gmd:organisationName) = 1">  AP-5a: One organisation name shall be provided.  </sch:assert>  …  </sch:rule> </sch:pattern> |   Email addressError message  1. One email address shall be provided.  Context  1. MD\_Metadata.contact  Cause  1. The element electronicMailAddress is mandatory in GEMINI metadata. One shall be provided within the context of an CI\_ResponsibleParty element.  Example – fail  |  | | --- | | <gmd:MD\_Metadata>  ...  <gmd:contact>  <gmd:CI\_ResponsibleParty>  ...  <gmd:contactInfo>  <gmd:CI\_Contact>  ...  <gmd:address>  <gmd:CI\_Address>  ...  <gmd:electronicMailAddress>  <gco:CharacterString>sales@seazone.com</gco:CharacterString>  </gmd:electronicMailAddress>  <gmd:electronicMailAddress>  <gco:CharacterString>info@seazone.com</gco:CharacterString>  </gmd:electronicMailAddress>  </gmd:CI\_Address>  </gmd:address>  </gmd:CI\_Contact>  </gmd:contactInfo>  ...  </gmd:CI\_ResponsibleParty>  </gmd:contact>  ...  </gmd:MD\_Metadata> |  Example – success  |  | | --- | | <gmd:MD\_Metadata>  ...  <gmd:contact>  <gmd:CI\_ResponsibleParty>  ...  <gmd:contactInfo>  <gmd:CI\_Contact>  ...  <gmd:address>  <gmd:CI\_Address>  ...  <gmd:electronicMailAddress>  <gco:CharacterString>info@seazone.com</gco:CharacterString>  </gmd:electronicMailAddress>  </gmd:CI\_Address>  </gmd:address>  </gmd:CI\_Contact>  </gmd:contactInfo>  ...  </gmd:CI\_ResponsibleParty>  </gmd:contact>  ...  </gmd:MD\_Metadata> |  Schematron rule  |  | | --- | | <sch:pattern is-a="ResponsiblePartyPattern" id="Gemini2-mi35-ResponsibleParty">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:contact"/>  </sch:pattern>  <!-- Test for the responsible party information --> <sch:pattern abstract="true" id="ResponsiblePartyPattern">  <!-- Count of Organisation Name and Individual Name >= 1 -->  <sch:rule context="$context">  ...  <sch:assert test="count(\*/gmd:contactInfo/\*[1]/gmd:address/\*[1]/gmd:electronicMailAddress) = 1">  AP-5b: One email address shall be provided  </sch:assert>  </sch:rule>  </sch:pattern> |  Email address not nillableError message  1. The gmd:electronicMailAddress element is not nillable and shall have a value.  Context  1. MD\_Metadata.contact > CI\_ResponsibleParty.contactInfo > CI\_Contact.address > CI\_Address.electronicMailAddress  Cause  1. The element named gmd:electronicMailAddress has been assigned a gco:nilReason attribute or the value of the element is an empty string.  Example – fail  |  | | --- | | <gmd:MD\_Metadata>  ...  <gmd:contact>  <gmd:CI\_ResponsibleParty>  ...  <gmd:contactInfo>  <gmd:CI\_Contact>  ...  <gmd:address>  <gmd:CI\_Address>  ...  <gmd:electronicMailAddress gco:nilReason="missing"/>  </gmd:CI\_Address>  </gmd:address>  </gmd:CI\_Contact>  </gmd:contactInfo>  ...  </gmd:CI\_ResponsibleParty>  </gmd:contact>  ...  </gmd:MD\_Metadata> |  Example – success  |  | | --- | | <gmd:MD\_Metadata>  ...  <gmd:contact>  <gmd:CI\_ResponsibleParty>  ...  <gmd:contactInfo>  <gmd:CI\_Contact>  ...  <gmd:address>  <gmd:CI\_Address>  ...  <gmd:electronicMailAddress>  <gco:CharacterString>info@seazone.com</gco:CharacterString>  </gmd:electronicMailAddress>  </gmd:CI\_Address>  </gmd:address>  </gmd:CI\_Contact>  </gmd:contactInfo>  ...  </gmd:CI\_ResponsibleParty>  </gmd:contact>  ...  </gmd:MD\_Metadata> |  Schematron rule  |  | | --- | | <sch:pattern is-a="TypeNotNillablePattern" id="Gemini2-mi35-NotNillable">  <sch:param name="context"  value="//gmd:MD\_Metadata[1]/gmd:contact/\*[1]/gmd:organisationName | /\*[1]/gmd:contact/\*[1]/gmd:contactInfo/\*[1]/gmd:address/\*[1]/gmd:electronicMailAddress" />  </sch:pattern> | |

# Unique Resource Identifier

## Mandatory

### Error message

1. Unique resource identifier is mandatory for datasets and series. One or more shall be provided.

### Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.citation > CI\_Citation.identifier

### Cause

1. A metadata instance for a dataset or a series must contain the ‘unique resource identifier’ of the dataset or series. This assertion fails if the identifier element of CI\_Citation is omitted.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:hierarchyLevel>  <gmd:MD\_ScopeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#MD\_ScopeCode" codeListValue="dataset">dataset</gmd:MD\_ScopeCode>  </gmd:hierarchyLevel>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  <gmd:citation>  <gmd:CI\_Citation>  ...  </gmd:CI\_Citation>  </gmd:citation>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:hierarchyLevel>  <gmd:MD\_ScopeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#MD\_ScopeCode" codeListValue="dataset">dataset</gmd:MD\_ScopeCode>  </gmd:hierarchyLevel>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  <gmd:citation>  <gmd:CI\_Citation>  ...  <gmd:identifier>  <gmd:RS\_Identifier>  <gmd:code>  <gco:CharacterString>42</gco:CharacterString>  </gmd:code>  </gmd:RS\_Identifier>  </gmd:identifier>  </gmd:CI\_Citation>  </gmd:citation>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern fpi="Gemini2-mi36">  <sch:title>(Unique) Resource Identifier</sch:title>  <sch:rule context="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:citation/\*[1]">  <sch:assert test="  ((../../../../gmd:hierarchyLevel[1]/\*[1]/@codeListValue = 'dataset' or  ../../../../gmd:hierarchyLevel[1]/\*[1]/@codeListValue = 'series') and  count(gmd:identifier) &gt;= 1) or  (../../../../gmd:hierarchyLevel[1]/\*[1]/@codeListValue != 'dataset' and  ../../../../gmd:hierarchyLevel[1]/\*[1]/@codeListValue != 'series') or  count(../../../../gmd:hierarchyLevel) = 0">  MI-36: (Unique) Resource Identifier is mandatory for datasets and series.  One or more shall be provided.  </sch:assert>  </sch:rule>  </sch:pattern> |

## Unique resource identifier is not nillable

### Error message

1. The gmd:code element is not nillable and shall have a value.

### Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.citation > CI\_Citation.identifier > RS\_Identifier.code

### Cause

1. The element gmd:code has been assigned a gco:nilReason attribute or the value of the element is an empty string.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  <gmd:citation>  <gmd:CI\_Citation>  ...  <gmd:identifier>  <gmd:RS\_Identifier>  <gmd:code gco:nilReason="missing"/>  </gmd:RS\_Identifier>  </gmd:identifier>  </gmd:CI\_Citation>  </gmd:citation>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  <gmd:citation>  <gmd:CI\_Citation>  ...  <gmd:identifier>  <gmd:RS\_Identifier>  <gmd:code>  <gco:CharacterString>42</gco:CharacterString>  </gmd:code>  </gmd:RS\_Identifier>  </gmd:identifier>  </gmd:CI\_Citation>  </gmd:citation>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <!-- Ensure that (Unique) Resource Identifier has a value --> <sch:pattern is-a="TypeNotNillablePattern" id="Gemini2-mi36-Code-NotNillable">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:citation/\*[1]/gmd:identifier/\*[1]/gmd:code" />  </sch:pattern>  <!-- Test that an element has a value - the value is not nillable --> <sch:pattern abstract="true" id="TypeNotNillablePattern">  <sch:rule context="$context">  <sch:assert test="string-length(.) &gt; 0 and count(./@gco:nilReason) = 0">  AP-2: The <sch:name/> element is not nillable and shall have a value.  </sch:assert>  </sch:rule> </sch:pattern> |

## Codespace is nillable

### Error message

1. The gmd:codeSpace element shall have a value or a valid Nil Reason.

### Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.citation > CI\_Citation.identifier > RS\_Identifier.codeSpace

### Cause

1. The element named gmd:codeSpace either has no value or it has a gco:nilReason attribute with an invalid value. The value of the gco:nilReason attribute must be taken from a controlled list.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  <gmd:citation>  <gmd:CI\_Citation>  ...  <gmd:identifier>  <gmd:RS\_Identifier>  <gmd:code>  <gco:CharacterString>42</gco:CharacterString>  </gmd:code>  <gmd:codeSpace/>  </gmd:RS\_Identifier>  </gmd:identifier>  </gmd:CI\_Citation>  </gmd:citation>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  <gmd:citation>  <gmd:CI\_Citation>  ...  <gmd:identifier>  <gmd:RS\_Identifier>  <gmd:code>  <gco:CharacterString>42</gco:CharacterString>  </gmd:code>  <gmd:codeSpace>  <gco:CharacterString>http://www.anyuri.com</gco:CharacterString>  </gmd:codeSpace>  </gmd:RS\_Identifier>  </gmd:identifier>  </gmd:CI\_Citation>  </gmd:citation>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Schematron rule

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| <sch:pattern is-a="TypeNillablePattern" id="Gemini2-mi36-CodeSpace-Nillable">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:citation/\*[1]/gmd:identifier/\*[1]/gmd:codeSpace" /> </sch:pattern>  <!-- Test that an element has a value or has a valid nilReason value --> <sch:pattern abstract="true" id="TypeNillablePattern">  <sch:rule context="$context">  <sch:assert test="  (string-length(normalize-space(.)) &gt; 0) or  (@gco:nilReason = 'inapplicable' or  @gco:nilReason = 'missing' or  @gco:nilReason = 'template' or  @gco:nilReason = 'unknown' or  @gco:nilReason = 'withheld' or  starts-with(@gco:nilReason, 'other:'))">  AP-1a: The <sch:name/> element shall have a value or a valid Nil Reason.  </sch:assert>  </sch:rule> </sch:pattern> Spatial Data Service TypeMandatory for servicesError message  1. If the resource type is service, one spatial data service type shall be provided.  Context  1. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.serviceType  Cause  1. This assertion fails if the serviceType element is omitted from metadata.  Example – fail  |  | | --- | | <gmd:MD\_Metadata>  ...  <gmd:hierarchyLevel>  <gmd:MD\_ScopeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/ML\_gmxCodelists.xml#MD\_ScopeCode" codeListValue="service">service</gmd:MD\_ScopeCode>  </gmd:hierarchyLevel>  ...  <gmd:identificationInfo>  <srv:SV\_ServiceIdentification>  ...  </srv:SV\_ServiceIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |  Example – success  |  | | --- | | <gmd:MD\_Metadata>  ...  <gmd:hierarchyLevel>  <gmd:MD\_ScopeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/ML\_gmxCodelists.xml#MD\_ScopeCode" codeListValue="service">service</gmd:MD\_ScopeCode>  </gmd:hierarchyLevel>  ...  <gmd:identificationInfo>  <srv:SV\_ServiceIdentification>  ...  <srv:serviceType>  <gco:LocalName>download</gco:LocalName>  </srv:serviceType>  ...  </srv:SV\_ServiceIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |  Schematron rule  |  | | --- | | <sch:pattern fpi="Gemini2-mi37">  <sch:title>Spatial data service type</sch:title>  <sch:rule context="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/srv:SV\_ServiceIdentification | /\*[1]/gmd:identificationInfo[1]/\*[@gco:isoType = 'srv:SV\_ServiceIdentification'][1]">  <sch:assert test="  (../../gmd:hierarchyLevel/\*[1]/@codeListValue = 'service' and  count(srv:serviceType) = 1) or  ../../gmd:hierarchyLevel/\*[1]/@codeListValue != 'service'">  MI-37a: If the resource type is service, one spatial data service type shall be provided.  </sch:assert>  </sch:rule>  </sch:pattern> |  Code list valueError message  1. Service type shall be one of 'discovery', 'view', 'download', 'transformation', 'invoke' or 'other' following INSPIRE generic names.  Context  1. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.serviceType  Cause  1. The base standards (ISO 19115 or ISO 19139) do not restrict the value of the service type element. The INSPIRE generic names are:  * discovery * view * download * transformation * invoke * other  1. This assertion will fail if any other value is used.  Example – fail  |  | | --- | | <gmd:MD\_Metadata>  ...  <gmd:hierarchyLevel>  <gmd:MD\_ScopeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/ML\_gmxCodelists.xml#MD\_ScopeCode" codeListValue="service">service</gmd:MD\_ScopeCode>  </gmd:hierarchyLevel>  ...  <gmd:identificationInfo>  <srv:SV\_ServiceIdentification>  ...  <srv:serviceType>  <gco:LocalName>map</gco:LocalName>  </srv:serviceType>  ...  </srv:SV\_ServiceIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |  Example – success  |  | | --- | | <gmd:MD\_Metadata>  ...  <gmd:hierarchyLevel>  <gmd:MD\_ScopeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/ML\_gmxCodelists.xml#MD\_ScopeCode" codeListValue="service">service</gmd:MD\_ScopeCode>  </gmd:hierarchyLevel>  ...  <gmd:identificationInfo>  <srv:SV\_ServiceIdentification>  ...  <srv:serviceType>  <gco:LocalName>download</gco:LocalName>  </srv:serviceType>  ...  </srv:SV\_ServiceIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |  Schematron rule  |  | | --- | | <sch:pattern fpi="Gemini2-mi37">  <sch:title>Spatial data service type</sch:title>  <sch:rule  context="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/srv:SV\_ServiceIdentification | /\*[1]/gmd:identificationInfo[1]/\*[@gco:isoType = 'srv:SV\_ServiceIdentification'][1]">  …  <sch:assert test="  srv:serviceType/\*[1] = 'discovery' or  srv:serviceType/\*[1] = 'view' or  srv:serviceType/\*[1] = 'download' or  srv:serviceType/\*[1] = 'transformation' or  srv:serviceType/\*[1] = 'invoke' or  srv:serviceType/\*[1] = 'other'">  MI-37b: Service type shall be one of 'discovery', 'view', 'download', 'transformation', 'invoke' or 'other' following INSPIRE generic names.  </sch:assert>  </sch:rule>  </sch:pattern> |  Service type is not nillableError message  1. The srv:serviceType element is not nillable and shall have a value.  Context  1. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.serviceType  Cause  1. The element name srv:serviceType has been assigned a gco:nilReason attribute or the value of the element is an empty string.  Example – fail  |  | | --- | | <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <srv:SV\_ServiceIdentification>  ...  <srv:serviceType gco:nilReason="unknown"/>  ...  </srv:SV\_ServiceIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |  Example – success  |  | | --- | | <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <srv:SV\_ServiceIdentification>  ...  <srv:serviceType>  <gco:LocalName>download</gco:LocalName>  </srv:serviceType>  ...  </srv:SV\_ServiceIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |  Schematron rule  |  | | --- | | <sch:pattern is-a="TypeNillablePattern" id="Gemini2-mi37-Nillable">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/srv:serviceType"/> </sch:pattern>  <!-- Test that an element has a value or has a valid nilReason value --> <sch:pattern abstract="true" id="TypeNillablePattern">  <sch:rule context="$context">  <sch:assert test="  (string-length(normalize-space(.)) &gt; 0) or  (@gco:nilReason = 'inapplicable' or  @gco:nilReason = 'missing' or  @gco:nilReason = 'template' or  @gco:nilReason = 'unknown' or  @gco:nilReason = 'withheld' or  starts-with(@gco:nilReason, 'other:'))">  AP-1a: The <sch:name/> element shall have a value or a valid Nil Reason.  </sch:assert>  </sch:rule>  </sch:pattern> |  Coupled ResourceError message  1. Coupled resource shall be implemented by reference using the xlink:href attribute.  Context  1. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.operatesOn  Cause  1. Metadata elements are typically encoded ‘by value’, that is the value of the element is encoded directly in the metadata instance. The ISO 19139 standard provides a mechanism for encoding values ‘by reference’ using the xlink:href attribute. The INSPIRE metadata encoding guidance stipulates that the metadata item ‘coupled resource’ is implemented ‘by reference’. This assertion fails if the element is implemented ‘by value’. The encoding guidance [2] contains a discussion of ‘by value’ and ‘by reference’ encoding (see section 2.2.11).  Example – fail  |  | | --- | | <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <srv:SV\_ServiceIdentification>  ...  <srv:operatesOn>  <gmd:MD\_DataIdentification>  ...  </gmd:MD\_DataIdentification>  </srv:operatesOn>  </srv:SV\_ServiceIdentification>  </gmd:identificationInfo>  </gmd:MD\_Metadata> |  Example – success  |  | | --- | | <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <srv:SV\_ServiceIdentification>  ...  <srv:operatesOn xlink:href="D562983F-9203-4E59-BF35-87F6FD96134C"/>  </srv:SV\_ServiceIdentification>  </gmd:identificationInfo>  </gmd:MD\_Metadata> |  Schematron rule  |  | | --- | | <sch:pattern fpi="Gemini2-mi38">  <sch:title>Coupled resource</sch:title>  <sch:rule context="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/srv:operatesOn">  <sch:assert test="count(@xlink:href) = 1">  MI-38: Coupled resource shall be implemented by reference  using the xlink:href attribute.  </sch:assert>  </sch:rule>  </sch:pattern> | |

# Resource Type

## Mandatory

### Error message

1. Resource type is mandatory. One shall be provided.

### Context

1. MD\_Metadata.hierarchyLevel

### Cause

1. The metadata item ‘resource type’ is encoded in metadata using the hierarchyLevel element. This assertion fails if the hierarchyLevel element is omitted from a metadata instance.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:hierarchyLevel>  <gmd:MD\_ScopeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#MD\_ScopeCode" codeListValue="dataset">dataset</gmd:MD\_ScopeCode>  </gmd:hierarchyLevel>  ...  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern fpi="Gemini2-mi39">  <sch:title>Resource type</sch:title>  <sch:rule context="//gmd:MD\_Metadata[1]">  <sch:assert test="count(gmd:hierarchyLevel) = 1">  MI-39a: Resource type is mandatory. One shall be provided.  </sch:assert>  …  </sch:rule> </sch:pattern> |

## Specific value

### Error message

1. Value of resource type shall be 'dataset', 'series' or 'service'.

### Context

1. MD\_Metadata.hierarchyLevel

### Cause

1. The value of the element hierarchyLevel is taken from a code list. The encoding guidance [2] and Schematron schema limits this list to ‘dataset’, ‘series’ or ‘service’. This assertion will fail if any other value is used.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:hierarchyLevel>  <gmd:MD\_ScopeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#MD\_ScopeCode" codeListValue="attribute">attribute</gmd:MD\_ScopeCode>  </gmd:hierarchyLevel>  ...  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:hierarchyLevel>  <gmd:MD\_ScopeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#MD\_ScopeCode" codeListValue="dataset">dataset</gmd:MD\_ScopeCode>  </gmd:hierarchyLevel>  ...  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern fpi="Gemini2-mi39">  <sch:title>Resource type</sch:title>  <sch:rule context="//gmd:MD\_Metadata[1]">  …  <sch:assert test="  gmd:hierarchyLevel[1]/\*[1]/@codeListValue = 'dataset' or  gmd:hierarchyLevel[1]/\*[1]/@codeListValue = 'series' or  gmd:hierarchyLevel[1]/\*[1]/@codeListValue = 'service'">  MI-39b: Value of resource type shall be 'dataset', 'series' or 'service'.  </sch:assert>  </sch:rule> </sch:pattern> |

## Code list

### Error message

1. The codeListValue attribute does not have a value.

### Context

1. MD\_Metadata.hierarchyLevel

### Cause

1. This assertion fails if the attribute codeListValue of the element gmd:MD\_ScopeCode does not have a value.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:hierarchyLevel>  <gmd:MD\_ScopeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#MD\_ScopeCode" **codeListValue=""**>dataset</gmd:MD\_ScopeCode>  </gmd:hierarchyLevel>  ...  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:hierarchyLevel>  <gmd:MD\_ScopeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#MD\_ScopeCode" **codeListValue="dataset"**>dataset</gmd:MD\_ScopeCode>  </gmd:hierarchyLevel>  ...  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern is-a="IsoCodeListPattern" id="Gemini2-mi39-CodeList">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:hierarchyLevel/\*[1]"/> </sch:pattern>  <!-- Test ISO code lists -->  <sch:pattern abstract="true" id="IsoCodeListPattern">  <sch:rule context="$context">  <sch:assert test="string-length(@codeListValue) &gt; 0">  AP-3: The codeListValue attribute does not have a value.  </sch:assert>  </sch:rule>  </sch:pattern> |

# Conformity

## Explanation is nillable

### Error message

1. The gmd:explanation element shall have a value or a valid Nil Reason.

### Context

1. MD\_Metadata.dataQualityInfo > DQ\_DataQuality.report > DQ\_DomainConsistency.result > DQ\_ConformanceResult.explanation

