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**AMENDMENT 1**  
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**Geographic information —  
Metadata —**

**Part 1:  
Fundamentals**

**AMENDMENT 1**

*Information géographique — Métadonnées —*

*Partie 1: Principes de base*

*AMENDEMENT 1*

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This document was prepared by Technical Committee ISO/TC 211, *Geographic information/Geomatics*.

A list of all parts in the ISO 19115 series can be found on the ISO website.

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# Geographic information — Metadata —

## Part 1: Fundamentals

### AMENDMENT 1

*Page 2, Clause 3*

Add “ISO 19115-2:2018, *Geographic information — Metadata — Part 2: Extensions for acquisition and processing*”.

*Page 2, Clause 3*

Change:

ISO 4217:2008, *Codes for the representation of currencies and funds*

to

ISO 4217:2015, *Codes for the representation of currencies*

*Page 2, Clause 3*

Change:

ISO/TS 19103:2005

to

ISO 19103:2015

in Clauses 3 and 4.

*Page 2, Clause 3*

Change:

ISO 19109:2005

to

ISO 19109:2015

*Page 2, Clause 3*

Change:

ISO 19110:2005

to

ISO 19110:2016

*Page 2, Clause 3*

## ISO 19115-1:2014/Amd.1:2018(E)

Change:

ISO 19119:2005

to

ISO 19119:2016

in Clause 3 and throughout the document (except for in the Introduction and Annex G).

*Page 3, 4.2*

Change:

[SOURCE: ISO/TS 19103:2005, 4.1.5]

to

[SOURCE: ISO 19103:2015, 4.14]

*Page 4, 4.14*

Change:

[SOURCE: ISO 19109:2005, 4.14]

to

[SOURCE: ISO 19109:2015, 4.15]

*Page 5, 5.2*

Change:

PT (Polylinguistic Text (ISO/TS 19103))

to

PT (Polylinguistic Text (ISO 19115-1))

*Page 16, 6.5.7*

Replace Figure 11 with the following:

