

Scope

Overview

The MD_ScopeCode element is used to specify context for the resource the metadata is describing. This context may pertain to the type of complete resource (dataset, service, series, etc), to specific data processing sources and applications utilized to create the complete resource (ancillary data, models, software, etc), to quality report types for assessing aspects of the resource (feature, attribute, sensor etc), and to the frequency of maintenance for a resource (dataset) and/or for the metadata

Recommendations for ISO 19115 and 19115-1

ISO 19115 scope codes are used to provide scope context for complete records, quality reports, and maintenance information. The xpaths to these scope code elements are listed in the table below. ISO 19115-1 adds additional scope code elements for resource lineage and metadata constraints.

ISO 19115	/gmi:MI_Metadata/gmd:hierarchyLevel/gmd:MD_ScopeCode /gmi:MI_Metadata/gmd:dataQualityInfo/gmd:DQ_DataQuality/gmd:scope/gmd:DQ_Scope/gmd:level/gmd:MD_ScopeCode /gmi:MI_Metadata/gmd:metadataMaintenance/gmd:MD_MaintenanceInformation/gmd:updateScope/gmd:MD_ScopeCode
ISO 19115-1	/mdb:MD_Metadata/mdb:metadataScope/mdb:MD_MetadataScope/mdb:resourceScope/mcc:MD_ScopeCode /mdb:MD_Metadata/mdb:dataQualityInfo/mdq:DQ_DataQuality/mdq:scope/mcc:MD_Scope/mcc:level/mcc:MD_ScopeCode /mdb:MD_Metadata/mdb:metadataMaintenance/mmi:MD_MaintenanceInformation/mmi:maintenanceScope/mcc:MD_Scope/mcc:level/mcc:MD_ScopeCode

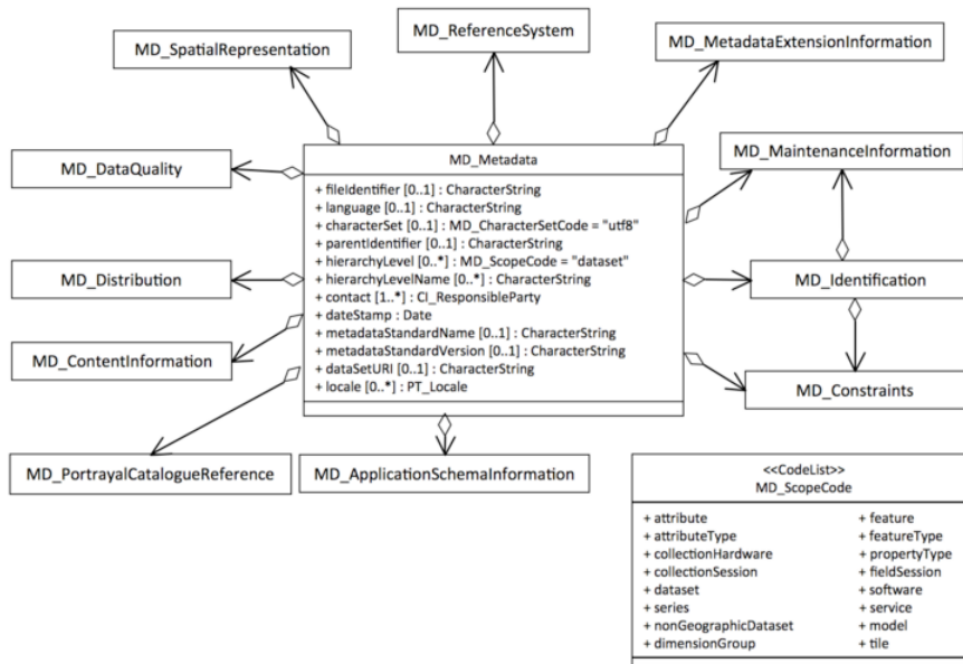
Conceptual Model (UML)

The metadata universe has traditionally been classified into bins for collection level, catalog level, and granule level metadata (or some other similar classification scheme). It is not unusual for each of these levels to require a different approach to metadata and tool development. Many systems have been developed that are focused on a single "level" of documentation.

The ISO 19115 standard changes this picture by including a ScopeCode in each metadata record. This code describes what the metadata actually applies to and it can have many values: attribute, attributeType, collectionHardware, collectionSession, dataset, series, nonGeographicDataset, dimensionGroup, feature, featureType, propertyType, fieldSession, software, service, model, and tile (see Figure).

The name of the scopeCode, hierarchyLevel, implies a hierarchical structure for the metadata. This may not be appropriate in all cases. It is probably beneficial to think more in terms of a traditional scope concept than a hierarchy level in this case.

Note: ISO 19115-1 replaces the hierarchyLevel and hierarchyLevelName elements with the metadataScope element. The grouping of these two elements into metadataScope reduces the ambiguity that occurs when multiple hierarchyLevel and hierarchyLevelName elements exists. The MD_ScopeCode list is also extended with ten additional values.