### Cause

1. An ‘explanation’ of the conformity is not required in GEMINI metadata. However, the element gmd:explanation is mandatory in the XML encoding. It must have either a value or a valid nil reason. This assertion fails if the element named gmd:explanation has no value or it has a gco:nilReason attribute with an invalid value.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:dataQualityInfo>  <gmd:DQ\_DataQuality>  ...  <gmd:report>  <gmd:DQ\_DomainConsistency>  ...  <gmd:result>  <gmd:DQ\_ConformanceResult>  ...  <gmd:explanation/>  ...  </gmd:DQ\_ConformanceResult>  </gmd:result>  </gmd:DQ\_DomainConsistency>  </gmd:report>  ...  </gmd:DQ\_DataQuality>  </gmd:dataQualityInfo>  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:dataQualityInfo>  <gmd:DQ\_DataQuality>  ...  <gmd:report>  <gmd:DQ\_DomainConsistency>  ...  <gmd:result>  <gmd:DQ\_ConformanceResult>  ...  <gmd:explanation gco:nilReason="missing"/>  ...  </gmd:DQ\_ConformanceResult>  </gmd:result>  </gmd:DQ\_DomainConsistency>  </gmd:report>  ...  </gmd:DQ\_DataQuality>  </gmd:dataQualityInfo>  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern is-a="TypeNillablePattern" id="Gemini2-mi41-Explanation-Nillable">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:dataQualityInfo/\*[1]/gmd:report/\*[1]/gmd:result/\*[1]/gmd:explanation" /> </sch:pattern>  <!-- Test that an element has a value or has a valid nilReason value --> <sch:pattern abstract="true" id="TypeNillablePattern">  <sch:rule context="$context">  <sch:assert test="  (string-length(normalize-space(.)) &gt; 0) or  (@gco:nilReason = 'inapplicable' or  @gco:nilReason = 'missing' or  @gco:nilReason = 'template' or  @gco:nilReason = 'unknown' or  @gco:nilReason = 'withheld' or  starts-with(@gco:nilReason, 'other:'))">  AP-1a: The <sch:name/> element shall have a value or a valid Nil Reason.  </sch:assert>  </sch:rule> </sch:pattern> |

## gmd:DQ\_ConformanceResult is required

### Error message

1. There must be at least one gmd:DQ\_ConformanceResult

### Context

1. DQ\_DataQuality > DQ\_Element.result > DQ\_ConformanceResult

### Cause

1. The metadata must have a least one DQ\_ConformanceResult, but none was found in the record.

### Example – fail

<gmd:dataQualityInfo>  
 <gmd:DQ\_DataQuality>  
 <gmd:scope>  
 <gmd:DQ\_Scope>  
 <gmd:level>  
 <gmd:MD\_ScopeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/ML\_gmxCodelists.xml#MD\_ScopeCode"  
codeListValue="dataset" codeSpace="ISOTC211/19115">**dataset**</gmd:MD\_ScopeCode>  
 </gmd:level>  
 <gmd:levelDescription>  
 <gmd:MD\_ScopeDescription>  
 <gmd:other>  
 <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">NonGeographicDataset</gco:CharacterString>  
 </gmd:other>  
 </gmd:MD\_ScopeDescription>  
 </gmd:levelDescription>  
 </gmd:DQ\_Scope>  
 </gmd:scope>

**<!-- There should be a gmd:report here) -->**  
 <gmd:lineage>  
 <gmd:LI\_Lineage>  
 <gmd:statement>  
 <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">This data extract was taken from the Rural Payments Agency Operations team source of reports, the data has been formated to ensure it complies with Data Protection Act and publishing guidelines.</gco:CharacterString>  
 </gmd:statement>  
 </gmd:LI\_Lineage>  
 </gmd:lineage>  
 </gmd:DQ\_DataQuality>  
 </gmd:dataQualityInfo>

### Example – pass

…

</gmd:scope>  
<gmd:report>  
 <gmd:DQ\_DomainConsistency>  
 <gmd:result>  
 <gmd:DQ\_ConformanceResult>  
 <gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
 <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">

Commission Regulation (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services

</gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date xmlns:gco="http://www.isotc211.org/2005/gco">2010-12-08

</gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode codeListValue="publication" codeList="http://aws2.caris.com/sfs/schemas/iso/19139/20070417/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode">

publication

</gmd:CI\_DateTypeCode>  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
 </gmd:specification>  
 <gmd:explanation>  
 <gco:CharacterString

xmlns:gco="http://www.isotc211.org/2005/gco">

See the referenced specification

</gco:CharacterString>  
 </gmd:explanation>  
 <gmd:pass>  
 <gco:Boolean xmlns:gco="http://www.isotc211.org/2005/gco">

false

</gco:Boolean>  
 </gmd:pass>  
 </gmd:DQ\_ConformanceResult>  
 </gmd:result>  
 </gmd:DQ\_DomainConsistency>  
</gmd:report>  
<gmd:lineage>

…

### Schematron rule

<sch:pattern fpi="Gemini2-mi41-confResult">  
 <sch:rule context="//gmd:MD\_Metadata[1]">  
 <sch:assert test="count(gmd:dataQualityInfo/gmd:DQ\_DataQuality/gmd:report/gmd:DQ\_DomainConsistency/gmd:result/gmd:DQ\_ConformanceResult) &gt; 0">  
 MI-41a: There must be at least one gmd:DQ\_ConformanceResult  
 </sch:assert>  
 </sch:rule>  
</sch:pattern>

## Pass needs valid value in conformity statement to 1089/2010

### Error message

1. The pass value shall be true, false, or have a nil reason of 'unknown', in a conformance statement for *Commission Regulation (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services*

### Context

1. DQ\_DataQuality > DQ\_Element.result > DQ\_ConformanceResult

### Cause

1. The pass value is not set to true or false, or has a nil reason that is not 'unknown'.

### Example – fail

<gmd:DQ\_ConformanceResult>  
 <gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
 <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  
 Commission Regulation (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services  
 </gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date xmlns:gco="http://www.isotc211.org/2005/gco">  
 2010-12-08  
 </gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode codeListValue="publication"  
 codeList="http://aws2.caris.com/sfs/schemas/iso/19139/20070417/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode">  
 publication  
 </gmd:CI\_DateTypeCode>  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
 </gmd:specification>  
 <gmd:explanation>  
 <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  
 See the referenced specification  
 </gco:CharacterString>  
 </gmd:explanation>  
 <gmd:pass

xmlns:gco="http://www.isotc211.org/2005/gco"

**gco:nilReason="withheld"** />  
</gmd:DQ\_ConformanceResult>

### Example – pass

<gmd:DQ\_ConformanceResult>  
 <gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
 <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  
 Commission Regulation (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services  
 </gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date xmlns:gco="http://www.isotc211.org/2005/gco">  
 2010-12-08  
 </gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode codeListValue="publication"  
 codeList="http://aws2.caris.com/sfs/schemas/iso/19139/20070417/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode">  
 publication  
 </gmd:CI\_DateTypeCode>  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
 </gmd:specification>  
 <gmd:explanation>  
 <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  
 See the referenced specification  
 </gco:CharacterString>  
 </gmd:explanation>  
 <gmd:pass

xmlns:gco="http://www.isotc211.org/2005/gco"

**gco:nilReason="unknown"** />  
</gmd:DQ\_ConformanceResult>

### Schematron rule

<!-- We need tests that WHEN we have INSPIRE conformance sections they have correct content -->  
<sch:pattern fpi="Gemini2-mi41-inspire1089">  
 <sch:rule context="//gmd:MD\_Metadata[1]/gmd:dataQualityInfo/gmd:DQ\_DataQuality/gmd:report/gmd:DQ\_DomainConsistency/gmd:result/gmd:DQ\_ConformanceResult/gmd:specification/gmd:CI\_Citation/gmd:title/\*[1][text() = 'Commission Regulation (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services']">  
 <sch:let name="localPassPath" value="parent::gmd:title/parent::gmd:CI\_Citation/parent::gmd:specification/following-sibling::gmd:pass"/>  
 <sch:let name="localDatePath"

value="parent::gmd:title/following-sibling::gmd:date/gmd:CI\_Date"/>  
 <sch:assert test="$localPassPath/gco:Boolean or

$localPassPath/@gco:nilReason = 'unknown'">

MI-41b: The pass value shall be true, false, or have a nil reason of 'unknown', in a conformance statement for <sch:value-of select="$inspire1089"/>  
 </sch:assert>

…  
 </sch:rule>  
</sch:pattern>

## dateTypeCode shall be publication in conformity statement to 1089/2010

### Error message

1. The dateTypeCode reported shall be publication, in a conformance statement for *Commission Regulation (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services*

### Context

1. DQ\_DataQuality > DQ\_Element.result > DQ\_ConformanceResult

### Cause

1. The metadata has a conformance statement to 1089/2010 but the date type reported is incorrect.

### Example – fail

<gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
 <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  
 Commission Regulation (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services  
 </gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date xmlns:gco="http://www.isotc211.org/2005/gco">  
 2010-12-08  
 </gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode **codeListValue="revsion"**  
 codeList="http://aws2.caris.com/sfs/schemas/iso/19139/20070417/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode" />  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
</gmd:specification>

### Example – pass

<gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
 <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  
 Commission Regulation (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services  
 </gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date xmlns:gco="http://www.isotc211.org/2005/gco">  
 2010-12-08  
 </gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode **codeListValue="publication"**  
 codeList="http://aws2.caris.com/sfs/schemas/iso/19139/20070417/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode" />  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
</gmd:specification>

### Schematron rule

<!-- We need tests that WHEN we have INSPIRE conformance sections they have correct content -->  
<sch:pattern fpi="Gemini2-mi41-inspire1089">  
 <sch:rule context="//gmd:MD\_Metadata[1]/gmd:dataQualityInfo/gmd:DQ\_DataQuality/gmd:report/gmd:DQ\_DomainConsistency/gmd:result/gmd:DQ\_ConformanceResult/gmd:specification/gmd:CI\_Citation/gmd:title/\*[1][text() = 'Commission Regulation (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services']">  
 <sch:let name="localPassPath" value="parent::gmd:title/parent::gmd:CI\_Citation/parent::gmd:specification/following-sibling::gmd:pass"/>  
 <sch:let name="localDatePath"

value="parent::gmd:title/following-sibling::gmd:date/gmd:CI\_Date"/>  
 <sch:assert test="$localDatePath/gmd:dateType/gmd:CI\_DateTypeCode[@codeListValue = 'publication']">

MI-41d: The dateTypeCode reported shall be publication, in a conformance statement for <sch:value-of select="$inspire1089"/>  
 </sch:assert>  
 </sch:rule>  
</sch:pattern>

## date shall be 2010-12-08 in conformity statement to 1089/2010

### Error message

1. The date reported shall be 2010-12-08 (date of publication), in a conformance statement for *Commission Regulation (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services*

### Context

1. DQ\_DataQuality > DQ\_Element.result > DQ\_ConformanceResult

### Cause

1. The metadata has a conformance statement to 1089/2010 but the date given is not the date of publication.

### Example – fail

<gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
 <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  
 Commission Regulation (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services  
 </gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date xmlns:gco="http://www.isotc211.org/2005/gco">  
 2010  
 </gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode codeListValue="publication"  
 codeList="http://aws2.caris.com/sfs/schemas/iso/19139/20070417/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode" />  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
</gmd:specification>

### Example – pass

<gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
 <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  
 Commission Regulation (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services  
 </gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date xmlns:gco="http://www.isotc211.org/2005/gco">  
 2010-12-08  
 </gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode codeListValue="publication"  
 codeList="http://aws2.caris.com/sfs/schemas/iso/19139/20070417/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode" />  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
</gmd:specification>

### Schematron rule

<!-- We need tests that WHEN we have INSPIRE conformance sections they have correct content -->  
<sch:pattern fpi="Gemini2-mi41-inspire1089">  
 <sch:rule context="//gmd:MD\_Metadata[1]/gmd:dataQualityInfo/gmd:DQ\_DataQuality/gmd:report/gmd:DQ\_DomainConsistency/gmd:result/gmd:DQ\_ConformanceResult/gmd:specification/gmd:CI\_Citation/gmd:title/\*[1][text() = 'Commission Regulation (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services']">  
 <sch:let name="localPassPath" value="parent::gmd:title/parent::gmd:CI\_Citation/parent::gmd:specification/following-sibling::gmd:pass"/>  
 <sch:let name="localDatePath"

value="parent::gmd:title/following-sibling::gmd:date/gmd:CI\_Date"/>  
…  
 <!-- Other dates (creation 2010-11-23, revision 2013-12-30)

ref: http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:02010R1089-20131230-->  
 <!-- Publication date ref: https://inspire.ec.europa.eu/inspire-legislation/26-->  
 <sch:assert test="$localDatePath/gmd:date/gco:Date[text() = '2010-12-08']">

MI-41c: The date reported shall be 2010-12-08 (date of publication), in a conformance statement for <sch:value-of select="$inspire1089"/>  
 </sch:assert>  
…  
 </sch:rule>  
</sch:pattern>

## date shall be 2010-12-08 in conformity statement to 1089/2010 (alt.)

### Error message

1. The date reported shall be 2010-12-08 (date of publication), in a conformance statement for *Commission Regulation (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial datasets and services*.

### Context

1. DQ\_DataQuality > DQ\_Element.result > DQ\_ConformanceResult

### Cause

1. The metadata has a conformance statement to 1089/2010 but the date given is not the date of publication

### Example – fail

<gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
 <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  
 COMMISSION REGULATION (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services  
 </gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date xmlns:gco="http://www.isotc211.org/2005/gco">  
 2010  
 </gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode codeListValue="publication"  
 codeList="http://aws2.caris.com/sfs/schemas/iso/19139/20070417/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode" />  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
</gmd:specification>

### Example – pass

<gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
 <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  
 COMMISSION REGULATION (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services  
 </gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date xmlns:gco="http://www.isotc211.org/2005/gco">  
 2010-12-08  
 </gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode codeListValue="publication"  
 codeList="http://aws2.caris.com/sfs/schemas/iso/19139/20070417/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode" />  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
</gmd:specification>

### Schematron rule

<sch:pattern fpi="Gemini2-mi41-inspire1089x">  
 <sch:p>This test allows for the title to start with `COMMISSION REGULATION` but ss. it should be 'Commission Regulation'</sch:p>  
 <sch:rule context="//gmd:MD\_Metadata[1]/gmd:dataQualityInfo/gmd:DQ\_DataQuality/gmd:report/gmd:DQ\_DomainConsistency/gmd:result/gmd:DQ\_ConformanceResult/gmd:specification/gmd:CI\_Citation/gmd:title/\*[1][text() = 'COMMISSION REGULATION (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services']">  
 <sch:let name="localPassPath" value="parent::gmd:title/parent::gmd:CI\_Citation/parent::gmd:specification/following-sibling::gmd:pass"/>  
 <sch:let name="localDatePath"

value="parent::gmd:title/following-sibling::gmd:date/gmd:CI\_Date"/>  
…  
 <!-- Other dates (creation 2010-11-23, revision 2013-12-30)

ref: http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:02010R1089-20131230-->  
 <!-- Publication date ref: https://inspire.ec.europa.eu/inspire-legislation/26-->  
 <sch:assert test="$localDatePath/gmd:date/gco:Date[text() = '2010-12-08']">

MI-41f: The date reported shall be 2010-12-08 (date of publication), in a conformance statement for <sch:value-of select="$inspire1089"/>  
 </sch:assert>  
…  
 </sch:rule>  
</sch:pattern>

## dateTypeCode shall be publication in conformity statement to 1089/2010 (alt.)

### Error message

1. The DateTypeCode reported shall be publication, in a conformance statement for *Commission Regulation (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial datasets and services*

### Context

1. DQ\_DataQuality > DQ\_Element.result > DQ\_ConformanceResult

### Cause

1. The metadata has a conformance statement to 1089/2010 but the date type reported is incorrect

### Example – fail

<gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
 <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  
 COMMISSION REGULATION (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services  
 </gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date xmlns:gco="http://www.isotc211.org/2005/gco">  
 2010-12-08  
 </gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode **codeListValue="revsion"**  
 codeList="http://aws2.caris.com/sfs/schemas/iso/19139/20070417/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode" />  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
</gmd:specification>

### Example – pass

<gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
 <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  
 COMMISSION REGULATION (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services  
 </gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date xmlns:gco="http://www.isotc211.org/2005/gco">  
 2010-12-08  
 </gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode **codeListValue="publication"**  
 codeList="http://aws2.caris.com/sfs/schemas/iso/19139/20070417/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode" />  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
</gmd:specification>

### Schematron rule

<sch:pattern fpi="Gemini2-mi41-inspire1089x">  
 <sch:p>This test allows for the title to start with `COMMISSION REGULATION` but ss. it should be 'Commission Regulation'</sch:p>  
 <sch:rule context="//gmd:MD\_Metadata[1]/gmd:dataQualityInfo/gmd:DQ\_DataQuality/gmd:report/gmd:DQ\_DomainConsistency/gmd:result/gmd:DQ\_ConformanceResult/gmd:specification/gmd:CI\_Citation/gmd:title/\*[1][text() = 'COMMISSION REGULATION (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services']">  
 <sch:let name="localPassPath" value="parent::gmd:title/parent::gmd:CI\_Citation/parent::gmd:specification/following-sibling::gmd:pass"/>  
 <sch:let name="localDatePath"

value="parent::gmd:title/following-sibling::gmd:date/gmd:CI\_Date"/>  
…  
 <sch:assert test="$localDatePath/gmd:dateType/gmd:CI\_DateTypeCode[@codeListValue = 'publication']">

MI-41g: The DateTypeCode reported shall be publication, in a conformance statement for <sch:value-of select="$inspire1089"/>  
 </sch:assert>  
 </sch:rule>  
</sch:pattern>

## Pass has valid value in conformity statement to 1089/2010 (alt.)

### Error message

1. The pass value shall be true, false, or have a nil reason of 'unknown', in a conformance statement for *Commission Regulation (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial datasets and services*

### Context

1. DQ\_DataQuality > DQ\_Element.result > DQ\_ConformanceResult

### Cause

1. The pass value is not set to true or false, or has a nil reason that is not 'unknown'.

### Example – fail

<gmd:DQ\_ConformanceResult>  
 <gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
 <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  
 COMMISSION REGULATION (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services  
 </gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date xmlns:gco="http://www.isotc211.org/2005/gco">  
 2010-12-08  
 </gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode codeListValue="publication"  
 codeList="http://aws2.caris.com/sfs/schemas/iso/19139/20070417/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode">  
 publication  
 </gmd:CI\_DateTypeCode>  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
 </gmd:specification>  
 <gmd:explanation>  
 <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  
 See the referenced specification  
 </gco:CharacterString>  
 </gmd:explanation>  
 <gmd:pass

xmlns:gco="http://www.isotc211.org/2005/gco"

**gco:nilReason="witheld"** />  
</gmd:DQ\_ConformanceResult>

### Example – pass

<gmd:DQ\_ConformanceResult>  
 <gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
 <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  
 COMMISSION REGULATION (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services  
 </gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date xmlns:gco="http://www.isotc211.org/2005/gco">  
 2010-12-08  
 </gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode codeListValue="publication"  
 codeList="http://aws2.caris.com/sfs/schemas/iso/19139/20070417/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode">  
 publication  
 </gmd:CI\_DateTypeCode>  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
 </gmd:specification>  
 <gmd:explanation>  
 <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  
 See the referenced specification  
 </gco:CharacterString>  
 </gmd:explanation>  
 <gmd:pass

xmlns:gco="http://www.isotc211.org/2005/gco"

**gco:nilReason="unknown"** />  
</gmd:DQ\_ConformanceResult>

### Schematron rule

<sch:pattern fpi="Gemini2-mi41-inspire1089x">  
 <sch:p>This test allows for the title to start with `COMMISSION REGULATION` but ss. it should be 'Commission Regulation'</sch:p>  
 <sch:rule context="//gmd:MD\_Metadata[1]/gmd:dataQualityInfo/gmd:DQ\_DataQuality/gmd:report/gmd:DQ\_DomainConsistency/gmd:result/gmd:DQ\_ConformanceResult/gmd:specification/gmd:CI\_Citation/gmd:title/\*[1][text() = 'COMMISSION REGULATION (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services']">  
 <sch:let name="localPassPath" value="parent::gmd:title/parent::gmd:CI\_Citation/parent::gmd:specification/following-sibling::gmd:pass"/>  
 <sch:let name="localDatePath"

value="parent::gmd:title/following-sibling::gmd:date/gmd:CI\_Date"/>  
 <sch:assert test="$localPassPath/gco:Boolean or $localPassPath/@gco:nilReason = 'unknown'">

MI-41e: The pass value shall be true, false, or have a nil reason of 'unknown', in a conformance statement for <sch:value-of select="$inspire1089"/>  
 </sch:assert>  
…  
 </sch:rule>  
</sch:pattern>