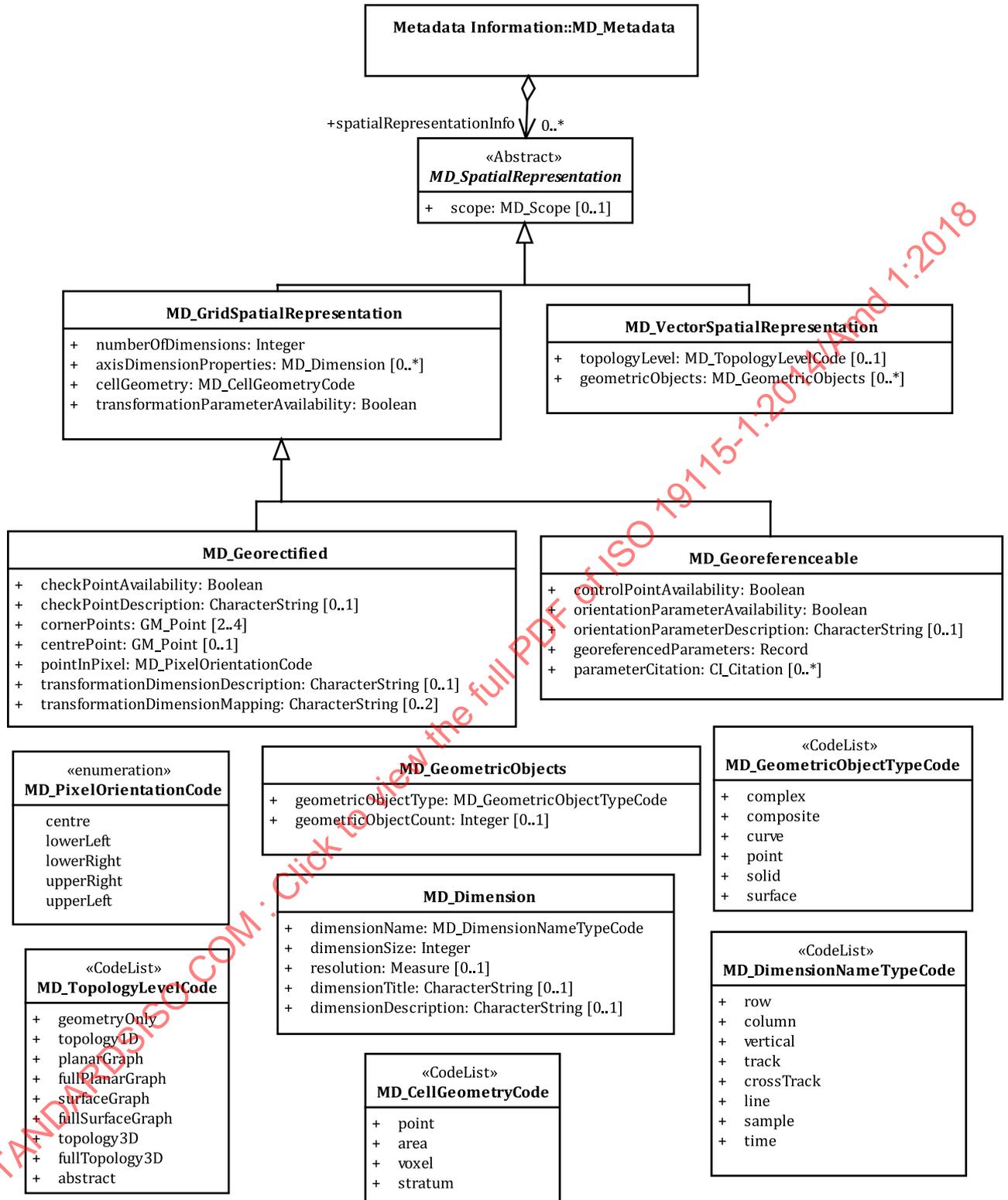


Figure 11 — Spatial representation information classes

Replace Figure 13 with the following:

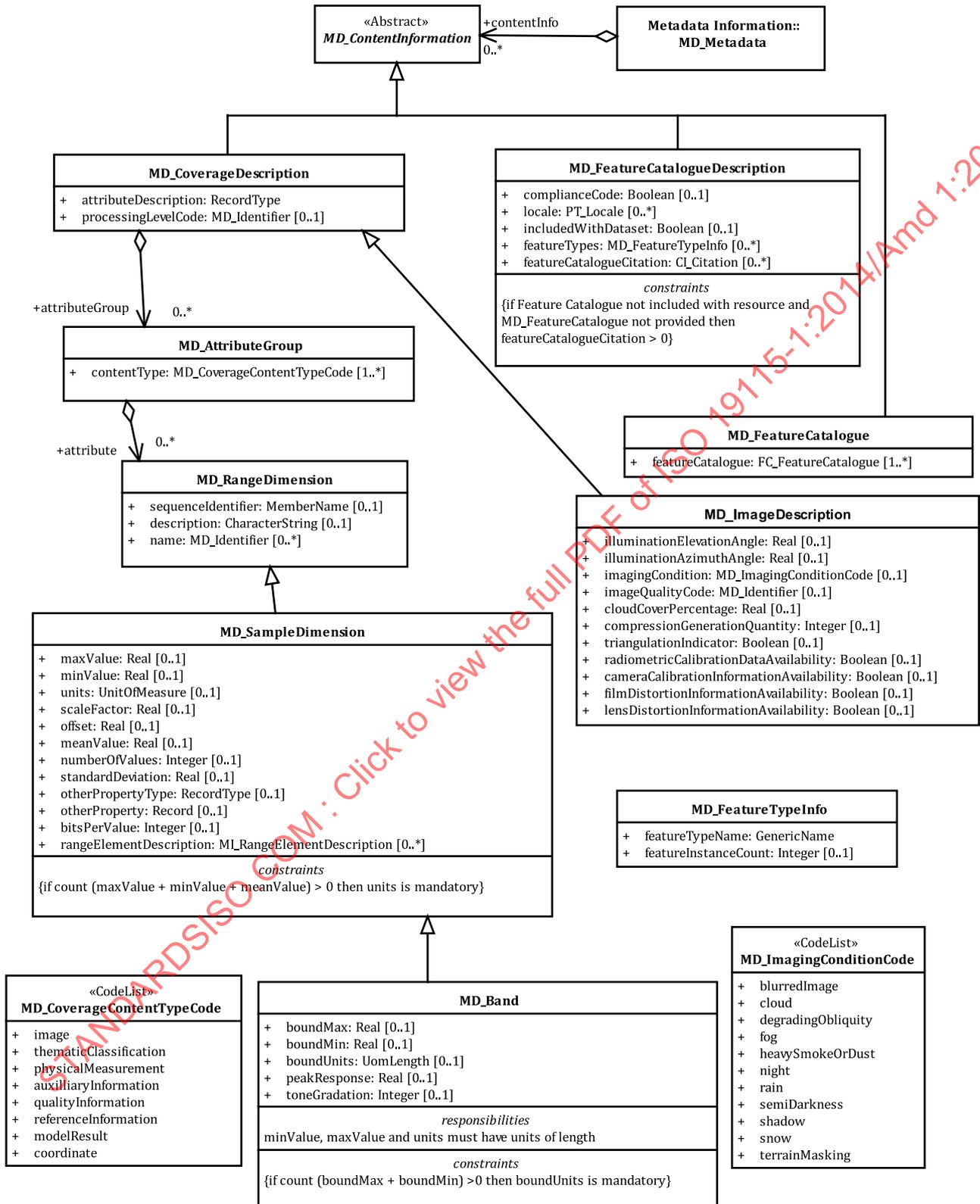


Figure 13 — Content information classes

Replace Figure 20 with the following:

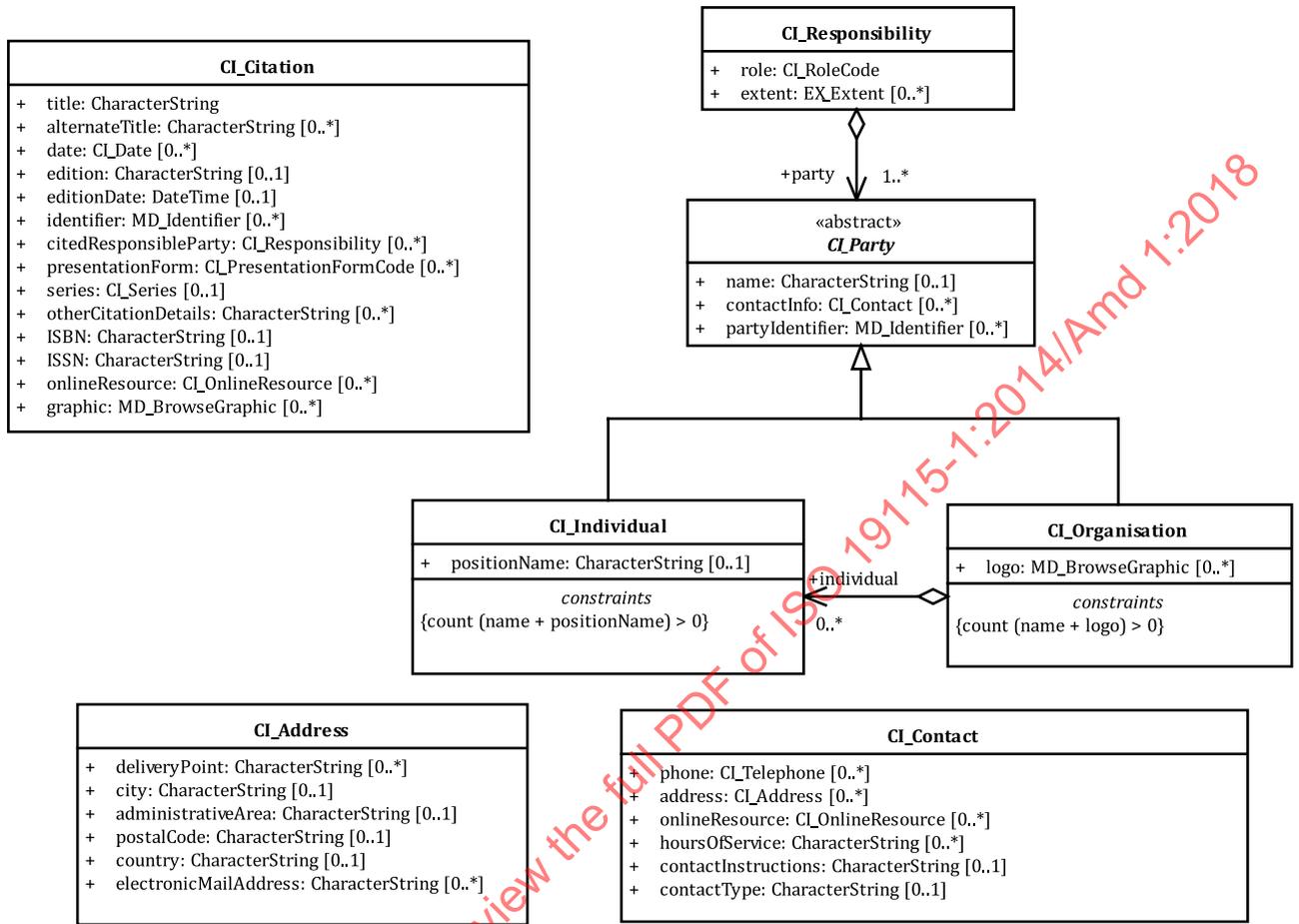


Figure 20 — Citation and responsible party information classes

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Replace Table B.7 with the following:

**Table B.7 — Spatial representation information (includes grid and vector representation)**

|       | Name/Role Name                       | Definition  | Obligation/Condition                                    | Maximum occurrence*                                   | Data type  | Domain                                       |
|-------|--------------------------------------|---|---|---|--|--|
| 147.  | <b>MD_Spatial Representation</b>     | <b>Digital mechanism used to represent spatial information</b>  | <b>Use obligation/condition from referencing object</b> | <b>Use maximum occurrence from referencing object</b> | <b>Aggregated Class (MD_Metadata) &lt;&lt;Abstract&gt;&gt;</b> |  |
| 147-1 | scope                                | Level and extent of the spatial representation  | 0   | 1   | Class  | MD_Scope<br><<DataType>><br>(B17)            |
| 148.  | <b>MD_GridSpatial Representation</b> | <b>Information about grid spatial objects in the resource</b>   | <b>Use obligation/condition from referencing object</b> | <b>Use maximum occurrence from referencing object</b> | <b>Specified Class (MD_Spatial Representation)</b>             | <b>Lines 147-1 and 149-152</b>               |
| 149.  | numberOfDimensions                   | Number of independent spatial-temporal axes   | M   | 1   | Integer  | Integer                                      |
| 150.  | axisDimensionProperties              | Information about spatial-temporal axis properties  | M   | N   | Sequence (B.4.6)   | MD_Dimension<br><<DataType>> (B.2.7.2)       |
| 151.  | cellGeometry                         | Identification of grid data as point or cell  | M   | 1   | Class  | MD_CellGeometryCode<br><<CodeList>> (B.5.12) |
| 152.  | TransformationParameterAvailability  | Indication of whether or not parameters for transformation between image coordinates and geographic or map coordinates exist (are available)  | M   | 1   | Boolean  | 0 = no<br>1 = yes                            |
| 153.  | <b>MD_Georectified</b>               | <b>Grid whose cells are regularly spaced in a geographic (i.e. lat / long) or map coordinate system defined in the Spatial Referencing System (SRS) so that any cell in the grid can be geolocated given its grid coordinate and the grid origin, cell spacing, and orientation</b> | <b>Use obligation/condition from referencing object</b> | <b>Use maximum occurrence from referencing object</b> | <b>Specified (MD_GridSpatial Representation)</b>               | <b>Lines 147-1, 149-152 and 154-160</b>      |