## Pass requires valid value in conformity statement to 976/2009

### Error message

1. The pass value shall be true, false, or have a nil reason of 'unknown', in a conformance statement for *Commission Regulation (EC) No 976/2009 of 19 October 2009 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards the Network Services*

### Context

1. DQ\_DataQuality > DQ\_Element.result > DQ\_ConformanceResult

### Cause

1. The pass value is not set to true or false, or has a nil reason that is not 'unknown'

### Example – fail

<gmd:DQ\_ConformanceResult>  
 <gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
 <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  
 Commission Regulation (EC) No 976/2009 of 19 October 2009 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards the Network Services  
 </gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date xmlns:gco="http://www.isotc211.org/2005/gco">2010-12</gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode codeListValue="creation"   
 codeList="http://aws2.caris.com/sfs/schemas/iso/19139/20070417/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode">  
 publication  
 </gmd:CI\_DateTypeCode>  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
 </gmd:specification>  
 <gmd:explanation>  
 <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  
 See the referenced specification  
 </gco:CharacterString>  
 </gmd:explanation>  
 **<gmd:pass xmlns:gco="http://www.isotc211.org/2005/gco" gco:nilReason="inapplicable">  
 </gmd:pass>**  
</gmd:DQ\_ConformanceResult>

### Example – pass

<gmd:DQ\_ConformanceResult>  
 <gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
 <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  
 Commission Regulation (EC) No 976/2009 of 19 October 2009 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards the Network Services  
 </gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date xmlns:gco="http://www.isotc211.org/2005/gco">

2010-12-08

</gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode **codeListValue="**publication" codeList="http://aws2.caris.com/sfs/schemas/iso/19139/20070417/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode">  
 publication  
 </gmd:CI\_DateTypeCode>  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
 </gmd:specification>  
 <gmd:explanation>  
 <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  
 See the referenced specification  
 </gco:CharacterString>  
 </gmd:explanation>  
 **<gmd:pass>  
 <Boolean xmlns="http://www.isotc211.org/2005/gco">false</Boolean>  
 </gmd:pass>**  
</gmd:DQ\_ConformanceResult>

### Schematron rule

<sch:pattern fpi="Gemini2-mi41-inspire976">  
 <sch:rule context="//gmd:MD\_Metadata[1]/gmd:dataQualityInfo/gmd:DQ\_DataQuality/gmd:report/gmd:DQ\_DomainConsistency/gmd:result/gmd:DQ\_ConformanceResult/gmd:specification/gmd:CI\_Citation/gmd:title/\*[1][text() = 'Commission Regulation (EC) No 976/2009 of 19 October 2009 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards the Network Services']">  
 <sch:let name="localPassPath" value="parent::gmd:title/parent::gmd:CI\_Citation/parent::gmd:specification/following-sibling::gmd:pass"/>  
 <sch:let name="localDatePath" value="parent::gmd:title/following-sibling::gmd:date/gmd:CI\_Date"/>  
 <sch:assert test="$localPassPath/gco:Boolean or $localPassPath/@gco:nilReason = 'unknown'">  
 MI-41h: The pass value shall be true, false, or have a nil reason of

'unknown', in a conformance statement for

<sch:value-of select="$inspire976"/>  
 </sch:assert>  
…

</sch:rule>  
</sch:pattern>

## Date shall be 2010-12-08 in conformity statement to 976/2009

### Error message

1. The date reported shall be 2010-12-08 (date of publication), in a conformance statement for *Commission Regulation (EC) No 976/2009 of 19 October 2009 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards the Network Services*

### Context

1. DQ\_DataQuality > DQ\_Element.result > DQ\_ConformanceResult

### Cause

1. The metadata has a conformance statement to 976/2009 but the date given is not the date of publication.

### Example – fail

<gmd:DQ\_ConformanceResult>  
 <gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
 <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  
 Commission Regulation (EC) No 976/2009 of 19 October 2009 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards the Network Services  
 </gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 **<gco:Date xmlns:gco="http://www.isotc211.org/2005/gco">**

**2009-10-19**

**</gco:Date>**  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode codeListValue="creation"   
 codeList="http://aws2.caris.com/sfs/schemas/iso/19139/20070417/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode">  
 creation  
 </gmd:CI\_DateTypeCode>  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
 </gmd:specification>  
 <gmd:explanation>  
 <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  
 See the referenced specification  
 </gco:CharacterString>  
 </gmd:explanation>  
 <gmd:pass xmlns:gco="http://www.isotc211.org/2005/gco" gco:nilReason="inapplicable">  
 </gmd:pass>  
</gmd:DQ\_ConformanceResult>

### Example – pass

<gmd:DQ\_ConformanceResult>  
 <gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
 <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  
 Commission Regulation (EC) No 976/2009 of 19 October 2009 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards the Network Services  
 </gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 **<gco:Date xmlns:gco="http://www.isotc211.org/2005/gco">**

**2010-12-08**

**</gco:Date>**  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode **codeListValue="**publication" codeList="http://aws2.caris.com/sfs/schemas/iso/19139/20070417/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode">  
 publication  
 </gmd:CI\_DateTypeCode>  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
 </gmd:specification>  
 <gmd:explanation>  
 <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  
 See the referenced specification  
 </gco:CharacterString>  
 </gmd:explanation>  
 <gmd:pass>  
 <Boolean xmlns="http://www.isotc211.org/2005/gco">false</Boolean>  
 </gmd:pass>  
</gmd:DQ\_ConformanceResult>

### Schematron rule

<sch:pattern fpi="Gemini2-mi41-inspire976">  
 <sch:rule context="//gmd:MD\_Metadata[1]/gmd:dataQualityInfo/gmd:DQ\_DataQuality/gmd:report/gmd:DQ\_DomainConsistency/gmd:result/gmd:DQ\_ConformanceResult/gmd:specification/gmd:CI\_Citation/gmd:title/\*[1][text() = 'Commission Regulation (EC) No 976/2009 of 19 October 2009 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards the Network Services']">  
 <sch:let name="localPassPath" value="parent::gmd:title/parent::gmd:CI\_Citation/parent::gmd:specification/following-sibling::gmd:pass"/>  
 <sch:let name="localDatePath" value="parent::gmd:title/following-sibling::gmd:date/gmd:CI\_Date"/>

…  
<!-- Other dates (creation 2009-10-19, revision 2010-12-28) ref: http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:02009R0976-20101228 -->  
<!-- Publication date ref: https://inspire.ec.europa.eu/inspire-legislation/26 -->  
 <sch:assert test="$localDatePath/gmd:date/gco:Date[text() = '2010-12-08']">

MI-41i: The date reported shall be 2010-12-08 (date of publication), in a

conformance statement for <sch:value-of select="$inspire976"/>  
 </sch:assert>  
…  
 </sch:rule>  
</sch:pattern>

## dateTypeCode shall be publication in conformity statement to 976/2009

### Error message

1. The dateTypeCode reported shall be publication, in a conformance statement *for Commission Regulation (EC) No 976/2009 of 19 October 2009 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards the Network Services*

### Context

1. DQ\_DataQuality > DQ\_Element.result > DQ\_ConformanceResult

### Cause

1. The metadata has a conformance statement to 976/2009 but the date type reported is incorrect. A publication date must be reported

### Example – fail

<gmd:DQ\_ConformanceResult>  
 <gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
 <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  
 Commission Regulation (EC) No 976/2009 of 19 October 2009 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards the Network Services  
 </gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date xmlns:gco="http://www.isotc211.org/2005/gco">

2009-10-19

</gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode **codeListValue="creation"** codeList="http://aws2.caris.com/sfs/schemas/iso/19139/20070417/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode">  
 creation  
 </gmd:CI\_DateTypeCode>  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
 </gmd:specification>  
 <gmd:explanation>  
 <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  
 See the referenced specification  
 </gco:CharacterString>  
 </gmd:explanation>  
 <gmd:pass xmlns:gco="http://www.isotc211.org/2005/gco" gco:nilReason="inapplicable">  
 </gmd:pass>  
</gmd:DQ\_ConformanceResult>

### Example – pass

<gmd:DQ\_ConformanceResult>  
 <gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
 <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  
 Commission Regulation (EC) No 976/2009 of 19 October 2009 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards the Network Services  
 </gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date xmlns:gco="http://www.isotc211.org/2005/gco">

2010-12-08

</gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode **codeListValue="publication"** codeList="http://aws2.caris.com/sfs/schemas/iso/19139/20070417/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode">  
 publication  
 </gmd:CI\_DateTypeCode>  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
 </gmd:specification>  
 <gmd:explanation>  
 <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  
 See the referenced specification  
 </gco:CharacterString>  
 </gmd:explanation>  
 <gmd:pass>  
 <Boolean xmlns="http://www.isotc211.org/2005/gco">false</Boolean>  
 </gmd:pass>  
</gmd:DQ\_ConformanceResult>

### Schematron rule

<sch:pattern fpi="Gemini2-mi41-inspire976">  
 <sch:rule context="//gmd:MD\_Metadata[1]/gmd:dataQualityInfo/gmd:DQ\_DataQuality/gmd:report/gmd:DQ\_DomainConsistency/gmd:result/gmd:DQ\_ConformanceResult/gmd:specification/gmd:CI\_Citation/gmd:title/\*[1][text() = 'Commission Regulation (EC) No 976/2009 of 19 October 2009 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards the Network Services']">  
 <sch:let name="localPassPath" value="parent::gmd:title/parent::gmd:CI\_Citation/parent::gmd:specification/following-sibling::gmd:pass"/>  
 <sch:let name="localDatePath" value="parent::gmd:title/following-sibling::gmd:date/gmd:CI\_Date"/>  
 <sch:assert test="$localPassPath/gco:Boolean or $localPassPath/@gco:nilReason = 'unknown'">  
…

MI-41j: The dateTypeCode reported shall be publication, in a conformance

statement for <sch:value-of select="$inspire976"/>  
 </sch:assert>  
 </sch:rule>  
</sch:pattern>

## Only one conformity statement to 1089/2010 (Service)

### Error message

1. A service record should have no more than one Conformance report to [1089/2010]

### Context

1. DQ\_DataQuality > DQ\_Element.result > DQ\_ConformanceResult

### Cause

1. The metadata record contains more than one conformity statement to 1089/2010, but only one statement is allowed

### Example – fail

</gmd:scope>  
<gmd:report>  
 <gmd:DQ\_DomainConsistency>  
 <gmd:result>  
 <gmd:DQ\_ConformanceResult>  
 <gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
 <gco:CharacterString>  
 Commission Regulation (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services  
 </gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date>2010-12-08</gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode codeListValue="publication"   
 codeList="http://aws2.caris.com/sfs/schemas/iso/19139/20070417/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode" />  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
 </gmd:specification>  
 <gmd:explanation>  
 <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  
 See the referenced specification  
 </gco:CharacterString>  
 </gmd:explanation>  
 <gmd:pass>  
 <Boolean xmlns="http://www.isotc211.org/2005/gco">false</Boolean>  
 </gmd:pass>  
 </gmd:DQ\_ConformanceResult>  
 </gmd:result>  
 </gmd:DQ\_DomainConsistency>  
</gmd:report>  
<gmd:report>  
 <gmd:DQ\_DomainConsistency>  
 <gmd:result>  
 <gmd:DQ\_ConformanceResult>  
 <gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
 <gco:CharacterString>  
 Commission Regulation (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services  
 </gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date>2010-12-08</gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode codeListValue="publication"   
 codeList="http://aws2.caris.com/sfs/schemas/iso/19139/20070417/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode" />  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
 </gmd:specification>  
 <gmd:explanation gco:nilReason="withheld" />  
 <gmd:pass gco:nilReason="unknown" />  
 </gmd:DQ\_ConformanceResult>  
 </gmd:result>  
 </gmd:DQ\_DomainConsistency>  
</gmd:report>

<gmd:lineage>

### Example – pass

</gmd:scope>  
<gmd:report>  
 <gmd:DQ\_DomainConsistency>  
 <gmd:result>  
 <gmd:DQ\_ConformanceResult>  
 <gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
 <gco:CharacterString>  
 Commission Regulation (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services  
 </gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date>2010-12-08</gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode codeListValue="publication"   
 codeList="http://aws2.caris.com/sfs/schemas/iso/19139/20070417/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode" />  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
 </gmd:specification>  
 <gmd:explanation gco:nilReason="withheld" />  
 <gmd:pass gco:nilReason="unknown" />  
 </gmd:DQ\_ConformanceResult>  
 </gmd:result>  
 </gmd:DQ\_DomainConsistency>  
</gmd:report>

<gmd:lineage>

### Schematron rule

<sch:pattern fpi="Gemini2-mi41-inspireConf-sv">  
 <sch:rule context="//gmd:MD\_Metadata[1]/gmd:dataQualityInfo/gmd:DQ\_DataQuality/gmd:scope/gmd:DQ\_Scope/gmd:level/gmd:MD\_ScopeCode[@codeListValue = 'service']">  
 <sch:let name="count1089" value="count(parent::gmd:level/parent::gmd:DQ\_Scope/parent::gmd:scope/following-sibling::gmd:report/gmd:DQ\_DomainConsistency/gmd:result/gmd:DQ\_ConformanceResult/gmd:specification/gmd:CI\_Citation/gmd:title/\*[1][text() = $inspire1089])"/>  
 <sch:let name="count1089x" value="count(parent::gmd:level/parent::gmd:DQ\_Scope/parent::gmd:scope/following-sibling::gmd:report/gmd:DQ\_DomainConsistency/gmd:result/gmd:DQ\_ConformanceResult/gmd:specification/gmd:CI\_Citation/gmd:title/\*[1][text() = $inspire1089x])"/>  
 <sch:let name="count976" value="count(parent::gmd:level/parent::gmd:DQ\_Scope/parent::gmd:scope/following-sibling::gmd:report/gmd:DQ\_DomainConsistency/gmd:result/gmd:DQ\_ConformanceResult/gmd:specification/gmd:CI\_Citation/gmd:title/\*[1][text() = $inspire976])"/>  
 <sch:assert test="$count1089 &lt;= 1">  
 M1-41k: A service record should have no more than one Conformance report to [1089/2010]  
 (counted <sch:value-of select="$count1089"/>)  
 </sch:assert>

…  
 </sch:rule>

</sch:pattern>

## Only one conformity statement to 1089/2010 (Service) alt.

### Error message

1. A service record should have no more than one Conformance report to [1089/2010]

### Context

1. DQ\_DataQuality > DQ\_Element.result > DQ\_ConformanceResult

### Cause

1. The metadata record contains more than one conformity statement to 1089/2010, but only one statement is allowed

### Example – fail

</gmd:scope>  
<gmd:report>  
 <gmd:DQ\_DomainConsistency>  
 <gmd:result>  
 <gmd:DQ\_ConformanceResult>  
 <gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
 <gco:CharacterString>  
 COMMISSION REGULATION (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services  
 </gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date>2010-12-08</gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode codeListValue="publication"  
codeList="http://aws2.caris.com/sfs/schemas/iso/19139/20070417/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode" />  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
 </gmd:specification>  
 <gmd:explanation>  
 <gco:CharacterString>  
 See the referenced specification  
 </gco:CharacterString>  
 </gmd:explanation>  
 <gmd:pass>  
 <Boolean>false</Boolean>  
 </gmd:pass>  
 </gmd:DQ\_ConformanceResult>  
 </gmd:result>  
 </gmd:DQ\_DomainConsistency>  
</gmd:report>  
<gmd:report>  
 <gmd:DQ\_DomainConsistency>  
 <gmd:result>  
 <gmd:DQ\_ConformanceResult>  
 <gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
 <gco:CharacterString>  
 COMMISSION REGULATION (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services  
 </gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date>2010-12-08</gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode codeListValue="publication"  
codeList="http://aws2.caris.com/sfs/schemas/iso/19139/20070417/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode" />  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
 </gmd:specification>  
 <gmd:explanation gco:nilReason="withheld" />  
 <gmd:pass gco:nilReason="unknown" />  
 </gmd:DQ\_ConformanceResult>  
 </gmd:result>  
 </gmd:DQ\_DomainConsistency>  
</gmd:report>

### Example – pass

</gmd:scope>  
<gmd:report>  
 <gmd:DQ\_DomainConsistency>  
 <gmd:result>  
 <gmd:DQ\_ConformanceResult>  
 <gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
 <gco:CharacterString>  
 COMMISSION REGULATION (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services  
 </gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date>2010-12-08</gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode codeListValue="publication"  
codeList="http://aws2.caris.com/sfs/schemas/iso/19139/20070417/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode" />  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
 </gmd:specification>  
 <gmd:explanation>  
 <gco:CharacterString>  
 See the referenced specification  
 </gco:CharacterString>  
 </gmd:explanation>  
 <gmd:pass>  
 <Boolean>false</Boolean>  
 </gmd:pass>  
 </gmd:DQ\_ConformanceResult>  
 </gmd:result>  
 </gmd:DQ\_DomainConsistency>  
</gmd:report>  
<gmd:report>  
 <gmd:DQ\_DomainConsistency>  
 <gmd:result>  
 <gmd:DQ\_ConformanceResult>  
 <gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
 <gco:CharacterString>  
 Commission Regulation (EC) No 976/2009 of 19 October 2009 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards the Network Services  
 </gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date>2010-12-08</gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode codeListValue="publication"  
codeList="http://aws2.caris.com/sfs/schemas/iso/19139/20070417/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode" />  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
 </gmd:specification>  
 <gmd:explanation gco:nilReason="withheld" />  
 <gmd:pass gco:nilReason="unknown" />  
 </gmd:DQ\_ConformanceResult>  
 </gmd:result>  
 </gmd:DQ\_DomainConsistency>  
</gmd:report>  
<gmd:lineage>

### Schematron rule

<sch:pattern fpi="Gemini2-mi41-inspireConf-sv">  
 <sch:rule context="//gmd:MD\_Metadata[1]/gmd:dataQualityInfo/gmd:DQ\_DataQuality/gmd:scope/gmd:DQ\_Scope/gmd:level/gmd:MD\_ScopeCode[@codeListValue = 'service']">  
 <sch:let name="count1089" value="count(parent::gmd:level/parent::gmd:DQ\_Scope/parent::gmd:scope/following-sibling::gmd:report/gmd:DQ\_DomainConsistency/gmd:result/gmd:DQ\_ConformanceResult/gmd:specification/gmd:CI\_Citation/gmd:title/\*[1][text() = $inspire1089])"/>  
 <sch:let name="count1089x" value="count(parent::gmd:level/parent::gmd:DQ\_Scope/parent::gmd:scope/following-sibling::gmd:report/gmd:DQ\_DomainConsistency/gmd:result/gmd:DQ\_ConformanceResult/gmd:specification/gmd:CI\_Citation/gmd:title/\*[1][text() = $inspire1089x])"/>  
 <sch:let name="count976" value="count(parent::gmd:level/parent::gmd:DQ\_Scope/parent::gmd:scope/following-sibling::gmd:report/gmd:DQ\_DomainConsistency/gmd:result/gmd:DQ\_ConformanceResult/gmd:specification/gmd:CI\_Citation/gmd:title/\*[1][text() = $inspire976])"/>  
…  
 <sch:assert test="$count1089x &lt;= 1">  
 M1-41l: A service record should have no more than one Conformance report to [1089/2010]  
 (counted <sch:value-of select="$count1089"/>)  
 </sch:assert>  
…  
 </sch:rule>

</sch:pattern>

## Only one conformity statement to 976/2009 (Service)

### Error message

1. A service record should have no more than one Conformance report to [976/2009]

### Context

1. DQ\_DataQuality > DQ\_Element.result > DQ\_ConformanceResult

### Cause

1. The metadata record contains more than one conformity statement to 976/2009, but only one statement is allowed

### Example – fail

</gmd:scope>

<gmd:report>  
 <gmd:DQ\_DomainConsistency>  
 <gmd:result>  
 <gmd:DQ\_ConformanceResult>  
 <gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
 <gco:CharacterString>  
 Commission Regulation (EC) No 976/2009 of 19 October 2009 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards the Network Services  
 </gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date>2010-12-08</gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode codeListValue="publication"  
codeList="http://aws2.caris.com/sfs/schemas/iso/19139/20070417/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode" />  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
 </gmd:specification>  
 <gmd:explanation>  
 <gco:CharacterString>  
 See the referenced specification  
 </gco:CharacterString>  
 </gmd:explanation>  
 <gmd:pass>  
 <Boolean>false</Boolean>  
 </gmd:pass>  
 </gmd:DQ\_ConformanceResult>  
 </gmd:result>  
 </gmd:DQ\_DomainConsistency>  
</gmd:report>  
<gmd:report>  
 <gmd:DQ\_DomainConsistency>  
 <gmd:result>  
 <gmd:DQ\_ConformanceResult>  
 <gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
 <gco:CharacterString>  
 Commission Regulation (EC) No 976/2009 of 19 October 2009 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards the Network Services  
 </gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date>2010-12-08</gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode codeListValue="publication"  
codeList="http://aws2.caris.com/sfs/schemas/iso/19139/20070417/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode" />  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
 </gmd:specification>  
 <gmd:explanation gco:nilReason="withheld" />  
 <gmd:pass gco:nilReason="unknown" />  
 </gmd:DQ\_ConformanceResult>  
 </gmd:result>  
 </gmd:DQ\_DomainConsistency>  
</gmd:report>