Table B.7 (continued)

|      | Name/Role Name                       | Definition   | Obligation/Condition                    | Maximum occurrence* | Data type           | Domain  |
|------|--------------------------------------|--|---|---------------------|---------------------|---|
| 154. | Checkpoint Availability              | Indication of whether or not geographic position points are available to test the accuracy of the georeferenced grid data  | M                                       | 1                   | Boolean             | 0 = no<br>1 = yes                                   |
| 155. | Checkpoint Description               | Description of geographic position points used to test the accuracy of the georeferenced grid data   | C /<br>Checkpoint Availability = "yes"? | 1                   | CharacterString     | Free text   |
| 156. | cornerPoints                         | Earth location in the coordinate system defined by the Spatial Reference System and the grid coordinate of the cells at opposite ends of grid coverage along two diagonals in the grid spatial dimensions. There are four corner points in a georectified grid; at least two corner points along one diagonal are required. The first corner point corresponds to the origin of the grid | 0                                       | 2 - 4               | Sequence<br>(B.4.6) | GM_Point<br><<Type>> (B.4.5)                        |
| 157. | centrePoint                          | Earth location in the coordinate system defined by the Spatial Reference System and the grid coordinate of the cell halfway between opposite ends of the grid in the spatial dimensions  | 0                                       | 1                   | Class               | GM_Point<br><<Type>> (B.4.5)                        |
| 158. | pointInPixel                         | Point in a pixel corresponding to the Earth location of the pixel  | M                                       | 1                   | Class               | MD_PixelOrientationCode<br><<Enumeration>> (B.5.24) |
| 159. | Transformation Dimension Description | General description of the transformation  | 0                                       | 1                   | CharacterString     | Free text   |
| 160. | Transformation Dimension Mapping     | Information about which grid axes are the spatial (map) axes   | 0                                       | 2                   | CharacterString     | Free text   |

Table B.7 (continued)

|      | Name/Role Name                     | Definition   | Obligation/Condition                             | Maximum occurrence*                            | Data type                                       | Domain   |
|------|------------------------------------|--|--|--|---|--|
| 161. | MD_Georeferenceable                | Grid with cells irregularly spaced in any given geographic/map projection coordinate system, whose individual cells can be geolocated using geolocation information supplied with the data but cannot be geolocated from the grid properties alone | Use obligation/condition from referencing object | Use maximum occurrence from referencing object | Specified Class (MD_GridSpatial Representation) | Lines 147-1, 149-152 and 162-166               |
| 162. | controlPoint Availability          | Indication of whether or not control point(s) exists   | M  | 1  | Boolean   | 0 = no<br>1 = yes                              |
| 163. | Orientation Parameter Availability | Indication of whether or not orientation parameters are available  | M  | 1  | Boolean   | 0 = no<br>1 = yes                              |
| 164. | Orientation Parameter Description  | Description of parameters used to describe sensor orientation  | 0  | 1  | CharacterString                                 | Free text                                      |
| 165. | Georeferenced Parameters           | Terms which support grid data georeferencing   | M  | 1  | Class   | Record (B.4.3)                                 |
| 166. | parameterCitation                  | Reference providing description of the parameters  | 0  | N  | Class   | CI_Citation (B.3.2)                            |
| 167. | MD_VectorSpatial Representation    | Information about the vector spatial objects in the resource   | Use obligation/condition from referencing object | Use maximum occurrence from referencing object | Specified Class (MD_Spatial Representation)     | Lines 147-1 and 168-169                        |
| 168. | topologyLevel                      | Code which identifies the degree of complexity of the spatial relationships  | 0  | 1  | Class   | MD_TopologyLevelCode<br><<CodeList>> (B.5.31)  |
| 169. | geometricObjects                   | Information about the geometric objects used in the resource   | 0  | N  | Class   | MD_Geometric Objects<br><<DataType>> (B.2.7.3) |

NOTE The UML model for this table is shown in Figure 11.

Page 65 and 66, B.1.7

Replace Table B.9.2 with the following:

Table B.9.2 — Range dimension information (includes Band information)

|      | Name/Role Name            | Definition   | Obligation/Condition                                    | Maximum occurrence*                                   | Data type   | Domain   |
|------|---------------------------|--|---|---|---|--|
| 210. | <b>MD_RangeDimension</b>  | <b>Information on the range of attribute values</b>  | <b>Use obligation/condition from referencing object</b> | <b>Use maximum occurrence from referencing object</b> | <b>Aggregated Class (MD_Coverage Description)</b> | <b>Lines 211-213</b>   |
| 211  | sequenceIdentifier        | Unique name or number that identifies attributes included in the coverage  | 0   | 1   | Class   | MemberName (B.2.7)   |
| 212. | description               | Description of the attribute   | 0   | 1   | CharacterString                                   | Free text  |
| 213. | name                      | Identifiers for each attribute included in the resource<br><br>NOTE These identifiers can be used to provide names for the attribute from a standard set of names.   | 0   | N   | Class   | MD_Identifier (B.17.2)   |
| 214. | <b>MD_SampleDimension</b> | <b>The characteristics of each dimension (layer) included in the resource</b>  | <b>Use obligation/condition from referencing object</b> | <b>Use maximum occurrence from referencing object</b> | <b>Specified Class (MD_RangeDimension)</b>        | <b>Lines 211-213 and 215-225</b>                                       |
| 215. | maxValue                  | Maximum value of data values in each dimension included in the resource<br><br>NOTE Restricted to uomLength in the MD_Band class.                                    | 0   | 1   | Real  | real number  |
| 216. | minValue                  | Minimum value of data values in each dimension included in the resource<br><br>NOTE Restricted to uomLength in the MD_Band class.                                    | 0   | 1   | Real  | real number  |
| 217. | units                     | Units of data in each dimension included in the resource<br><br>NOTE The type of this is UnitsOfMeasure and that it is restricted to uomLength in the MD_Band class. | C / minValue, maxValue or meanValue provided?           | 1   | Class   | UnitsOfMeasure (B.2.3)<br>restricted to uomLength in the MD_Band class |
| 218. | scaleFactor               | Scale factor which has been applied to the cell value  | 0   | 1   | Real  | real number  |

Table B.9.2 (continued)

|       | Name/Role Name          | Definition  | Obligation/Condition                                    | Maximum occurrence*                                   | Data type                                   | Domain  |
|-------|-------------------------|---|---|---|---|---|
| 219.  | offset                  | The physical value corresponding to a cell value of zero  | 0   | 1   | Real  | real number   |
| 220.  | meanValue               | Mean value of data values in each dimension included in the resource  | 0   | 1   | Real  | real number   |
| 221.  | numberOfValues          | The number of values used in a thematicClassification resource<br><br>EXAMPLE The number of classes in a Land Cover Type coverage or the number of cells with data in other types of coverages. | 0   | 1   | Integer                                     | Number  |
| 222.  | standardDeviation       | Standard deviation of data values in each dimension included in the resource  | 0   | 1   | Real  | real number   |
| 223.  | otherPropertyType       | Type of other attribute description (i.e. netcdf/variable in ncml.xsd)  | 0   | 1   | Class                                       | RecordType (B.2.3)                                      |
| 224.  | otherProperty           | Instance of otherAttributeType that defines attributes not explicitly included in MD_CoverageType   | 0   | 1   | Class                                       | Record (B.2.3)  |
| 225.  | bitsPerValue            | Maximum number of significant bits in the uncompressed representation for the value in each band of each pixel  | 0   | 1   | Integer                                     | number  |
| 225.1 | rangeElementDescription | Provides definitions and values for range elements such as missing data or other flags associated with an MD_SampleDimension  | 0   | N   | Class                                       | MI_RangeElementDescription (ISO19115-2:2018 Table B.28) |
| 226.  | MD_Band                 | <b>Range of wavelengths in the electromagnetic spectrum</b>   | <b>Use obligation/condition from referencing object</b> | <b>Use maximum occurrence from referencing object</b> | <b>Specified Class (MD_SampleDimension)</b> | <b>Lines 211-213, 215-225 and 227-231</b>               |