<gmd:lineage>

### Example – pass

</gmd:scope>  
<gmd:report>  
 <gmd:DQ\_DomainConsistency>  
 <gmd:result>  
 <gmd:DQ\_ConformanceResult>  
 <gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
 <gco:CharacterString>  
 Commission Regulation (EC) No 976/2009 of 19 October 2009 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards the Network Services  
 </gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date>2010-12-08</gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode codeListValue="publication"  
codeList="http://aws2.caris.com/sfs/schemas/iso/19139/20070417/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode" />  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
 </gmd:specification>  
 <gmd:explanation gco:nilReason="withheld" />  
 <gmd:pass gco:nilReason="unknown" />  
 </gmd:DQ\_ConformanceResult>  
 </gmd:result>  
 </gmd:DQ\_DomainConsistency>  
</gmd:report>

<gmd:lineage>

### Schematron rule

<sch:pattern fpi="Gemini2-mi41-inspireConf-sv">  
 <sch:rule context="//gmd:MD\_Metadata[1]/gmd:dataQualityInfo/gmd:DQ\_DataQuality/gmd:scope/gmd:DQ\_Scope/gmd:level/gmd:MD\_ScopeCode[@codeListValue = 'service']">  
 <sch:let name="count1089" value="count(parent::gmd:level/parent::gmd:DQ\_Scope/parent::gmd:scope/following-sibling::gmd:report/gmd:DQ\_DomainConsistency/gmd:result/gmd:DQ\_ConformanceResult/gmd:specification/gmd:CI\_Citation/gmd:title/\*[1][text() = $inspire1089])"/>  
 <sch:let name="count1089x" value="count(parent::gmd:level/parent::gmd:DQ\_Scope/parent::gmd:scope/following-sibling::gmd:report/gmd:DQ\_DomainConsistency/gmd:result/gmd:DQ\_ConformanceResult/gmd:specification/gmd:CI\_Citation/gmd:title/\*[1][text() = $inspire1089x])"/>  
 <sch:let name="count976" value="count(parent::gmd:level/parent::gmd:DQ\_Scope/parent::gmd:scope/following-sibling::gmd:report/gmd:DQ\_DomainConsistency/gmd:result/gmd:DQ\_ConformanceResult/gmd:specification/gmd:CI\_Citation/gmd:title/\*[1][text() = $inspire976])"/>  
…  
 <sch:assert test="$count976 &lt;= 1">  
 M1-41m: A service record should have no more than one Conformance report to

[976/2009] (counted <sch:value-of select="$count976"/>)  
 </sch:assert>  
…  
 </sch:rule>

</sch:pattern>

## Conformance report to [976/2009] or [1089/2010] is required (Service)

### Error message

1. A service record must have a Conformance report to [976/2009] or [1089/2010]

### Context

1. DQ\_DataQuality > DQ\_Element.result > DQ\_ConformanceResult

### Cause

1. A service requires a conformity report to either [976/2009] or [1089/2010] but neither report was found.

### Example – fail

<gmd:dataQualityInfo>  
 <gmd:DQ\_DataQuality>  
 <gmd:scope>  
 <gmd:DQ\_Scope>  
 <gmd:level>  
 <gmd:MD\_ScopeCode codeListValue="service"   
codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/codelist/gmxCodelists.xml#MD\_ScopeCode">  
 service  
 </gmd:MD\_ScopeCode>  
 </gmd:level>  
 <gmd:levelDescription>  
 <gmd:MD\_ScopeDescription>  
 <gmd:other>  
 <gco:CharacterString>  
 Feature access service  
 </gco:CharacterString>  
 </gmd:other>  
 </gmd:MD\_ScopeDescription>  
 </gmd:levelDescription>  
 </gmd:DQ\_Scope>  
 </gmd:scope>

**<!-- There should be a gmd:report here -->**  
 <!-- Lineage -->  
 <gmd:lineage>  
 <gmd:LI\_Lineage>  
 <gmd:statement>  
 <gco:CharacterString>  
 This dataset was created using the Natural Resource model which forms part of the MMO project 1040 Spatial Trends in Aquaculture Potential in the South and East Coast Inshore and Offshore Marine Plan Areas. The Natural Resource model is made up of three existing environmental datasets: bathymetry derived from the Department of Food and Rural Affairs (Defra) Digital Elevation Model (DEM), predicted seabed sediments and combined seabed energy, both from UKSeaMap 2010 (McBreen, et al., 2010). … which gives the features area specified in the features coordinate systems units.  
 Please note that there is much overlap in potential aquaculture areas. View each sub category independantly to gain a better understanding of its spatial area.</gco:CharacterString>  
 </gmd:statement>  
 </gmd:LI\_Lineage>  
 </gmd:lineage>  
 </gmd:DQ\_DataQuality>  
</gmd:dataQualityInfo>

### Example – pass

<gmd:dataQualityInfo>  
 <gmd:DQ\_DataQuality>  
 <gmd:scope>  
 <gmd:DQ\_Scope>  
 <gmd:level>  
 <gmd:MD\_ScopeCode codeListValue="service"  
 codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/codelist/gmxCodelists.xml#MD\_ScopeCode">

service

</gmd:MD\_ScopeCode>  
 </gmd:level>  
 <gmd:levelDescription>  
 <gmd:MD\_ScopeDescription>  
 <gmd:other>  
 <gco:CharacterString>service</gco:CharacterString>  
 </gmd:other>  
 </gmd:MD\_ScopeDescription>  
 </gmd:levelDescription>  
 </gmd:DQ\_Scope>  
 </gmd:scope>  
 <gmd:report>  
 <gmd:DQ\_DomainConsistency>  
 <gmd:result>  
 <gmd:DQ\_ConformanceResult>  
 <gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
 <gco:CharacterString>

Commission Regulation (EC) No 976/2009 of 19 October 2009 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards the Network Services

</gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date>2010-12-08</gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode codeListValue="publication"  
codeList="http://aws2.caris.com/sfs/schemas/iso/19139/20070417/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode" />  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
 </gmd:specification>  
 <gmd:explanation gco:nilReason="withheld"/>  
 <gmd:pass gco:nilReason="unknown"/>  
 </gmd:DQ\_ConformanceResult>  
 </gmd:result>  
 </gmd:DQ\_DomainConsistency>  
 </gmd:report>  
 <!-- Lineage -->  
 <gmd:lineage>  
 <gmd:LI\_Lineage>  
 <gmd:statement>  
 <gco:CharacterString>This dataset… </gco:CharacterString>  
 </gmd:statement>  
 </gmd:LI\_Lineage>  
 </gmd:lineage>  
 </gmd:DQ\_DataQuality>  
</gmd:dataQualityInfo>

### Schematron rule

<sch:pattern fpi="Gemini2-mi41-inspireConf-sv">  
 <sch:rule context="//gmd:MD\_Metadata[1]/gmd:dataQualityInfo/gmd:DQ\_DataQuality/gmd:scope/gmd:DQ\_Scope/gmd:level/gmd:MD\_ScopeCode[@codeListValue = 'service']">  
 <sch:let name="count1089" value="count(parent::gmd:level/parent::gmd:DQ\_Scope/parent::gmd:scope/following-sibling::gmd:report/gmd:DQ\_DomainConsistency/gmd:result/gmd:DQ\_ConformanceResult/gmd:specification/gmd:CI\_Citation/gmd:title/\*[1][text() = $inspire1089])"/>  
 <sch:let name="count1089x" value="count(parent::gmd:level/parent::gmd:DQ\_Scope/parent::gmd:scope/following-sibling::gmd:report/gmd:DQ\_DomainConsistency/gmd:result/gmd:DQ\_ConformanceResult/gmd:specification/gmd:CI\_Citation/gmd:title/\*[1][text() = $inspire1089x])"/>  
 <sch:let name="count976" value="count(parent::gmd:level/parent::gmd:DQ\_Scope/parent::gmd:scope/following-sibling::gmd:report/gmd:DQ\_DomainConsistency/gmd:result/gmd:DQ\_ConformanceResult/gmd:specification/gmd:CI\_Citation/gmd:title/\*[1][text() = $inspire976])"/>  
 …  
 <sch:report test="  
 not(parent::gmd:level/parent::gmd:DQ\_Scope/parent::gmd:scope/following-sibling::gmd:report/gmd:DQ\_DomainConsistency/gmd:result/gmd:DQ\_ConformanceResult/gmd:specification/gmd:CI\_Citation/gmd:title/\*[1][text() = $inspire1089]) and  
 not(parent::gmd:level/parent::gmd:DQ\_Scope/parent::gmd:scope/following-sibling::gmd:report/gmd:DQ\_DomainConsistency/gmd:result/gmd:DQ\_ConformanceResult/gmd:specification/gmd:CI\_Citation/gmd:title/\*[1][text() = $inspire1089x]) and  
 not(parent::gmd:level/parent::gmd:DQ\_Scope/parent::gmd:scope/following-sibling::gmd:report/gmd:DQ\_DomainConsistency/gmd:result/gmd:DQ\_ConformanceResult/gmd:specification/gmd:CI\_Citation/gmd:title/\*[1][text() = $inspire976])">  
 M1-41n: A service record must have a Conformance report to [976/2009] or [1089/2010]  
 </sch:report>  
 </sch:rule>

</sch:pattern>

## Conformance statement to 1089/2010 is required (Dataset/Series)

### Error message

1. Datasets and series must provide a conformance report to [1089/2010]. The INSPIRE rule tells us this must be the EXACT title of the regulation, which is *Commission Regulation (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services*

### Context

1. DQ\_DataQuality > DQ\_Element.result > DQ\_ConformanceResult

### Cause

1. No conformance statement to 1089/2010 could be found, but one is required

### Example – fail

<gmd:dataQualityInfo>  
 <gmd:DQ\_DataQuality>  
 <gmd:scope>  
 <gmd:DQ\_Scope>  
 <gmd:level>  
 <gmd:MD\_ScopeCode codeListValue="dataset"  
 codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#MD\_ScopeCode">  
 dataset  
 </gmd:MD\_ScopeCode>  
 </gmd:level>  
 </gmd:DQ\_Scope>  
 </gmd:scope>  
 <gmd:report>  
 <gmd:DQ\_DomainConsistency>  
 <gmd:result>  
 <gmd:DQ\_ConformanceResult>  
 <gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
 <gco:CharacterString>  
 D2.8.I.5 INSPIRE Data Specification on Addresses – Guidelines, publication, 2010-04-26  
 </gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date>  
 1995-01-01  
 </gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode codeListValue="publication" codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode">  
 publication  
 </gmd:CI\_DateTypeCode>  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
 </gmd:specification>  
 <gmd:explanation>  
 <gco:CharacterString>  
 Only Mandatory Elements Included  
 </gco:CharacterString>  
 </gmd:explanation>  
 <gmd:pass>  
 <gco:Boolean>  
 true  
 </gco:Boolean>  
 </gmd:pass>  
 </gmd:DQ\_ConformanceResult>  
 </gmd:result>  
 </gmd:DQ\_DomainConsistency>  
 </gmd:report>  
 <gmd:lineage>  
 <gmd:LI\_Lineage>  
 <gmd:statement>  
 <gco:CharacterString>  
 Captured and maintained to Local GIS data Conventions defined  
 </gco:CharacterString>  
 </gmd:statement>  
 </gmd:LI\_Lineage>  
 </gmd:lineage>  
 </gmd:DQ\_DataQuality>  
</gmd:dataQualityInfo>

### Example – pass

<gmd:dataQualityInfo>  
 <gmd:DQ\_DataQuality>  
 <gmd:scope>  
 <gmd:DQ\_Scope>  
 <gmd:level>  
 <gmd:MD\_ScopeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#MD\_ScopeCode"  
 codeListValue="dataset">dataset</gmd:MD\_ScopeCode>  
 </gmd:level>  
 </gmd:DQ\_Scope>  
 </gmd:scope>  
 <gmd:report>  
 <gmd:DQ\_DomainConsistency>  
 <gmd:result>  
 <gmd:DQ\_ConformanceResult>  
 <gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
 <gco:CharacterString>  
 Commission Regulation (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services  
 </gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date>  
 2010-12-08  
 </gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode codeListValue="publication"  
codeList="http://aws2.caris.com/sfs/schemas/iso/19139/20070417/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode" />  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
 </gmd:specification>  
 <gmd:explanation>  
 <gco:CharacterString>  
 See the referenced specification  
 </gco:CharacterString>  
 </gmd:explanation>  
 <gmd:pass

xmlns:gco="http://www.isotc211.org/2005/gco"

gco:nilReason="unknown" />  
 </gmd:DQ\_ConformanceResult>  
 </gmd:result>  
 </gmd:DQ\_DomainConsistency>  
 </gmd:report>  
 <gmd:report>  
 <gmd:DQ\_DomainConsistency>  
 <gmd:result>  
 <gmd:DQ\_ConformanceResult>  
 <gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
 <gco:CharacterString>  
D2.8.I.5 INSPIRE Data Specification on Addresses – Guidelines, publication, 2010-04-26  
 </gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date>  
 1995-01-01  
 </gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode codeListValue="publication"  
codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode">  
 publication  
 </gmd:CI\_DateTypeCode>  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
 </gmd:specification>  
 <gmd:explanation>  
 <gco:CharacterString>  
 Only Mandatory Elements Included  
 </gco:CharacterString>  
 </gmd:explanation>  
 <gmd:pass>  
 <gco:Boolean>true</gco:Boolean>  
 </gmd:pass>  
 </gmd:DQ\_ConformanceResult>  
 </gmd:result>  
 </gmd:DQ\_DomainConsistency>  
 </gmd:report>  
 <gmd:lineage>  
 <gmd:LI\_Lineage>  
 <gmd:statement>  
 <gco:CharacterString>  
 Captured and maintained to Local GIS data Conventions defined  
 </gco:CharacterString>  
 </gmd:statement>  
 </gmd:LI\_Lineage>  
 </gmd:lineage>  
 </gmd:DQ\_DataQuality>  
</gmd:dataQualityInfo>

### Schematron rule

<sch:pattern fpi="Gemini2-mi41-inspireConf-dss">  
 <sch:rule context=" //gmd:MD\_Metadata[1]/gmd:dataQualityInfo/gmd:DQ\_DataQuality/gmd:scope/gmd:DQ\_Scope/gmd:level/gmd:MD\_ScopeCode[@codeListValue = 'dataset']

| //gmd:MD\_Metadata[1]/gmd:dataQualityInfo/gmd:DQ\_DataQuality/gmd:scope/gmd:DQ\_Scope/gmd:level/gmd:MD\_ScopeCode[@codeListValue = 'series']">  
 <sch:assert test="count(parent::gmd:level/parent::gmd:DQ\_Scope/parent::gmd:scope/following-sibling::gmd:report/gmd:DQ\_DomainConsistency/gmd:result/gmd:DQ\_ConformanceResult/gmd:specification/gmd:CI\_Citation/gmd:title/\*[1][text() = $inspire1089]) = 1 or  
 count(parent::gmd:level/parent::gmd:DQ\_Scope/parent::gmd:scope/following-sibling::gmd:report/gmd:DQ\_DomainConsistency/gmd:result/gmd:DQ\_ConformanceResult/gmd:specification/gmd:CI\_Citation/gmd:title/\*[1][text() = $inspire1089x]) = 1">  
 MI-41o: Datasets and series must provide a conformance report to

[1089/2010].  
 The INSPIRE rule tells us this must be the EXACT title of the regulation,

which is: <sch:value-of select="$inspire1089"/>  
 </sch:assert>  
 </sch:rule>  
</sch:pattern>

# Specification

## Title not nillable

### Error message

1. The gmd:title element is not nillable and shall have a value.

### Context

1. MD\_Metadata.dataQualityInfo > DQ\_DataQuality.report > DQ\_DomainConsistency.result > DQ\_ConformanceResult.specification > CI\_Citation.title

### Cause

1. The element named gmd:title has been assigned a gco:nilReason attribute or the value of the element is an empty string.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:dataQualityInfo>  <gmd:DQ\_DataQuality>  ...  <gmd:report>  <gmd:DQ\_DomainConsistency>  ...  <gmd:result>  <gmd:DQ\_ConformanceResult>  <gmd:specification>  <gmd:CI\_Citation>  <gmd:title gco:nilReason="missing"/>  ...  </gmd:CI\_Citation>  </gmd:specification>  ...  </gmd:DQ\_ConformanceResult>  </gmd:result>  </gmd:DQ\_DomainConsistency>  </gmd:report>  ...  </gmd:DQ\_DataQuality>  </gmd:dataQualityInfo>  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:dataQualityInfo>  <gmd:DQ\_DataQuality>  ...  <gmd:report>  <gmd:DQ\_DomainConsistency>  ...  <gmd:result>  <gmd:DQ\_ConformanceResult>  <gmd:specification>  <gmd:CI\_Citation>  <gmd:title>  <gco:CharacterString>Conformity</gco:CharacterString>  </gmd:title>  ...  </gmd:CI\_Citation>  </gmd:specification>  ...  </gmd:DQ\_ConformanceResult>  </gmd:result>  </gmd:DQ\_DomainConsistency>  </gmd:report>  ...  </gmd:DQ\_DataQuality>  </gmd:dataQualityInfo>  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern fpi="Gemini2-mi42">  <sch:title>Specification</sch:title> </sch:pattern>  <sch:pattern is-a="TypeNotNillablePattern" id="Gemini2-mi42-Title-NotNillable">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:dataQualityInfo/\*[1]/gmd:report/\*[1]/gmd:result/\*[1]/gmd:specification/\*[1]/gmd:title" />  </sch:pattern>  <!-- Test that an element has a value - the value is not nillable --> <sch:pattern abstract="true" id="TypeNotNillablePattern">  <sch:rule context="$context">  <sch:assert test="string-length(.) &gt; 0 and count(./@gco:nilReason) = 0">  AP-2: The <sch:name/> element is not nillable and shall have a value.  </sch:assert>  </sch:rule> </sch:pattern> |

## Date is nillable

### Error message

1. The gmd:date element shall have a value or a valid nil reason.

### Context

1. MD\_Metadata.dataQualityInfo > DQ\_DataQuality.report > DQ\_DomainConsistency.result > DQ\_ConformanceResult.specification > CI\_Citation.date > CI\_Date.date

### Cause

1. The element named gmd:date has either no value or it has a gco:nilReason attribute with an invalid value. The value of the gco:nilReason attribute must be taken from a controlled list.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:dataQualityInfo>  <gmd:DQ\_DataQuality>  ...  <gmd:report>  <gmd:DQ\_DomainConsistency>  ...  <gmd:result>  <gmd:DQ\_ConformanceResult>  <gmd:specification>  <gmd:CI\_Citation>  ...  <gmd:date>  <gmd:CI\_Date>  <gmd:date/>  ...  </gmd:CI\_Date>  </gmd:date>  </gmd:CI\_Citation>  </gmd:specification>  ...  </gmd:DQ\_ConformanceResult>  </gmd:result>  </gmd:DQ\_DomainConsistency>  </gmd:report>  ...  </gmd:DQ\_DataQuality>  </gmd:dataQualityInfo>  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:dataQualityInfo>  <gmd:DQ\_DataQuality>  ...  <gmd:report>  <gmd:DQ\_DomainConsistency>  ...  <gmd:result>  <gmd:DQ\_ConformanceResult>  <gmd:specification>  <gmd:CI\_Citation>  ...  <gmd:date>  <gmd:CI\_Date>  <gmd:date gco:nilReason="unknown"/>  ...  </gmd:CI\_Date>  </gmd:date>  </gmd:CI\_Citation>  </gmd:specification>  ...  </gmd:DQ\_ConformanceResult>  </gmd:result>  </gmd:DQ\_DomainConsistency>  </gmd:report>  ...  </gmd:DQ\_DataQuality>  </gmd:dataQualityInfo>  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern is-a="TypeNillablePattern" id="Gemini2-mi42-Date-Nillable">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:dataQualityInfo/\*[1]/gmd:report/\*[1]/gmd:result/\*[1]/gmd:specification/\*[1]/gmd:date/\*[1]/gmd:date" /> </sch:pattern>  <!-- Test that an element has a value or has a valid nilReason value --> <sch:pattern abstract="true" id="TypeNillablePattern">  <sch:rule context="$context">  <sch:assert test="  (string-length(normalize-space(.)) &gt; 0) or  (@gco:nilReason = 'inapplicable' or  @gco:nilReason = 'missing' or  @gco:nilReason = 'template' or  @gco:nilReason = 'unknown' or  @gco:nilReason = 'withheld' or  starts-with(@gco:nilReason, 'other:'))">  AP-1a: The <sch:name/> element shall have a value or a valid Nil Reason.  </sch:assert>  </sch:rule>  </sch:pattern> |

## Date type code list

### Error message

1. The codeListValue attribute does not have a value.

### Context

1. MD\_Metadata.dataQualityInfo > DQ\_DataQuality.report > DQ\_DomainConsistency.result > DQ\_ConformanceResult.specification > CI\_Citation.date > CI\_Date.dateType

### Cause

1. This assertion fails if the attribute codeListValue of the element gmd:CI\_DateTypeCode does not have a value.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:dataQualityInfo>  <gmd:DQ\_DataQuality>  ...  <gmd:report>  <gmd:DQ\_DomainConsistency>  ...  <gmd:result>  <gmd:DQ\_ConformanceResult>  <gmd:specification>  <gmd:CI\_Citation>  ...  <gmd:date>  <gmd:CI\_Date>  ...  <gmd:dateType>  <gmd:CI\_DateTypeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode" **codeListValue=""**>creation</gmd:CI\_DateTypeCode>  </gmd:dateType>  </gmd:CI\_Date>  </gmd:date>  </gmd:CI\_Citation>  </gmd:specification>  ...  </gmd:DQ\_ConformanceResult>  </gmd:result>  </gmd:DQ\_DomainConsistency>  </gmd:report>  ...  </gmd:DQ\_DataQuality>  </gmd:dataQualityInfo>  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:dataQualityInfo>  <gmd:DQ\_DataQuality>  ...  <gmd:report>  <gmd:DQ\_DomainConsistency>  ...  <gmd:result>  <gmd:DQ\_ConformanceResult>  <gmd:specification>  <gmd:CI\_Citation>  ...  <gmd:date>  <gmd:CI\_Date>  ...  <gmd:dateType>  <gmd:CI\_DateTypeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode" **codeListValue="creation"**>creation</gmd:CI\_DateTypeCode>  </gmd:dateType>  </gmd:CI\_Date>  </gmd:date>  </gmd:CI\_Citation>  </gmd:specification>  ...  </gmd:DQ\_ConformanceResult>  </gmd:result>  </gmd:DQ\_DomainConsistency>  </gmd:report>  ...  </gmd:DQ\_DataQuality>  </gmd:dataQualityInfo>  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern is-a="IsoCodeListPattern" id="Gemini2-mi42-DateType-CodeList">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:dataQualityInfo/\*[1]/gmd:report/\*[1]/gmd:result/\*[1]/gmd:specification/\*[1]/gmd:date/\*[1]/gmd:date/\*[1]/gmd:dateType/\*[1]" /> </sch:pattern>  <!-- Test ISO code lists --> <sch:pattern abstract="true" id="IsoCodeListPattern">  <sch:rule context="$context">  <sch:assert test="string-length(@codeListValue) &gt; 0">  AP-3: The codeListValue attribute does not have a value.  </sch:assert>  </sch:rule> </sch:pattern> |

# Equivalent Scale

## Error message

1. The gmd:denominator element shall have a value or a valid Nil Reason.

## Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.spatialResolution > MD\_Resolution.equivalentScale > MD\_RepresentativeFraction.denominator

## Cause

1. The denominator element must have a value of a valid nil reason. However, the ‘equivalent scale’ metadata item is optional and does not need to be included in metadata.

## Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:spatialResolution>  <gmd:MD\_Resolution>  <gmd:equivalentScale>  <gmd:MD\_RepresentativeFraction>  <gmd:denominator/>  </gmd:MD\_RepresentativeFraction>  </gmd:equivalentScale>  </gmd:MD\_Resolution>  </gmd:spatialResolution>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

## Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:spatialResolution>  <gmd:MD\_Resolution>  <gmd:equivalentScale>  <gmd:MD\_RepresentativeFraction>  <gmd:denominator>  <gco:Integer>660000</gco:Integer>  </gmd:denominator>  </gmd:MD\_RepresentativeFraction>  </gmd:equivalentScale>  </gmd:MD\_Resolution>  </gmd:spatialResolution>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:spatialResolution>  <gmd:MD\_Resolution>  <gmd:equivalentScale>  <gmd:MD\_RepresentativeFraction>  <gmd:denominator gco:nilReason="missing"/>  </gmd:MD\_RepresentativeFraction>  </gmd:equivalentScale>  </gmd:MD\_Resolution>  </gmd:spatialResolution>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

## Schematron rule

|  |
| --- |
| <sch:pattern fpi="Gemini2-mi43">  <sch:title>Equivalent scale</sch:title>  </sch:pattern>  <sch:pattern is-a="TypeNillablePattern" id="Gemini2-mi43-Nillable">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:spatialResolution/\*[1]/gmd:equivalentScale/\*[1]/gmd:denominator"/> </sch:pattern>    <!-- Test that an element has a value or has a valid nilReason value --> <sch:pattern abstract="true" id="TypeNillablePattern">  <sch:rule context="$context">  <sch:assert test="  (string-length(normalize-space(.)) &gt; 0) or  (@gco:nilReason = 'inapplicable' or  @gco:nilReason = 'missing' or  @gco:nilReason = 'template' or  @gco:nilReason = 'unknown' or  @gco:nilReason = 'withheld' or  starts-with(@gco:nilReason, 'other:'))">  AP-1a: The <sch:name/> element shall have a value or a valid Nil Reason.  </sch:assert>  </sch:rule> </sch:pattern> Hierarchy level nameHierarchy level name is mandatory (Series/Service)Error message  1. Need at least one hierarchyLevelName  Context  1. MD\_Metadata.hierarchyLevelName  Cause  1. The metadata record describes a dataset series or service, but is missing a hierarchyLevelName element. At least one must be provided.  Example – fail <!-- Resource type --> <gmd:hierarchyLevel>  <gmd:MD\_ScopeCode codeListValue="service" codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/codelist/gmxCodelists.xml#MD\_ScopeCode">  Service  </gmd:MD\_ScopeCode> </gmd:hierarchyLevel> <!-- Metadata point of contact --> <gmd:contact> Example – pass <!-- Resource type --> <gmd:hierarchyLevel>  <gmd:MD\_ScopeCode codeListValue="service" codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/codelist/gmxCodelists.xml#MD\_ScopeCode">  Service  </gmd:MD\_ScopeCode> </gmd:hierarchyLevel>  <gmd:hierarchyLevelName>  <gco:CharacterString>service</gco:CharacterString> </gmd:hierarchyLevelName> <!-- Metadata point of contact --> <gmd:contact> Schematron rule <sch:pattern fpi="Gemini2-mi47-general">  <sch:p>Hierarchy level name is mandatory for dataset series and services, not required for datasets</sch:p>  <sch:rule context="//gmd:MD\_Metadata[1]">  <sch:let name="hierLevelNameCount" value="count(gmd:hierarchyLevelName)"/>  <sch:report test="$hierLevelNameCount = 0 and  ($hierarchyLevelCLValue = 'service' or $hierarchyLevelCLValue = 'series')">  MI-47a: Need at least one hierarchyLevelName have:  <sch:value-of select="$hierLevelNameCount"/>  </sch:report>  </sch:rule> </sch:pattern> Hierarchy level name must be service (Service)Error message  1. Hierarchy level name for services must have value "service"  Context  1. MD\_Metadata.hierarchyLevelName  Cause  1. When the metadata describes a service, the hierarchyLevelName must have a value of "service". But in this case has a value that is not service.  Example – fail <gmd:hierarchyLevel>  <gmd:MD\_ScopeCode codeListValue="service" codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/codelist/gmxCodelists.xml#MD\_ScopeCode">  Service  </gmd:MD\_ScopeCode> </gmd:hierarchyLevel> <gmd:hierarchyLevelName>  <gco:CharacterString>  **Services**  </gco:CharacterString> </gmd:hierarchyLevelName> Example – pass <gmd:hierarchyLevel>  <gmd:MD\_ScopeCode codeListValue="service" codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/codelist/gmxCodelists.xml#MD\_ScopeCode">  Service  </gmd:MD\_ScopeCode> </gmd:hierarchyLevel> <gmd:hierarchyLevelName>  <gco:CharacterString>  **service**  </gco:CharacterString> </gmd:hierarchyLevelName> Schematron rule <sch:pattern fpi="Gemini2-mi47-services-restriction">  <sch:p>TG Requirement 3.1: metadata/2.0/req/sds/resource-type  Additionally the name of the hierarchy level shall be given using element gmd:hierarchyLevelName element with a Non-empty Free Text Element containing the term "service" in the language of the metadata.</sch:p>  <sch:rule context="//gmd:MD\_Metadata[1]/gmd:hierarchyLevelName/\*[1]">  <sch:let name="hierLevelcListVal" value="preceding::gmd:hierarchyLevel/\*/@codeListValue"/>  <sch:let name="hierLevelNameText" value="descendant-or-self::text()"/>  <sch:report test="($hierLevelcListVal = 'service' and $hierLevelNameText != 'service')">  MI-47b: Hierarchy level name for services must have value "service"  </sch:report>  …  </sch:rule> </sch:pattern> Hierarchy level name must be service (Service)Error message  1. Hierarchy level name for services must have value "service"  Context  1. MD\_Metadata.hierarchyLevelName  Cause  1. When the metadata describes a service, the hierarchyLevelName must have a value of "service". But in this case there is no value.  Example – fail <gmd:hierarchyLevel>  <gmd:MD\_ScopeCode codeListValue="service" codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/codelist/gmxCodelists.xml#MD\_ScopeCode">  Service  </gmd:MD\_ScopeCode> </gmd:hierarchyLevel> <gmd:hierarchyLevelName>  **<gco:CharacterString></gco:CharacterString>** </gmd:hierarchyLevelName> Example – pass <gmd:hierarchyLevel>  <gmd:MD\_ScopeCode codeListValue="service" codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/codelist/gmxCodelists.xml#MD\_ScopeCode">  Service  </gmd:MD\_ScopeCode> </gmd:hierarchyLevel> <gmd:hierarchyLevelName>  **<gco:CharacterString>service</gco:CharacterString>** </gmd:hierarchyLevelName> Schematron rule <sch:pattern fpi="Gemini2-mi47-services-restriction">  <sch:p>TG Requirement 3.1: metadata/2.0/req/sds/resource-type  Additionally the name of the hierarchy level shall be given using element gmd:hierarchyLevelName element with a Non-empty Free Text Element containing the term "service" in the language of the metadata.</sch:p>  <sch:rule context="//gmd:MD\_Metadata[1]/gmd:hierarchyLevelName/\*[1]">  <sch:let name="hierLevelcListVal" value="preceding::gmd:hierarchyLevel/\*/@codeListValue"/>  <sch:let name="hierLevelNameText" value="descendant-or-self::text()"/>  …   <sch:assert test="normalize-space(.)">  MI-47c: Hierarchy level name for services must have value "service"  </sch:assert>  </sch:rule> </sch:pattern> Quality ScopedataQualityInfo is mandatoryError message  1. There must be at least one gmd:dataQualityInfo  Context  1. DQ\_DataQuality.scope  Cause  1. The metadata record has no gmd:dataQualityInfo section, but at least one is required.  Example – fail …  </gmd:distributionInfo>  <!-- At least one gmd:dataQualityInfo section is expected here… --> </gmd:MD\_Metadata> Example – pass </gmd:distributionInfo>  <gmd:dataQualityInfo>  <gmd:DQ\_DataQuality>  <gmd:scope>  <gmd:DQ\_Scope>  <gmd:level>  <gmd:MD\_ScopeCode  codeList="#MD\_ScopeCode" codeListValue="dataset" />  </gmd:level>  </gmd:DQ\_Scope>  </gmd:scope>  <gmd:report>  <gmd:DQ\_DomainConsistency>  <gmd:result>  <gmd:DQ\_ConformanceResult>  <gmd:specification>  <gmd:CI\_Citation>  <gmd:title>  <gmx:Anchor>  Commission Regulation (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services  </gmx:Anchor>  </gmd:title>  <gmd:date>  <gmd:CI\_Date>  <gmd:date>  <gco:Date>2010-12-08</gco:Date>  </gmd:date>  <gmd:dateType>  <gmd:CI\_DateTypeCode  codeList="#" codeListValue="publication"/>  </gmd:dateType>  </gmd:CI\_Date>  </gmd:date>  </gmd:CI\_Citation>  </gmd:specification>  <gmd:explanation  xmlns:gco="http://www.isotc211.org/2005/gco"  gco:nilReason="unknown"/>  <gmd:pass  xmlns:gco="http://www.isotc211.org/2005/gco"  gco:nilReason="unknown" />  </gmd:DQ\_ConformanceResult>  </gmd:result>  </gmd:DQ\_DomainConsistency>  </gmd:report>  <gmd:lineage>  <gmd:LI\_Lineage>  <gmd:statement  xmlns:gco="http://www.isotc211.org/2005/gco"  gco:nilReason="missing"/>  </gmd:LI\_Lineage>  </gmd:lineage>  </gmd:DQ\_DataQuality>  </gmd:dataQualityInfo> </gmd:MD\_Metadata> Schematron rule <sch:pattern fpi="Gemini2-mi48">  <sch:title>Quality Scope</sch:title>  <sch:rule context="//gmd:MD\_Metadata[1]">  <sch:assert test="count(gmd:dataQualityInfo) &gt; 0">  MI-48a: There must be at least one gmd:dataQualityInfo  </sch:assert>  </sch:rule> </sch:pattern> Only one gmd:DQ\_DataQuality (Series)Error message  1. There shall be exactly one gmd:dataQualityInfo/gmd:DQ\_DataQuality element scoped to the entire described dataset series  Context  1. DQ\_DataQuality.scope  Cause  1. The metadata record declares itself to be about a series (in the hierarchyLevel scope code), and therefore needs a gmd:dataQualityInfo/gmd:DQ\_DataQuality element scoped to a series, but either none was found (normal cause) or, more rarely, more than one was found  Example – fail <gmd:hierarchyLevel>  <gmd:MD\_ScopeCode codeList="#MD\_ScopeCode" **codeListValue="series"** />  </gmd:hierarchyLevel>  …  </gmd:distributionInfo>  <gmd:dataQualityInfo>  <gmd:DQ\_DataQuality>  <gmd:scope>  **<gmd:DQ\_Scope>  <gmd:level>  <gmd:MD\_ScopeCode codeList="#MD\_ScopeCode" codeListValue="dataset" />  </gmd:level>  </gmd:DQ\_Scope>**  </gmd:scope>  <gmd:report>  <gmd:DQ\_DomainConsistency>  <gmd:result>  …  </gmd:result>  </gmd:DQ\_DomainConsistency>  </gmd:report>  <gmd:lineage>  …  </gmd:lineage>  </gmd:DQ\_DataQuality>  </gmd:dataQualityInfo> </gmd:MD\_Metadata> Example – pass <gmd:hierarchyLevel>  <gmd:MD\_ScopeCode codeList="#MD\_ScopeCode" **codeListValue="series"** />  </gmd:hierarchyLevel>  …  </gmd:distributionInfo>  <gmd:dataQualityInfo>  <gmd:DQ\_DataQuality>  <gmd:scope>  <gmd:DQ\_Scope>  <gmd:level>  <gmd:MD\_ScopeCode codeList="#MD\_ScopeCode"  codeListValue="dataset" />  </gmd:level>  </gmd:DQ\_Scope>  </gmd:scope>  <gmd:report>  <gmd:DQ\_DomainConsistency>  <gmd:result>  …  </gmd:result>  </gmd:DQ\_DomainConsistency>  </gmd:report>  <gmd:lineage>  …  </gmd:lineage>  </gmd:DQ\_DataQuality>  </gmd:dataQualityInfo>  <gmd:dataQualityInfo>  <gmd:DQ\_DataQuality>  <gmd:scope>  **<gmd:DQ\_Scope>  <gmd:level>  <gmd:MD\_ScopeCode codeList="#MD\_ScopeCode"**  **codeListValue="series" />  </gmd:level>  </gmd:DQ\_Scope>**  </gmd:scope>  <gmd:report>  <gmd:DQ\_DomainConsistency>  <gmd:result>  …  </gmd:result>  </gmd:DQ\_DomainConsistency>  </gmd:report>  <gmd:lineage>  …  </gmd:lineage>  </gmd:DQ\_DataQuality>  </gmd:dataQualityInfo> </gmd:MD\_Metadata> Schematron rule <sch:pattern fpi="Gemini2-mi48-series">  <sch:p>  TG Requirement 1.9:  metadata/2.0/req/datasets-and-series/one-data-quality-element  </sch:p>  <sch:rule context="//gmd:MD\_Metadata[1]/gmd:hierarchyLevel/gmd:MD\_ScopeCode[@codeListValue = 'series']">  <sch:let name="dssDQ" value="count(//gmd:MD\_Metadata[1]/gmd:dataQualityInfo/gmd:DQ\_DataQuality/gmd:scope/gmd:DQ\_Scope/gmd:level/gmd:MD\_ScopeCode[@codeListValue = 'series'])"/>  <sch:assert test="$dssDQ = 1">  MI-48b: There shall be exactly one  gmd:dataQualityInfo/gmd:DQ\_DataQuality element scoped to the entire  described dataset series,  but here we have <sch:value-of select="$dssDQ"/>  </sch:assert>  </sch:rule> </sch:pattern> Only one gmd:DQ\_DataQuality (Dataset)Error message  1. There shall be exactly one gmd:dataQualityInfo/gmd:DQ\_DataQuality element scoped to the entire described dataset  Context  1. DQ\_DataQuality.scope  Cause  1. The metadata record declares itself to be about a dataset (in the hierarchyLevel scope code), and therefore needs a gmd:dataQualityInfo/gmd:DQ\_DataQuality element scoped to a dataset, but either none was found (normal cause) or, more rarely, more than one was found.  Example – fail <gmd:hierarchyLevel>  <gmd:MD\_ScopeCode **codeListValue="dataset"** codeSpace="ISOTC211/19115" codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/ML\_gmxCodelists.xml#MD\_ScopeCode">  Dataset  </gmd:MD\_ScopeCode> </gmd:hierarchyLevel>  …  </gmd:distributionInfo> <gmd:dataQualityInfo>  <gmd:DQ\_DataQuality>  <gmd:scope>  <gmd:DQ\_Scope>  <gmd:level>  <gmd:MD\_ScopeCode  codeList="#MD\_ScopeCode"  **codeListValue="nonGeographicDataset">**  nonGeographicDataset  </gmd:MD\_ScopeCode>  </gmd:level>  <gmd:levelDescription>  …  </gmd:levelDescription>  </gmd:DQ\_Scope>  </gmd:scope>  <gmd:report>  <gmd:DQ\_DomainConsistency>  <gmd:result>  <gmd:DQ\_ConformanceResult>  …  </gmd:DQ\_ConformanceResult>  </gmd:result>  </gmd:DQ\_DomainConsistency>  </gmd:report>  <gmd:lineage>  …  </gmd:lineage>  </gmd:DQ\_DataQuality>  </gmd:dataQualityInfo> </gmd:MD\_Metadata> Example – pass <gmd:hierarchyLevel>  <gmd:MD\_ScopeCode **codeListValue="dataset"** codeSpace="ISOTC211/19115" codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/ML\_gmxCodelists.xml#MD\_ScopeCode">  Dataset  </gmd:MD\_ScopeCode> </gmd:hierarchyLevel>  …  </gmd:distributionInfo> <gmd:dataQualityInfo>  <gmd:DQ\_DataQuality>  <gmd:scope>  <gmd:DQ\_Scope>  <gmd:level>  <gmd:MD\_ScopeCode  codeList="#MD\_ScopeCode"  **codeListValue="dataset">**  This report is scoped to the Dataset  </gmd:MD\_ScopeCode>  </gmd:level>  <gmd:levelDescription>  …  </gmd:levelDescription>  </gmd:DQ\_Scope>  </gmd:scope>  <gmd:report>  <gmd:DQ\_DomainConsistency>  <gmd:result>  <gmd:DQ\_ConformanceResult>  …  </gmd:DQ\_ConformanceResult>  </gmd:result>  </gmd:DQ\_DomainConsistency>  </gmd:report>  <gmd:lineage>  …  </gmd:lineage>  </gmd:DQ\_DataQuality>  </gmd:dataQualityInfo> </gmd:MD\_Metadata> Schematron rule <sch:pattern fpi="Gemini2-mi48-dataset">  <sch:p>  TG Requirement 1.9:  metadata/2.0/req/datasets-and-series/one-data-quality-element  </sch:p>  <sch:rule context="//gmd:MD\_Metadata[1]/gmd:hierarchyLevel/gmd:MD\_ScopeCode[@codeListValue = 'dataset']">  <sch:let name="dsDQ" value="count(//gmd:MD\_Metadata[1]/gmd:dataQualityInfo/gmd:DQ\_DataQuality/gmd:scope/gmd:DQ\_Scope/gmd:level/gmd:MD\_ScopeCode[@codeListValue = 'dataset'])"/>  <sch:assert test="$dsDQ = 1">  MI-48c: There shall be exactly one  gmd:dataQualityInfo/gmd:DQ\_DataQuality element scoped to the entire  described dataset, but  here we have <sch:value-of select="$dsDQ"/>  </sch:assert>  </sch:rule> </sch:pattern> Only one gmd:DQ\_DataQuality (Service)Error message  1. There shall be exactly one gmd:dataQualityInfo/gmd:DQ\_DataQuality element scoped to the entire described service  Context  1. DQ\_DataQuality.scope  Cause  1. The metadata record declares itself to be about a service (in the hierarchyLevel scope code), and therefore needs a gmd:dataQualityInfo/gmd:DQ\_DataQuality element scoped to a service, but either none was found (normal cause) or, more rarely, more than one was found  Example – fail <gmd:hierarchyLevel>  <gmd:MD\_ScopeCode  codeList="gmxCodelists.xml#MD\_ScopeCode" codeListValue="**service**">  service  </gmd:MD\_ScopeCode>  </gmd:hierarchyLevel>  …  …  </gmd:distributionInfo>  <gmd:dataQualityInfo>  <gmd:DQ\_DataQuality>  <!-- Scope - Required by ISO 19115 constraint -->  <gmd:scope>  <gmd:DQ\_Scope>  <gmd:level>  <gmd:MD\_ScopeCode   codeList="gmxCodelists.xml#MD\_ScopeCode"  codeListValue="attribute"/>  </gmd:level>  ...  </gmd:DQ\_Scope>  </gmd:scope>  <gmd:report>  <gmd:DQ\_DomainConsistency>  <gmd:result>  <gmd:DQ\_ConformanceResult>  …  </gmd:DQ\_ConformanceResult>  </gmd:result>  </gmd:DQ\_DomainConsistency>  </gmd:report>  <!-- Lineage -->  <gmd:lineage>  ...  </gmd:lineage>  </gmd:DQ\_DataQuality>  </gmd:dataQualityInfo> </gmd:MD\_Metadata> Example – pass <gmd:hierarchyLevel>  <gmd:MD\_ScopeCode  codeList="gmxCodelists.xml#MD\_ScopeCode" codeListValue="**service**">  service  </gmd:MD\_ScopeCode>  </gmd:hierarchyLevel>  …  …  </gmd:distributionInfo>  <gmd:dataQualityInfo>  <gmd:DQ\_DataQuality>  <!-- Scope - Required by ISO 19115 constraint -->  <gmd:scope>  <gmd:DQ\_Scope>  <gmd:level>  <gmd:MD\_ScopeCode   codeList="gmxCodelists.xml#MD\_ScopeCode"  codeListValue="**service**"/>  </gmd:level>  ...  </gmd:DQ\_Scope>  </gmd:scope>  <gmd:report>  <gmd:DQ\_DomainConsistency>  <gmd:result>  <gmd:DQ\_ConformanceResult>  …  </gmd:DQ\_ConformanceResult>  </gmd:result>  </gmd:DQ\_DomainConsistency>  </gmd:report>  <!-- Lineage -->  <gmd:lineage>  ...  </gmd:lineage>  </gmd:DQ\_DataQuality>  </gmd:dataQualityInfo> </gmd:MD\_Metadata> Schematron rule <sch:pattern fpi="Gemini2-mi48-service">  <sch:p>TG Requirement 3.8: metadata/2.0/req/sds/only-one-dq-element</sch:p>  <sch:rule context="//gmd:MD\_Metadata[1]/gmd:hierarchyLevel/gmd:MD\_ScopeCode[@codeListValue = 'service']">  <sch:let name="svDQ" value="count(//gmd:MD\_Metadata[1]/gmd:dataQualityInfo/gmd:DQ\_DataQuality/gmd:scope/gmd:DQ\_Scope/gmd:level/gmd:MD\_ScopeCode[@codeListValue = 'service'])"/>  <sch:assert test="$svDQ = 1">  MI-48d: There shall be exactly one  gmd:dataQualityInfo/gmd:DQ\_DataQuality element scoped to the entire  described service, but here we have <sch:value-of select="$svDQ"/>  </sch:assert>  </sch:rule>  </sch:pattern> levelDescription is manadatory (Service)Error message  1. gmd:levelDescription is missing ~ the level shall be named using element gmd:scope/gmd:DQ\_Scope/gmd:levelDescription/gmd:MD\_ScopeDescription/gmd:other element with a Non-empty Free Text Element containing the term "service"  Context  1. DQ\_DataQuality.scope  Cause  1. When then DQ\_DataQuality report is scoped to a service a levelDescription section is required.  Example – fail <gmd:DQ\_DataQuality>  <gmd:scope>  <gmd:DQ\_Scope>  <gmd:level>  <gmd:MD\_ScopeCode codeList="gmxCodelists.xml#MD\_ScopeCode"  **codeListValue="service"** />  </gmd:level>  </gmd:DQ\_Scope>  </gmd:scope> Example – pass <gmd:DQ\_DataQuality>  <gmd:scope>  <gmd:DQ\_Scope>  <gmd:level>  <gmd:MD\_ScopeCode codeList="gmxCodelists.xml#MD\_ScopeCode"  **codeListValue="service"** />  </gmd:level>  <gmd:levelDescription>  <gmd:MD\_ScopeDescription>  <gmd:other>  <gco:CharacterString>  service  </gco:CharacterString>  </gmd:other>  </gmd:MD\_ScopeDescription>  </gmd:levelDescription>  </gmd:DQ\_Scope>  </gmd:scope> Schematron rule <sch:pattern fpi="Gemini2-mi48-service-1">  <sch:p>The level shall be named using element gmd:scope/gmd:DQ\_Scope/gmd:levelDescription/gmd:MD\_ScopeDescription/gmd:other element with a Non-empty Free Text Element containing the term "service" in the language of the metadata.  (metadata/2.0/req/sds/only-one-dq-element)  </sch:p>  <sch:rule context="//gmd:MD\_Metadata[1]/gmd:dataQualityInfo/gmd:DQ\_DataQuality/gmd:scope/gmd:DQ\_Scope/gmd:level/gmd:MD\_ScopeCode[@codeListValue = 'service']">  <sch:assert test="count(following::gmd:levelDescription) = 1">  MI-48e: gmd:levelDescription is missing ~ the level shall be named using element gmd:scope/gmd:DQ\_Scope/gmd:levelDescription/gmd:MD\_ScopeDescription/gmd:other element with a Non-empty Free Text Element containing the term "service"  </sch:assert> …  </sch:rule> </sch:pattern> levelDescription value (Service)Error message  1. Value (gmd:MD\_ScopeDescription/gmd:other) must be "service"  Context  1. DQ\_DataQuality.scope  Cause  1. When then DQ\_DataQuality report is scoped to a service the value of the levelDescription/other element shall be service.  Example – fail <gmd:scope>  <gmd:DQ\_Scope>  <gmd:level>  <gmd:MD\_ScopeCode codeListValue="**service**" codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/codelist/gmxCodelists.xml#MD\_ScopeCode">  service  </gmd:MD\_ScopeCode>  </gmd:level>  <gmd:levelDescription>  <gmd:MD\_ScopeDescription>  <gmd:other>  <gco:CharacterString>  **Feature access service**  </gco:CharacterString>  </gmd:other>  </gmd:MD\_ScopeDescription>  </gmd:levelDescription>  </gmd:DQ\_Scope> </gmd:scope> Example – pass <gmd:scope>  <gmd:DQ\_Scope>  <gmd:level>  <gmd:MD\_ScopeCode codeListValue="**service**" codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/codelist/gmxCodelists.xml#MD\_ScopeCode">  service  </gmd:MD\_ScopeCode>  </gmd:level>  <gmd:levelDescription>  <gmd:MD\_ScopeDescription>  <gmd:other>  <gco:CharacterString>  **service**  </gco:CharacterString>  </gmd:other>  </gmd:MD\_ScopeDescription>  </gmd:levelDescription>  </gmd:DQ\_Scope> </gmd:scope> Schematron rule <sch:pattern fpi="Gemini2-mi48-service-1">  <sch:p>The level shall be named using element gmd:scope/gmd:DQ\_Scope/gmd:levelDescription/gmd:MD\_ScopeDescription/gmd:other element with a Non-empty Free Text Element containing the term "service" in the language of the metadata.  (metadata/2.0/req/sds/only-one-dq-element)  </sch:p>  <sch:rule context="//gmd:MD\_Metadata[1]/gmd:dataQualityInfo/gmd:DQ\_DataQuality/gmd:scope/gmd:DQ\_Scope/gmd:level/gmd:MD\_ScopeCode[@codeListValue = 'service']"> …  <sch:report test=" following::gmd:levelDescription/gmd:MD\_ScopeDescription/gmd:other/gco:CharacterString/text() != 'service' or following::gmd:levelDescription/gmd:MD\_ScopeDescription/gmd:other/gmx:Anchor/text() != 'service'">  MI-48f: Value (gmd:MD\_ScopeDescription/gmd:other) must be "service"  </sch:report>  </sch:rule> </sch:pattern> |

# Spatial representation type

## Type Code is required (Dataset/series)

### Error message

1. Dataset and dataset series metadata must have at least one gmd:spatialRepresentationType with gmd:MD\_SpatialRepresentationTypeCode. The codeListValue must be one of 'vector', 'grid', 'tin', or 'textTable'

### Context

1. MD\_DataIdentification.spatialRepresentationType

### Cause

1. The metadata record describes a dataset or dataset series, and as such must supply at least one spatialRepresentationType section but none was found

### Example – fail

…

</gmd:resourceConstraints>  
<!--

<gmd:spatialRepresentationType>  
 <gmd:MD\_SpatialRepresentationTypeCode codeList="#"

codeListValue="grid">

</gmd:MD\_SpatialRepresentationTypeCode>  
</gmd:spatialRepresentationType>

-->  
<gmd:spatialResolution>

…

### Example – pass

…

</gmd:resourceConstraints>  
<gmd:spatialRepresentationType>  
 <gmd:MD\_SpatialRepresentationTypeCode codeList="#" codeListValue="grid">  
 </gmd:MD\_SpatialRepresentationTypeCode>  
</gmd:spatialRepresentationType>

<gmd:spatialResolution>

…

### Schematron rule

<sch:pattern fpi="metadata/2.0/req/isdss/spatial-representation-type">  
 <sch:title>Spatial Representation Type</sch:title>  
 <sch:p>

Dataset and dataset series must have a MD\_SpatialRepresentationTypeCode

</sch:p>  
 <sch:rule context="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/gmd:MD\_DataIdentification[1]">  
 <sch:assert  
 test="($hierarchyLevelCLValue = 'dataset' or $hierarchyLevelCLValue = 'series') and count(gmd:spatialRepresentationType) &gt; 0">   
 MI-50a: Dataset and dataset series metadata must have at least one  
 gmd:spatialRepresentationType with gmd:MD\_SpatialRepresentationTypeCode. The codeListValue must be one of 'vector', 'grid', 'tin', or 'textTable'  
 </sch:assert>  
 </sch:rule>  
 </sch:pattern>

## code list value is incorrect (Dataset/Series)

### Error message

1. codeListValue must be one of 'vector', 'grid', 'tin', or 'textTable'

### Context

1. MD\_DataIdentification.spatialRepresentationType

### Cause

1. The metadata record describes a dataset or dataset series, and as such must supply at least one spatialRepresentationType section with a code type of 'vector', 'grid', 'tin', or 'textTable', but no such code was found.

### Example – fail

<gmd:hierarchyLevel>  
 <gmd:MD\_ScopeCode codeList="#MD\_ScopeCode" codeListValue="**dataset**" />  
</gmd:hierarchyLevel>

…

<gmd:spatialRepresentationType>  
 <gmd:MD\_SpatialRepresentationTypeCode   
 codeList="ML\_gmxCodelists.xml#MD\_SpatialRepresentationTypeCode"  
 codeListValue="**video**" />  
</gmd:spatialRepresentationType>

### Example – pass

<gmd:hierarchyLevel>  
 <gmd:MD\_ScopeCode codeList="#MD\_ScopeCode" codeListValue="**dataset**" />  
 </gmd:hierarchyLevel>

…

<gmd:spatialRepresentationType>  
 <gmd:MD\_SpatialRepresentationTypeCode   
 codeList="ML\_gmxCodelists.xml#MD\_SpatialRepresentationTypeCode"  
 codeListValue="**textTable**" />  
</gmd:spatialRepresentationType>

### Schematron rule

<sch:pattern fpi="metadata/2.0/req/isdss/spatial-representation-type-values">  
 <sch:p>

MD\_SpatialRepresentationTypeCode, ... must be one of 'vector', 'grid', 'tin',

or 'textTable'

</sch:p>  
 <sch:rule context="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/gmd:MD\_DataIdentification[1]/gmd:spatialRepresentationType/gmd:MD\_SpatialRepresentationTypeCode">  
 <sch:assert test="  
 ($hierarchyLevelCLValue = 'dataset' or $hierarchyLevelCLValue = 'series') and  
 (@codeListValue = 'vector' or @codeListValue = 'grid' or @codeListValue = 'tin' or @codeListValue = 'textTable')">  
 MI-50b: codeListValue must be one of 'vector', 'grid', 'tin', or 'textTable'  
 </sch:assert>  
 </sch:rule>  
</sch:pattern>

## Type Code value is mandatory (Dataset/Series)

### Error message

1. Dataset and dataset series metadata must have at least one gmd:spatialRepresentationType with gmd:MD\_SpatialRepresentationTypeCode. The codeListValue must be one of 'vector', 'grid', 'tin', or 'textTable'

### Context

1. MD\_DataIdentification.spatialRepresentationType

### Cause

1. The metadata record describes a dataset or dataset series, and as such must supply at least one spatialRepresentationType section with a code type of 'vector', 'grid', 'tin', or 'textTable', but no such code was found

### Example – fail

…

</gmd:resourceConstraints>  
<gmd:spatialRepresentationType

xmlns:gco="http://www.isotc211.org/2005/gco"

gco:nilReason="withheld" />  
<gmd:spatialResolution>

…

### Example – pass

…

</gmd:resourceConstraints>  
<gmd:spatialRepresentationType>  
 <gmd:MD\_SpatialRepresentationTypeCode codeList="#" codeListValue="tin">

</gmd:MD\_SpatialRepresentationTypeCode>  
</gmd:spatialRepresentationType>  
<gmd:spatialResolution>

…

### Schematron rule

<sch:pattern fpi="metadata/2.0/req/isdss/spatial-representation-typeNN">  
 <sch:title>

Spatial Representation Type is not nillable for dataset/series

</sch:title>  
 <sch:p>

Dataset and dataset series must have a MD\_SpatialRepresentationTypeCode

</sch:p>  
 <sch:rule context="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/gmd:MD\_DataIdentification[1]/gmd:spatialRepresentationType">  
 <sch:assert  
 test="($hierarchyLevelCLValue = 'dataset' or $hierarchyLevelCLValue = 'series') and count(gmd:MD\_SpatialRepresentationTypeCode) &gt; 0">

MI-50c: Dataset and dataset series metadata must have at least one  
 gmd:spatialRepresentationType with gmd:MD\_SpatialRepresentationTypeCode. The

codeListValue must be one of 'vector', 'grid', 'tin', or 'textTable'

</sch:assert>  
 </sch:rule>  
</sch:pattern>

## codeListValue attribute has no value

### Error message

1. The codeListValue attribute does not have a value

### Context

1. MD\_DataIdentification.spatialRepresentationType

### Cause

1. The codeListValue attribute of requires a value, the Spatial Representation Type Code requires a value, but none is given

### Example – fail

<gmd:spatialRepresentationType>  
 <gmd:MD\_SpatialRepresentationTypeCode codeListValue="" codeList="">  
 Grid  
 </gmd:MD\_SpatialRepresentationTypeCode>  
</gmd:spatialRepresentationType>

### Example – pass

<gmd:spatialRepresentationType>  
 <gmd:MD\_SpatialRepresentationTypeCode

codeListValue="grid" codeList="">  
 Grid  
 </gmd:MD\_SpatialRepresentationTypeCode>  
</gmd:spatialRepresentationType>

### Schematron rule

<sch:pattern is-a="IsoCodeListPattern" id="Gemini2-mi50-SRType-CodeList">  
 <sch:param name="context" value="//gmd:MD\_Metadata/gmd:identificationInfo/gmd:MD\_DataIdentification/gmd:spatialRepresentationType/gmd:MD\_SpatialRepresentationTypeCode" />  
</sch:pattern>

<!-- Test ISO code lists -->  
<sch:pattern abstract="true" id="IsoCodeListPattern">  
 <sch:rule context="$context">  
 <sch:assert test="string-length(@codeListValue) &gt; 0">

AP-3: The codeListValue attribute does not have a value.

</sch:assert>  
 </sch:rule>  
</sch:pattern>

# Character encoding

## Character encoding is not in the code list

### Error message

1. "XXX" is not one of the values of ISO 19139 code list MD\_CharacterSetCode

### Context

1. MD\_DataIdentification.characterSet

### Cause

1. When a characterSet section is listed, all codes used must be in the ISO 19139 code list MD\_CharacterSetCode

### Example – fail

<gmd:characterSet xmlns:wms="http://www.opengis.net/wms">  
 <gmd:MD\_CharacterSetCode **codeListValue="utf-8"** codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/ML\_gmxCodelists.xml#MD\_CharacterSetCode" />  
</gmd:characterSet>

### Example – pass

<gmd:characterSet xmlns:wms="http://www.opengis.net/wms">  
 <gmd:MD\_CharacterSetCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/ML\_gmxCodelists.xml#MD\_CharacterSetCode" **codeListValue="utf8"**/>  
</gmd:characterSet>

### Schematron rule

<sch:pattern fpi="Gemini2-mi51">  
 <sch:title>Character encoding</sch:title>  
 <sch:p>

The character encoding(s) shall be given for datasets and datasets series which

use encodings not based on UTF-8 by using element

gmd:characterSet/gmd:MD\_CharacterSetCode referring to one of the values of ISO

19139 code list MD\_CharacterSetCode.

</sch:p>  
 <sch:p>

The multiplicity of this element is 0..n. If more than one character

encoding is used within the described dataset or datasets series, all used

character encodings, including UTF-8 code list value "utf8"), shall be given

using this element

</sch:p>  
 <sch:rule context="//gmd:MD\_Metadata[1]/gmd:identificationInfo/gmd:MD\_DataIdentification/gmd:characterSet/gmd:MD\_CharacterSetCode[1]/@codeListValue">  
 <sch:assert test="  
 ($hierarchyLevelCLValue = 'dataset' or $hierarchyLevelCLValue = 'series') and  
 $charSetCodes//gml:identifier/text()[normalize-space(.) =

normalize-space(current()/.)]">

MI-51: "<sch:value-of select="normalize-space(.)"/>" is not one of the values

of ISO 19139 code list MD\_CharacterSetCode

</sch:assert>  
 </sch:rule>  
 </sch:pattern>

## code list attribute has no value

### Error message

1. The codeListValue attribute does not have a value.

### Context

1. MD\_DataIdentification.characterSet

### Cause

1. The codeListValue attribute of the MD\_CharacterSetCode requires a value, but none was given.

### Example – fail

<gmd:characterSet xmlns:wms="http://www.opengis.net/wms">  
 <gmd:MD\_CharacterSetCode codeListValue="" codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/ML\_gmxCodelists.xml#MD\_CharacterSetCode" />  
</gmd:characterSet>

### Example – pass

<gmd:characterSet xmlns:wms="http://www.opengis.net/wms">  
 <gmd:MD\_CharacterSetCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/ML\_gmxCodelists.xml#MD\_CharacterSetCode" **codeListValue="utf8"**/>  
</gmd:characterSet>

### Schematron rule

<sch:pattern is-a="IsoCodeListPattern" id="Gemini2-mi51-CharSet-CodeList">  
 <sch:param name="context" value="//gmd:MD\_Metadata/gmd:identificationInfo[1]/gmd:MD\_DataIdentification/gmd:characterSet/gmd:MD\_CharacterSetCode" />  
</sch:pattern>

<!-- Test ISO code lists -->  
<sch:pattern abstract="true" id="IsoCodeListPattern">  
 <sch:rule context="$context">  
 <sch:assert test="string-length(@codeListValue) &gt; 0">

AP-3: The codeListValue attribute does not have a value.

</sch:assert>  
 </sch:rule>  
</sch:pattern>

# Topological consistency

## xsi:type attribute is required

### Error message

1. The result type shall be declared using the xsi:type attribute of the gco:Record element

### Context

1. DQ\_DataQuality > DQ\_TopologicalConsistency.result > DQ\_Result

### Cause

1. When we have a DQ\_QuantitativeResult for a gmd:DQ\_TopologicalConsistency report, the result type shall be declared using the xsi:type attribute of the gco:Record element.

### Example – fail

<gmd:report>  
 <gmd:DQ\_TopologicalConsistency>  
 <gmd:nameOfMeasure>  
 <gco:CharacterString>  
 Number of faulty point-curve connections  
 </gco:CharacterString>  
 </gmd:nameOfMeasure>  
 <gmd:evaluationMethodType>  
 <gmd:DQ\_EvaluationMethodTypeCode codeList="standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/codelist/gmxCodelists.xml#DQ\_EvaluationMethodTypeCode" codeListValue="indirect"/>  
 </gmd:evaluationMethodType>  
 <gmd:evaluationMethodDescription>  
 <gco:CharacterString>  
 A point-curve connection exists where different curves touch...   
 </gco:CharacterString>  
 </gmd:evaluationMethodDescription>  
 <gmd:dateTime/>  
 <gmd:result>  
 <gmd:DQ\_QuantitativeResult>  
<!--The mandatory elements are valueUnit and value/Record with xsi:type -->  
 <gmd:valueUnit xlink:href="http://www.opengis.net/def/uom/OGC/1.0/unity"/>  
 <gmd:value>  
 **<gco:Record xmlns:xs="http://www.w3.org/2001/XMLSchema">**

**12**

**</gco:Record>**  
 </gmd:value>  
 </gmd:DQ\_QuantitativeResult>  
 </gmd:result>  
 </gmd:DQ\_TopologicalConsistency>  
</gmd:report>

### Example – pass

<gmd:report>  
 <gmd:DQ\_TopologicalConsistency>  
 <gmd:nameOfMeasure>  
 <gco:CharacterString>  
 Number of faulty point-curve connections  
 </gco:CharacterString>  
 </gmd:nameOfMeasure>  
 <gmd:evaluationMethodType>  
 <gmd:DQ\_EvaluationMethodTypeCode codeList="standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/codelist/gmxCodelists.xml#DQ\_EvaluationMethodTypeCode" codeListValue="indirect"/>  
 </gmd:evaluationMethodType>  
 <gmd:evaluationMethodDescription>  
 <gco:CharacterString>  
 A point-curve connection exists where different curves touch...   
 </gco:CharacterString>  
 </gmd:evaluationMethodDescription>  
 <gmd:dateTime/>  
 <gmd:result>  
 <gmd:DQ\_QuantitativeResult>  
<!--The mandatory elements are valueUnit and value/Record with xsi:type -->  
 <gmd:valueUnit xlink:href="http://www.opengis.net/def/uom/OGC/1.0/unity"/>  
 <gmd:value>  
 **<gco:Record**

**xmlns:xs="http://www.w3.org/2001/XMLSchema"**

**xsi:type="xs:integer">**

**12**

**</gco:Record>**  
 </gmd:value>  
 </gmd:DQ\_QuantitativeResult>  
 </gmd:result>  
 </gmd:DQ\_TopologicalConsistency>  
</gmd:report>

### Schematron rule

<sch:pattern

fpi="metadata/2.0/req/isdss/topological-consistency-quantitative-results">  
 <sch:p>

When we have a DQ\_QuantitativeResult for a gmd:DQ\_TopologicalConsistency report, the result type shall be declared using the xsi:type attribute of the gco:Record element

</sch:p>  
 <sch:rule context="//gmd:MD\_Metadata[1]/gmd:dataQualityInfo/gmd:DQ\_DataQuality/gmd:report/gmd:DQ\_TopologicalConsistency/gmd:result/gmd:DQ\_QuantitativeResult/gmd:value">  
 <sch:assert test="count(gco:Record/@xsi:type) = 1">

MI-52a: The result type shall be declared using the xsi:type attribute of the

gco:Record element

</sch:assert>  
 </sch:rule>  
</sch:pattern>

## Date shall be 2013-04-05

### Error message

1. When TopologicalConsistency is for *INSPIRE Data Specifications - Base Models - Generic Network Model*, the date given shall be the date of publication of the Generic Network Model, which is 2013-04-05

### Context

1. DQ\_DataQuality > DQ\_TopologicalConsistency.result > DQ\_Result

### Cause

1. The date of publication shall be given in the TopologicalConsistency report for *INSPIRE Data Specifications - Base Models - Generic Network Model*, The date given does not match the publication date, which is 2013-04-05

### Example – fail

<gmd:report>  
 <gmd:DQ\_TopologicalConsistency>  
 <gmd:result>  
 <gmd:DQ\_ConformanceResult>  
 <gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
<!-- The title for this report shall always be "INSPIRE Data Specifications - Base Models - Generic Network Model" -->  
 <gco:CharacterString>

**INSPIRE Data Specifications - Base Models - Generic Network Model**

</gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
<!-- The date shall be the date of publication of the Generic Network Model -->  
 <gco:Date>**2013-04-06**</gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode

codeList="" codeListValue="publication"/>  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
 </gmd:specification>  
 <gmd:explanation>  
 <gco:CharacterString>

[Some statement on topological consistency]

</gco:CharacterString>  
 </gmd:explanation>  
 <gmd:pass>  
 <gco:Boolean>true</gco:Boolean>  
 </gmd:pass>  
 </gmd:DQ\_ConformanceResult>  
 </gmd:result>  
 </gmd:DQ\_TopologicalConsistency>  
</gmd:report>

### Example – pass

<gmd:report>  
 <gmd:DQ\_TopologicalConsistency>  
 <gmd:result>  
 <gmd:DQ\_ConformanceResult>  
 <gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
<!-- The title for this report shall always be "INSPIRE Data Specifications - Base Models - Generic Network Model" -->  
 <gco:CharacterString>

**INSPIRE Data Specifications - Base Models - Generic Network Model**

</gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
<!-- The date shall be the date of publication of the Generic Network Model -->  
 <gco:Date>**2013-04-05**</gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode

codeList="" codeListValue="publication"/>  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
 </gmd:specification>  
 <gmd:explanation>  
 <gco:CharacterString>

[Some statement on topological consistency]

</gco:CharacterString>  
 </gmd:explanation>  
 <gmd:pass>  
 <gco:Boolean>true</gco:Boolean>  
 </gmd:pass>  
 </gmd:DQ\_ConformanceResult>  
 </gmd:result>  
 </gmd:DQ\_TopologicalConsistency>  
</gmd:report>

### Schematron rule

<sch:pattern

fpi="metadata/2.0/req/isdss/topological-consistency-descriptive-results">  
 <sch:title>Topological consistency</sch:title>  
 <sch:p>

In the event that a Topological consistency report is required for a Generic

Network Model dataset, check that the correct date/datetype and boolean values

are given. Test relies on the citation having the required title...

</sch:p>  
 <sch:let name="GenericNetworkModelValue"  
 value="'INSPIRE Data Specifications - Base Models - Generic Network Model'"/>  
 <sch:let name="GenericNetworkModelDate" value="'2013-04-05'"/>  
 <sch:rule context="//gmd:DQ\_TopologicalConsistency/gmd:result/gmd:DQ\_ConformanceResult/gmd:specification/gmd:CI\_Citation/gmd:title/gco:CharacterString[normalize-space(

text()) = 'INSPIRE Data Specifications - Base Models - Generic Network Model']">  
 <sch:report

test="following::gmd:date/gmd:CI\_Date/gmd:date/gco:Date[text() != '2013-04-05']">  
 MI-52b: When TopologicalConsistency is for

<sch:value-of select="$GenericNetworkModelValue"/>, the date given shall be

the date of publication of the Generic Network Model, which is 2013-04-05

</sch:report>  
…  
 </sch:rule>  
</sch:pattern>

## Date type shall be publication

### Error message

1. When TopologicalConsistency is for *INSPIRE Data Specifications - Base Models - Generic Network Model*, the code list value shall always be publication

### Context

1. DQ\_DataQuality > DQ\_TopologicalConsistency.result > DQ\_Result

### Cause

1. The date type given in the TopologicalConsistency report for *INSPIRE Data Specifications - Base Models - Generic Network Model*, shall be publication, but another value was specified

### Example – fail

<gmd:report>  
 <gmd:DQ\_TopologicalConsistency>  
 <gmd:result>  
 <gmd:DQ\_ConformanceResult>  
 <gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
<!-- The title for this report shall always be "INSPIRE Data Specifications - Base Models - Generic Network Model" -->  
 <gco:CharacterString>

**INSPIRE Data Specifications - Base Models - Generic Network Model**

</gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date>2013-04-05</gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
<!-- The code list value shall always be publication -->  
 <gmd:CI\_DateTypeCode

codeList="" codeListValue="**revision**"/>  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
 </gmd:specification>  
 <gmd:explanation>  
 <gco:CharacterString>

[Some statement on topological consistency]

</gco:CharacterString>  
 </gmd:explanation>  
 <gmd:pass>  
 <gco:Boolean>false</gco:Boolean>  
 </gmd:pass>  
 </gmd:DQ\_ConformanceResult>  
 </gmd:result>  
 </gmd:DQ\_TopologicalConsistency>  
</gmd:report>

### Example – pass

<gmd:report>  
 <gmd:DQ\_TopologicalConsistency>  
 <gmd:result>  
 <gmd:DQ\_ConformanceResult>  
 <gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
<!-- The title for this report shall always be "INSPIRE Data Specifications - Base Models - Generic Network Model" -->  
 <gco:CharacterString>

**INSPIRE Data Specifications - Base Models - Generic Network Model**

</gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date>2013-04-05</gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
<!-- The code list value shall always be publication -->  
 <gmd:CI\_DateTypeCode

codeList="" codeListValue="**publication**"/>  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
 </gmd:specification>  
 <gmd:explanation>  
 <gco:CharacterString>

[Some statement on topological consistency]

</gco:CharacterString>  
 </gmd:explanation>  
 <gmd:pass>  
 <gco:Boolean>false</gco:Boolean>  
 </gmd:pass>  
 </gmd:DQ\_ConformanceResult>  
 </gmd:result>  
 </gmd:DQ\_TopologicalConsistency>  
</gmd:report>

### Schematron rule

<sch:pattern

fpi="metadata/2.0/req/isdss/topological-consistency-descriptive-results">  
 <sch:title>Topological consistency</sch:title>  
 <sch:p>

In the event that a Topological consistency report is required for a Generic

Network Model dataset, check that the correct date/datetype and boolean values

are given. Test relies on the citation having the required title...

</sch:p>  
 <sch:let name="GenericNetworkModelValue"  
 value="'INSPIRE Data Specifications - Base Models - Generic Network Model'"/>  
 <sch:let name="GenericNetworkModelDate" value="'2013-04-05'"/>  
 <sch:rule context="//gmd:DQ\_TopologicalConsistency/gmd:result/gmd:DQ\_ConformanceResult/gmd:specification/gmd:CI\_Citation/gmd:title/gco:CharacterString[normalize-space(

text()) = 'INSPIRE Data Specifications - Base Models - Generic Network Model']">  
…  
 <sch:report  
 test="following::gmd:dateType/gmd:CI\_DateTypeCode[@codeListValue != 'publication']">

MI-52c: When TopologicalConsistency is for

<sch:value-of select="$GenericNetworkModelValue"/>, the code list value

shall always be publication

</sch:report>  
…  
 </sch:rule>  
</sch:pattern>

## An explanation must be provided

### Error message

1. When TopologicalConsistency is for *INSPIRE Data Specifications - Base Models - Generic Network Model*, some statement on topological consistency must be provided in the explanation

### Context

1. DQ\_DataQuality > DQ\_TopologicalConsistency.result > DQ\_Result

### Cause

1. When TopologicalConsistency is for INSPIRE Data Specifications - Base Models - Generic Network Model, some statement on topological consistency must be provided in an explanation, but no explanation was given

### Example – fail

<gmd:report>  
 <gmd:DQ\_TopologicalConsistency>  
 <gmd:result>  
 <gmd:DQ\_ConformanceResult>  
 <gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
<!-- The title for this report shall always be "INSPIRE Data Specifications - Base Models - Generic Network Model" -->  
 <gco:CharacterString>

**INSPIRE Data Specifications - Base Models - Generic Network Model**

</gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date>2013-04-05</gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode

codeList="" codeListValue="publication"/>  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
 </gmd:specification>  
 <!-- An explanation must be provided -->  
 **<gmd:explanation gco:nilReason="missing" />**  
 <gmd:pass>  
 <gco:Boolean>false</gco:Boolean>  
 </gmd:pass>  
 </gmd:DQ\_ConformanceResult>  
 </gmd:result>  
 </gmd:DQ\_TopologicalConsistency>  
</gmd:report>

### Example – pass

<gmd:report>  
 <gmd:DQ\_TopologicalConsistency>  
 <gmd:result>  
 <gmd:DQ\_ConformanceResult>  
 <gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
<!-- The title for this report shall always be "INSPIRE Data Specifications - Base Models - Generic Network Model" -->  
 <gco:CharacterString>

**INSPIRE Data Specifications - Base Models - Generic Network Model**

</gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date>2013-04-05</gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode

codeList="" codeListValue="publication"/>  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
 </gmd:specification>  
 <!-- An explanation must be provided -->  
 **<gmd:explanation>  
 <gco:CharacterString>**

**[Some statement on topological consistency]**

**</gco:CharacterString>  
 </gmd:explanation>** <gmd:pass>  
 <gco:Boolean>false</gco:Boolean>  
 </gmd:pass>  
 </gmd:DQ\_ConformanceResult>  
 </gmd:result>  
 </gmd:DQ\_TopologicalConsistency>  
</gmd:report>

### Schematron rule

<sch:pattern

fpi="metadata/2.0/req/isdss/topological-consistency-descriptive-results">  
 <sch:title>Topological consistency</sch:title>  
 <sch:p>

In the event that a Topological consistency report is required for a Generic

Network Model dataset, check that the correct date/datetype and boolean values

are given. Test relies on the citation having the required title...

</sch:p>  
 <sch:let name="GenericNetworkModelValue"  
 value="'INSPIRE Data Specifications - Base Models - Generic Network Model'"/>  
 <sch:let name="GenericNetworkModelDate" value="'2013-04-05'"/>  
 <sch:rule context="//gmd:DQ\_TopologicalConsistency/gmd:result/gmd:DQ\_ConformanceResult/gmd:specification/gmd:CI\_Citation/gmd:title/gco:CharacterString[normalize-space(

text()) = 'INSPIRE Data Specifications - Base Models - Generic Network Model']">  
…  
<!-- explanation is needed, empty free text is caught elsewhere and gmd:explanation is required by schema -->  
 <sch:assert test="count(following::gmd:explanation/@gco:nilReason) = 0">

MI-52d: When TopologicalConsistency is for

<sch:value-of select="$GenericNetworkModelValue"/>, Some statement on

topological consistency must be provided in the explanation

</sch:assert>  
…  
 </sch:rule>  
</sch:pattern>

## Value shall be false

### Error message

1. When TopologicalConsistency is for *INSPIRE Data Specifications - Base Models - Generic Network Model*, The value shall always be false to indicate that the data does not assure the centerline topology for the network

### Context

1. DQ\_DataQuality > DQ\_TopologicalConsistency.result > DQ\_Result

### Cause

1. The value shall always be false to indicate that the data does not assure the centerline topology for the network, in a Topological Consistencyreport to *INSPIRE Data Specifications - Base Models - Generic Network Model.*

### Example – fail

<gmd:report>  
 <gmd:DQ\_TopologicalConsistency>  
 <gmd:result>  
 <gmd:DQ\_ConformanceResult>  
 <gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
<!-- The title for this report shall always be "INSPIRE Data Specifications - Base Models - Generic Network Model" -->  
 <gco:CharacterString>

**INSPIRE Data Specifications - Base Models - Generic Network Model**

</gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date>2013-04-05</gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode

codeList="" codeListValue="publication"/>  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
 </gmd:specification>  
 <gmd:explanation>  
 <gco:CharacterString>

[Some statement on topological consistency]

</gco:CharacterString>  
 </gmd:explanation>  
 <gmd:pass>  
<!-- The value shall always be false to indicate that the data does not assure the centerline topology for the network -->  
 **<gco:Boolean>true</gco:Boolean>**  
 </gmd:pass>  
 </gmd:DQ\_ConformanceResult>  
 </gmd:result>  
 </gmd:DQ\_TopologicalConsistency>  
</gmd:report>

### Example – pass

<gmd:report>  
 <gmd:DQ\_TopologicalConsistency>  
 <gmd:result>  
 <gmd:DQ\_ConformanceResult>  
 <gmd:specification>  
 <gmd:CI\_Citation>  
 <gmd:title>  
<!-- The title for this report shall always be "INSPIRE Data Specifications - Base Models - Generic Network Model" -->  
 <gco:CharacterString>

**INSPIRE Data Specifications - Base Models - Generic Network Model**

</gco:CharacterString>  
 </gmd:title>  
 <gmd:date>  
 <gmd:CI\_Date>  
 <gmd:date>  
 <gco:Date>2013-04-05</gco:Date>  
 </gmd:date>  
 <gmd:dateType>  
 <gmd:CI\_DateTypeCode

codeList="" codeListValue="publication"/>  
 </gmd:dateType>  
 </gmd:CI\_Date>  
 </gmd:date>  
 </gmd:CI\_Citation>  
 </gmd:specification>  
 <gmd:explanation>  
 <gco:CharacterString>

[Some statement on topological consistency]

</gco:CharacterString>  
 </gmd:explanation>  
 <gmd:pass>  
<!-- The value shall always be false to indicate that the data does not assure the centerline topology for the network -->  
 **<gco:Boolean>false</gco:Boolean>**  
 </gmd:pass>  
 </gmd:DQ\_ConformanceResult>  
 </gmd:result>  
 </gmd:DQ\_TopologicalConsistency>  
</gmd:report>

### Schematron rule

<sch:pattern

fpi="metadata/2.0/req/isdss/topological-consistency-descriptive-results">  
 <sch:title>Topological consistency</sch:title>  
 <sch:p>

In the event that a Topological consistency report is required for a Generic

Network Model dataset, check that the correct date/datetype and boolean values

are given. Test relies on the citation having the required title...

</sch:p>  
 <sch:let name="GenericNetworkModelValue"  
 value="'INSPIRE Data Specifications - Base Models - Generic Network Model'"/>  
 <sch:let name="GenericNetworkModelDate" value="'2013-04-05'"/>  
 <sch:rule context="//gmd:DQ\_TopologicalConsistency/gmd:result/gmd:DQ\_ConformanceResult/gmd:specification/gmd:CI\_Citation/gmd:title/gco:CharacterString[normalize-space(

text()) = 'INSPIRE Data Specifications - Base Models - Generic Network Model']">  
…  
 <sch:assert test="following::gmd:pass/gco:Boolean = 'false'">

MI-52e: When TopologicalConsistency is for

<sch:value-of select="$GenericNetworkModelValue"/>, The value shall always be

false to indicate that the data does not assure the centerline topology for  
 the network

</sch:assert>  
 </sch:rule>  
</sch:pattern>

# Ancillary Tests

## Identification information citation

### Error message

1. Identification information citation shall not be null.

### Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.citation
2. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.citation

### Cause

1. The citation element can not have a nil reason attribute.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  <gmd:citation>  ...  </gmd:citation>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern fpi="Gemini2-at1">  <sch:title>Data identification citation</sch:title>  <sch:p>The identification information citation cannot be null.</sch:p>  <sch:rule context="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]/gmd:citation">  <sch:assert test="count(@gco:nilReason) = 0">  AT-1: Identification information citation shall not be null.  </sch:assert>  </sch:rule>  </sch:pattern> |

## First identification element (dataset and series)

### Error message

1. The first identification information element shall be of type gmd:MD\_DataIdentification.

### Context

1. MD\_Metadata.identificationInfo

### Cause

1. Where a metadata instance is for a dataset or a series, the first identificationInfo element must have a child element of the type MD\_DataIdentification.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:hierarchyLevel>  <gmd:MD\_ScopeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#MD\_ScopeCode" codeListValue="dataset">dataset</gmd:MD\_ScopeCode>  </gmd:hierarchyLevel>  ...  <gmd:identificationInfo>  <srv:SV\_ServiceIdentification>  ...  </srv:SV\_ServiceIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:hierarchyLevel>  <gmd:MD\_ScopeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#MD\_ScopeCode" codeListValue="dataset">dataset</gmd:MD\_ScopeCode>  </gmd:hierarchyLevel>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern fpi="Gemini2-at2">  <sch:title>Metadata resource type test</sch:title>  <sch:p>  Test to ensure that metadata about datasets include the  gmd:MD\_DataIdentification element and metadata about services  include the srv:SV\_ServiceIdentification element  </sch:p>  <sch:rule context="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]">  <sch:assert test="  ((../gmd:hierarchyLevel[1]/\*[1]/@codeListValue = 'dataset' or  ../gmd:hierarchyLevel[1]/\*[1]/@codeListValue = 'series') and  (local-name(\*) = 'MD\_DataIdentification' or \*/@gco:isoType = 'gmd:MD\_DataIdentification')) or  (../gmd:hierarchyLevel[1]/\*[1]/@codeListValue != 'dataset' and  ../gmd:hierarchyLevel[1]/\*[1]/@codeListValue != 'series') or  count(../gmd:hierarchyLevel) = 0">  AT-2a: The first identification information element shall be of type gmd:MD\_DataIdentification.  </sch:assert>  …  </sch:rule> </sch:pattern> |

## First identification element (service)

### Error message

1. The first identification information element shall be of type srv:SV\_ServiceIdentification.

### Context

1. MD\_Metadata.identificationInfo

### Cause

1. Where a metadata instance is for a service, the first identificationInfo element must have a child element of the type SV\_ServiceIdentification.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:hierarchyLevel>  <gmd:MD\_ScopeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#MD\_ScopeCode" codeListValue="service">service</gmd:MD\_ScopeCode>  </gmd:hierarchyLevel>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:hierarchyLevel>  <gmd:MD\_ScopeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#MD\_ScopeCode" codeListValue="service">service</gmd:MD\_ScopeCode>  </gmd:hierarchyLevel>  ...  <gmd:identificationInfo>  <srv:SV\_ServiceIdentification>  ...  </srv:SV\_ServiceIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern fpi="Gemini2-at2">  <sch:title>Metadata resource type test</sch:title>  <sch:p>Test to ensure that metadata about datasets include the gmd:MD\_DataIdentification element and metadata about services include the srv:SV\_ServiceIdentification element</sch:p>  <sch:rule context="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]">  …  <sch:assert test="  ((../gmd:hierarchyLevel[1]/\*[1]/@codeListValue = 'service') and  (local-name(\*) = 'SV\_ServiceIdentification' or \*/@gco:isoType = 'srv:SV\_ServiceIdentification')) or  (../gmd:hierarchyLevel[1]/\*[1]/@codeListValue != 'service') or  count(../gmd:hierarchyLevel) = 0" >  AT-2b: The first identification information element shall be of type  srv:SV\_ServiceIdentification.  </sch:assert>  </sch:rule>  </sch:pattern> |

## File identifier is mandatory

### Error message

1. A metadata file identifier shall be provided. Its value shall be a system generated GUID.

### Context

1. MD\_Metadata.fileIdentifier

### Cause

1. The item ‘metadata file identifier’ is a system level mandatory element. This assertion will fail if it is omitted from a metadata instance or if there is more than one ‘metadata file identifier’ in a metadata instance.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  <gmd:fileIdentifier>  <gco:CharacterString>  A0810C40-CD23-430E-97D2-18E73DEF9A5D  </gco:CharacterString>  </gmd:fileIdentifier>  ...  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern fpi="Gemini2-at3">  <sch:title>Metadata file identifier</sch:title>  <sch:p>A file identifier is required</sch:p>  <sch:rule context="//gmd:MD\_Metadata[1]">  <sch:assert test="count(gmd:fileIdentifier) = 1">  AT-3a: A metadata file identifier shall be provided.  Its value shall be a system generated GUID.  </sch:assert>  …  </sch:rule>  </sch:pattern> File identifier shouldn't contain bracesError message  1. File identifier shouldn't contain braces  Context  1. MD\_Metadata.fileIdentifier  Cause  1. The item ‘metadata file identifier’ shouldn't contain curly braces. This assertion will fail if the file identifier contains any curly braces.  Example – fail <gmd:fileIdentifier>  <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  **{1601f87c-e502-4a83-ae64-47240dc0321b}**  </gco:CharacterString> </gmd:fileIdentifier> Example – pass <gmd:fileIdentifier>  <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">  **83c56ad5-2af1-4741-a669-dbbf4d307c6b**  </gco:CharacterString> </gmd:fileIdentifier> Schematron rule <sch:pattern fpi="Gemini2-at3">  <sch:title>Metadata file identifier</sch:title>  <sch:p>A file identifier is required</sch:p>  <sch:rule context="//gmd:MD\_Metadata[1]"> …  <sch:report test="contains(gmd:fileIdentifier, '{') or contains(gmd:fileIdentifier, '}')">  AT-3b: File identifier shouldn't contain braces  </sch:report>  </sch:rule> </sch:pattern> |

## File identifier not nillable

### Error message

1. The gmd:fileIdentifier element is not nillable and shall have a value.

### Context

1. MD\_Metadata.fileIdentifier

### Cause

1. The item ‘metadata file identifier’ is a system level mandatory element and it must have a valid globally unique value. This assertion will fail the file identifier has a nil reason attribute.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  <gmd:fileIdentifier gco:nilReason="missing"/>  ...  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  <gmd:fileIdentifier>  <gco:CharacterString>A0810C40-CD23-430E-97D2-18E73DEF9A5D</gco:CharacterString>  </gmd:fileIdentifier>  ...  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern is-a="TypeNotNillablePattern" id="Gemini2-at3-NotNillable">  <sch:param name="context" value="//gmd:MD\_Metadata[1]/gmd:fileIdentifier"/> </sch:pattern>  <!-- Test that an element has a value - the value is not nillable --> <sch:pattern abstract="true" id="TypeNotNillablePattern">  <sch:rule context="$context">  <sch:assert test="string-length(.) &gt; 0 and count(./@gco:nilReason) = 0">  AP-2: The <sch:name/> element is not nillable and shall have a value.  </sch:assert>  </sch:rule> </sch:pattern> |

## Constraints

### Error message

1. Limitations on public access and use constraints are required.

### Context

1. MD\_Metadata.identificationInfo > MD\_DataIdentification.resourceConstraints
2. MD\_Metadata.identificationInfo > SV\_ServiceIdentification.resourceConstraints

### Cause

1. The resourceConstraints element, within which the constraints metadata items ‘limitations on public access’ and ‘use limitation’ are encoded, is an optional element. This assertion is included to ensure that a warning is issued if it is omitted from metadata, to indicate that the constraints items are missing. This assertion fails if resourceConstraints is omitted from metadata.

### Example – fail

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Example – success

|  |
| --- |
| <gmd:MD\_Metadata>  ...  <gmd:identificationInfo>  <gmd:MD\_DataIdentification>  ...  <gmd:resourceConstraints>  ...  </gmd:resourceConstraints>  ...  </gmd:MD\_DataIdentification>  </gmd:identificationInfo>  ...  </gmd:MD\_Metadata> |

### Schematron rule

|  |
| --- |
| <sch:pattern fpi="Gemini2-at4">  <sch:title>Constraints</sch:title>  <sch:p>Constraints (Limitations on public access and use constraints) are required.</sch:p>  <sch:rule context="//gmd:MD\_Metadata[1]/gmd:identificationInfo[1]/\*[1]">  <sch:assert test="count(gmd:resourceConstraints) &gt;= 1">  AT-4: Limitations on public access and use constraints are required.  </sch:assert>  </sch:rule> </sch:pattern> |

## One creation date

### Error message

1. The shall not be more than one creation date.

### Context

1. CI\_Citation.date > CI\_Date.dateType
2. Note that, uniquely, the context is not based in MD\_Metadata. This assertion tests all CI\_Citation elements that occur in a metadata instance.

### Cause

1. This assertion fails if there is more than one date element with a date type of ‘creation’.

### Example – fail

|  |
| --- |
| <gmd:CI\_Citation>  ...  <gmd:date>  <gmd:CI\_Date>  <gmd:date>  <gco:Date>2003-02-17</gco:Date>  </gmd:date>  <gmd:dateType>  <gmd:CI\_DateTypeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode" codeListValue="creation">creation</gmd:CI\_DateTypeCode>  </gmd:dateType>  </gmd:CI\_Date>  </gmd:date>  <gmd:date>  <gmd:CI\_Date>  <gmd:date>  <gco:Date>2003-02-17</gco:Date>  </gmd:date>  <gmd:dateType>  <gmd:CI\_DateTypeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode" codeListValue="creation">creation</gmd:CI\_DateTypeCode>  </gmd:dateType>  </gmd:CI\_Date>  </gmd:date>  ...  </gmd:CI\_Citation> |

### Example – success

|  |
| --- |
| <gmd:CI\_Citation>  ...  <gmd:date>  <gmd:CI\_Date>  <gmd:date>  <gco:Date>2003-02-17</gco:Date>  </gmd:date>  <gmd:dateType>  <gmd:CI\_DateTypeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode" codeListValue="creation">creation</gmd:CI\_DateTypeCode>  </gmd:dateType>  </gmd:CI\_Date>  </gmd:date>  <gmd:date>  <gmd:CI\_Date>  <gmd:date>  <gco:Date>2003-02-17</gco:Date>  </gmd:date>  <gmd:dateType>  <gmd:CI\_DateTypeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO\_19139\_Schemas/resources/Codelist/gmxCodelists.xml#CI\_DateTypeCode" codeListValue="publication">publication</gmd:CI\_DateTypeCode>  </gmd:dateType>  </gmd:CI\_Date>  </gmd:date>  ...  </gmd:CI\_Citation> |

### Schematron rule

|  |
| --- |
| <sch:pattern fpi="Gemini2-at5">  <!-- metadata/2.0/req/common/max-1-date-of-creation -->  <sch:title>Creation date type</sch:title>  <sch:p>Constrain citation date type = creation to one occurrence.</sch:p>  <sch:rule context="//gmd:CI\_Citation |  //\*[@gco:isoType = 'gmd:CI\_Citation'][1]">  <sch:assert test="count(gmd:date/\*[1]/gmd:dateType/\*[1][@codeListValue = 'creation']) &lt;= 1">  AT-5: There shall not be more than one creation date.  </sch:assert>  </sch:rule>  </sch:pattern> Non-empty free text contentError message  1. Free text elements should not be empty  Context  1. MD\_Metadata.identificationInfo  Cause  1. A free text element such as gco:CharacterString or gmx:Anchor, shall have some meaningful content.  Example – fail <gmd:contact>  <gmd:CI\_ResponsibleParty>  <gmd:individualName gco:nilReason="missing">  **<gco:CharacterString/>**  </gmd:individualName>  <gmd:organisationName>  <gco:CharacterString>  Angus Council  </gco:CharacterString>  </gmd:organisationName> Example – pass <gmd:contact>  <gmd:CI\_ResponsibleParty>  **<gmd:individualName gco:nilReason="missing" />**  <gmd:organisationName>  <gco:CharacterString>  Angus Council  </gco:CharacterString>  </gmd:organisationName>  or  <gmd:contact>  <gmd:CI\_ResponsibleParty>  <gmd:organisationName>  <gco:CharacterString>  Angus Council  </gco:CharacterString>  </gmd:organisationName> Schematron rule <sch:pattern fpi="Gemini2-at6">  <sch:title>Non-empty free text content</sch:title>  <sch:p>Don't allow empty Free text gco:CharacterString or gmx:Anchor</sch:p>  <sch:rule context="//gco:CharacterString | //gmx:Anchor">  <sch:assert test="normalize-space(.)">  AT-6: Free text elements should not be empty  </sch:assert>  </sch:rule> </sch:pattern> One revision dateError message  1. There shall not be more than one revision date  Context  1. CI\_Citation.date > CI\_Date.dateType  Cause  1. This assertion fails if there is more than one date element with a date type of ‘revision’.  Example – fail <gmd:CI\_Citation>  ...  <gmd:date>  <gmd:CI\_Date>  <gmd:date>  <gco:Date>2003-02-17</gco:Date>  </gmd:date>  <gmd:dateType>  <gmd:CI\_DateTypeCode  codeList="gmxCodelists.xml#CI\_DateTypeCode"  codeListValue="revision" />  </gmd:dateType>  </gmd:CI\_Date>  </gmd:date>  <gmd:date>  <gmd:CI\_Date>  <gmd:date>  <gco:Date>2013-05-17</gco:Date>  </gmd:date>  <gmd:dateType>  <gmd:CI\_DateTypeCode  codeList="gmxCodelists.xml#CI\_DateTypeCode"  codeListValue="revision" />  </gmd:dateType>  </gmd:CI\_Date>  </gmd:date>  ...  </gmd:CI\_Citation> Example – pass <gmd:CI\_Citation>  ...  <gmd:date>  <gmd:CI\_Date>  <gmd:date>  <gco:Date>2003-02-17</gco:Date>  </gmd:date>  <gmd:dateType>  <gmd:CI\_DateTypeCode  codeList="gmxCodelists.xml#CI\_DateTypeCode"  codeListValue="publication" />  </gmd:dateType>  </gmd:CI\_Date>  </gmd:date>  <gmd:date>  <gmd:CI\_Date>  <gmd:date>  <gco:Date>2013-05-17</gco:Date>  </gmd:date>  <gmd:dateType>  <gmd:CI\_DateTypeCode  codeList="gmxCodelists.xml#CI\_DateTypeCode"  codeListValue="revision" />  </gmd:dateType>  </gmd:CI\_Date>  </gmd:date>  ...  </gmd:CI\_Citation> Schematron rule <sch:pattern fpi="metadata/2.0/req/common/max-1-date-of-last-revision">  <sch:title>Revision date type</sch:title>  <sch:p>Constrain citation date type = revision to one occurrence.</sch:p>  <sch:rule  context="//gmd:CI\_Citation | //\*[@gco:isoType = 'gmd:CI\_Citation'][1]">  <sch:assert test="count(gmd:date/\*[1]/gmd:dateType/\*[1][@codeListValue = 'revision']) &lt;= 1">  AT-7: There shall not be more than one revision date.  </sch:assert>  </sch:rule> </sch:pattern> |
| Legal ConstraintsError message  1. AT-8: There must be at least two Legal Constraints sections (gmd:resourceConstraints/gmd:MD\_LegalConstraints) in the metadata but we have (0 or 1). One section shall be provided to describe the "Limitations on public access" and another shall be provided to describe the "Conditions for access and use"  Context  1. …  Cause  1. There must be at least two Legal Constraints sections (gmd:resourceConstraints/gmd:MD\_LegalConstraints) in the metadata and the metadata has fewer than that. One section shall be provided to describe the "Limitations on public access" and another shall be provided to describe the "Conditions for access and use"  Example – fail …  </gmd:descriptiveKeywords>  <!-- At least two gmd:resourceConstraints sections are expected here --> <gmd:resourceConstraints xlink:title="Conditions">  <gmd:MD\_LegalConstraints>  <gmd:useConstraints>  <gmd:MD\_RestrictionCode codeList="gmxCodelists.xml#MD\_RestrictionCode" codeListValue="otherRestrictions"/>  </gmd:useConstraints>  <gmd:otherConstraints>  <gmx:Anchor xlink:href="#">Conditions apply</gmx:Anchor>  </gmd:otherConstraints>  </gmd:MD\_LegalConstraints> </gmd:resourceConstraints> <gmd:spatialRepresentationType>  … Example – pass …  </gmd:descriptiveKeywords> <!-- At least two gmd:resourceConstraints sections are expected here… --> <gmd:resourceConstraints xlink:title="Limitations">  <gmd:MD\_LegalConstraints>  <gmd:accessConstraints>  <gmd:MD\_RestrictionCode  codeList="gmxCodelists.xml#MD\_RestrictionCode"  codeListValue="otherRestrictions"/>  </gmd:accessConstraints>  <gmd:otherConstraints>  <gmx:Anchor xlink:href="http://inspire.ec.europa.eu/metadata-codelist/LimitationsOnPublicAccess/INSPIRE\_Directive\_Article13\_1e">  otherRestrictions  </gmx:Anchor>  </gmd:otherConstraints>  </gmd:MD\_LegalConstraints> </gmd:resourceConstraints> <gmd:resourceConstraints xlink:title="Conditions">  <gmd:MD\_LegalConstraints>  <gmd:useConstraints>  <gmd:MD\_RestrictionCode  codeList="gmxCodelists.xml#MD\_RestrictionCode"  codeListValue="otherRestrictions"/>  </gmd:useConstraints>  <gmd:otherConstraints>  <gmx:Anchor xlink:href="#">Conditions apply</gmx:Anchor>  </gmd:otherConstraints>  </gmd:MD\_LegalConstraints> </gmd:resourceConstraints> <gmd:spatialRepresentationType>  … Schematron rule <sch:pattern fpi="Gemini2-at8">  <sch:title>Legal Constraints</sch:title>  <sch:p>To satisfy INSPIRE TG Requirement C.18, there must be at least two gmd:resourceConstraints : md:MD\_LegalConstraints element blocks  One for "Limitations on public access" and the other for "Conditions for access and use". Applies to all metadata</sch:p>  <sch:rule context="//gmd:MD\_Metadata[1]/gmd:identificationInfo">  <sch:let name="legalCons" value="count(//gmd:MD\_Metadata[1]/gmd:identificationInfo/\*[1] /gmd:resourceConstraints/gmd:MD\_LegalConstraints)"/>  <sch:assert test="$legalCons &gt; 1">  AT-8: There must be at least two Legal Constraints sections (gmd:resourceConstraints/gmd:MD\_LegalConstraints) in the metadata but we have <sch:value-of select="$legalCons"/>.   One section shall be provided to describe the "Limitations on public access" and another shall be provided to describe the   "Conditions for access and use"  </sch:assert>  </sch:rule> </sch:pattern> |

# Appendix 1

#### Context expression

1. The context will be expressed in the following way:
2. ClassName.propertyName > ClassName.propertyName
3. For example:
4. MD\_Metadata.identificationInfo > MD\_DataIdentification



Figure 1 – Context expression for fileIdentifier

1. Figure 1 is an attempt to show how the context expression signifies the structure in XML and ISO 19115 UML classes. In this case the context is the fileIdentifier property of the class MD\_Metadata. The red and blue lines indicate how the XML elements on the left are represented in a UML class diagram, which is a simplified view of ISO 19115. Below is the corresponding context expression.
2. An example which resolves to a deeper level is shown in Figure 2. The context is the class MD\_DataIdentification. This class is the type of the identificationInfo property of the class MD\_Metadata. The context expression resolves to MD\_Metadata.identificationInfo > MD\_DataIdentification.
3. The class MD\_DataIdentification is a sub-type of the class MD\_Identification. The class SV\_ServiceIdentification is also a sub-type of the class MD\_Identification. The corresponding XML may, as a result, exhibit either an element named gmd:MD\_DataIdentification (for dataset or series metadata) or an element named srv:SV\_ServiceIdentification (for service metadata), as an element of gmd:identificationInfo. Both sub-type classes inherit properties of the class MD\_Identification. The property descriptiveKeywords, for example, is inherited by both. So, descriptive keywords may occur in the context:
4. MD\_Metadata.identificationInfo > MD\_DataIdentification
5. or
6. MD\_Metadata.identificationInfo > SV\_ServiceIdentification
7. In this and similar cases, the context expression will show both cases.
8. Incidentally, the element gmd:MD\_Identification can never appear in XML because it is an abstract type. Abstract types can never be instantiated.
9. Figure 3 shows the context expression diagrammatically.



Figure 2 – Context expression for MD\_DataIdentification



Figure 3 – Context for MD\_Identification

# Appendix 2

#### Schematron pattern

1. A rule in a Schematron schema contains an unordered collection of assertions. An assertion is a statement that a logical test is true. An assertion either succeeds or fails. If, during a validation process, one or more assertions in a Schematron schema fails, the XML instance being validated is said to be invalid with respect to the Schematron schema.
2. A rule has a context. The context defines where, in the hierarchy of an XML instance, the assertions contained in the rule will fire. The context is expressed using XPath. For example, the context for the Keyword rule is:
3. /\*[1]/gmd:identificationInfo[1]/\*[1]
4. The declaration [1] in the XPath indicates that the first child element in the tree is tested. There may be more than one gmd:identificationInfo element in a metadata instance, but for the purposes of GEMINI and INSPIRE, only the first is considered. However, there can only be one parent of gmd:identificationInfo, and it can contain only one child element, so the other [1] declarations may seem superfluous. These were added to the Schematron schema because GeoNetwork inserts other child elements to XML as part of its internal validation processes. The [1] declarations prevent these from being assessed by the Schematron schema and causing irrelevant errors. In terms of ISO 19115 classes and properties, the XPath can be expressed as:
5. MD\_Metadata.identificationInfo > MD\_Identification
6. Any assertion listed in the Keyword rule will fire only in the context of the MD\_Identification class. This is reasonable because keywords in ISO 19115 are found as a property of MD\_Identification.
7. An assertion has a test. The test must evaluate to true for an assertion to succeed. The Keyword rule has only one assertion and the test, expressed in XPath again, is:
8. count(gmd:descriptiveKeywords) &gt;= 1
9. This is how it is expressed in the Schematron schema. The characters ‘&gt;’ are a way of writing the ‘>’ character in XML. This character is reserved in XML because it is part of the element name notation so a means of showing that we really do mean the character ‘>’ and not the end of an XML element name is needed. Other escape sequences, as these sets of characters are known, in use in the Schematron schema are ‘&amp;’ for the character ‘&’ and ‘&lt;’ for the character ‘<’.
10. In natural language, this test means that the count of gmd:descriptiveKeywords elements [in the context of MD\_Metadata.identificationInfo > MD\_Identification] must be greater than or equal to one.
11. Put simply, Keywords is a mandatory element in GEMINI and must occur at least once in a metadata instance.
12. An assertion also has a value. In the case of Keywords, the value is:
13. Descriptive keywords are mandatory
14. This text appears in the Schematron schema output if the assertion fails, that is to say that the metadata instance being validated has no gmd:descriptiveKeywords elements.
15. The Schematron pattern for Keywords is shown below.

|  |
| --- |
| <sch:pattern fpi="Gemini2-mi6">  <sch:title>Keyword</sch:title>  <sch:rule context="/\*[1]/gmd:identificationInfo[1]/\*[1]">  <sch:assert test="count(gmd:descriptiveKeywords) &gt;= 1">  Descriptive keywords are mandatory.  </sch:assert>  </sch:rule>  </sch:pattern> |

1. See http://www.w3schools.com/xml/xml\_whatis.asp

   [↑](#footnote-ref-1)