Implementation (XML) - Metadata Scope

```

<gmd:hierarchyLevel>
<gmd:MD_ScopeCode codeList="http://www.isotc211.org/2005/resources/CodeList/gmxCodeLists.xml#MD_ScopeCode"
codeListValue="dataset">dataset</gmd:MD_ScopeCode>
</gmd:hierarchyLevel>
or
<gmd:hierarchyLevel>
<gmd:MD_ScopeCode codeList="http://www.isotc211.org/2005/resources/CodeList/gmxCodeLists.xml#MD_ScopeCode"
codeListValue="series">series</gmd:MD_ScopeCode>
</gmd:hierarchyLevel>
or
<gmd:hierarchyLevel>
<gmd:MD_ScopeCode codeList="http://www.isotc211.org/2005/resources/CodeList/gmxCodeLists.xml#MD_ScopeCode"
codeListValue="service">service</gmd:MD_ScopeCode>
</gmd:hierarchyLevel>

```

Implementation (XML) - Data Quality Scope

```

<gmd:DQ_DataQuality>
  <gmd:scope>
    <gmd:DQ_Scope>
      <gmd:level>
        <gmd:MD_ScopeCode codeList="codeListLocation#MD_ScopeCode"
          codeListValue="fieldSession">fieldSession</gmd:MD_ScopeCode>
        </gmd:level>
      <gmd:extent>
        <gmd:EX_Extent id="Zambia.boundingGeographicBoundingBox">
          <gmd:description>
            <gco:CharacterString>Zambia.boundingGeographicBoundingBox</gco:CharacterString>
          </gmd:description>
          <gmd:geographicElement>
            <gmd:EX_GeographicBoundingBox>
              <gmd:extentTypeCode>
                <gco:Boolean>1</gco:Boolean>
              </gmd:extentTypeCode>
              <gmd:westBoundLongitude>
                <gco:Decimal>23.19258</gco:Decimal>
              </gmd:westBoundLongitude>
              <gmd:eastBoundLongitude>
                <gco:Decimal>23.31258</gco:Decimal>
              </gmd:eastBoundLongitude>
              <gmd:southBoundLatitude>
                <gco:Decimal>-15.493425</gco:Decimal>
              </gmd:southBoundLatitude>
              <gmd:northBoundLatitude>
                <gco:Decimal>-15.373425</gco:Decimal>
              </gmd:northBoundLatitude>
            </gmd:EX_GeographicBoundingBox>
          </gmd:geographicElement>
          <gmd:temporalElement>
            <gmd:EX_TemporalExtent>
              <gmd:extent>
                <gml:TimePeriod gml:id="timeID">
                  <gml:beginPosition>2007-01-01T00:00:00Z</gml:beginPosition>
                  <gml:endPosition>2007-12-31T00:00:00Z</gml:endPosition>
                </gml:TimePeriod>
              </gmd:extent>
            </gmd:EX_TemporalExtent>
          </gmd:temporalElement>
        </gmd:EX_Extent>
      </gmd:extent>
    <gmd:levelDescription>
      <gmd:MD_ScopeDescription>
        <gmd:other>
          <gco:CharacterString>Zambia field study 2007</gco:CharacterString>
        </gmd:other>
      </gmd:MD_ScopeDescription>
    </gmd:levelDescription>
  </gmd:DQ_Scope>
</gmd:scope>
<gmd:report/>
<gmd:lineage/>
</gmd:DQ_DataQuality>

```

Usage

Usage	Description and Xpath
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Metadata Scope MD_Metadata + fileIdentifier [0..1] : CharacterString + language [0..1] : CharacterString + characterSet [0..1] : MD_CharacterSetCode = "utf8" + parentIdentifier [0..1] : CharacterString + hierarchyLevel [0..*] : MD_ScopeCode = "dataset" + hierarchyLevelName [0..*] : CharacterString + contact [1..*] : CI_ResponsibleParty + dateStamp : Date + metadataStandardName [0..1] : CharacterString + metadataStandardVersion [0..1] : CharacterString + dataSetURI [0..1] : CharacterString + locale [0..*] : PT_Locale	The ScopeCode in the MD/MI_Metadata describes what the entire metadata record applies to. The default value for this code is "dataset". Below examples of other possible scopeCode values. • dimensionGroup: This code can be used in Forecast Model Run Collections to identify a group of layers that share the same dimensions. • series: The ISO Standard includes the capability to describe dataset aggregates or series. In this case the seriesMetadata would have hierarchyLevel="series". • service: The ISO 19119 Standard that describes services shares the MD/MI_Metadata object with 19115. Service metadata includes information about the service and references to the datasets it serves. If the primary purpose of the metadata record is to describe the service, it makes sense for the hierarchyLevel to be "service". /gmd:MD_Metadata/gmd:hierarchyLevel/gmd:MD_ScopeCode
Data Quality Scope DQ_Scope +level: MD_ScopeCode +extent [0..1]: EX_Extent +levelDescription [0..1]: MD_ScopeDescription	The ScopeCode in DQ_Scope is used to define the type and/or extent of the quality report or lineage. Note: ISO 19115 -1 removes lineage content from the DQ_DataQuality and adds it to a new section called resourceLineage. /gmd:MD_Metadata/gmd:dataQualityInfo/gmd:DQ_DataQuality/gmd:scope/gmd:DQ_Scope/gmd:level /gmd:MD_ScopeCode
Maintenance Scope MD_MaintenanceInformation +level: MD_ScopeCode + maintenanceAndUpdateFrequency: MD_MaintenanceFrequencyCode + dateOfNextUpdate [0..1]: Date + userDefinedMaintenanceFrequency [0..1]: TM_PeriodDuration + updateScope [0..*] : MD_ScopeCode + updateScopeDescription [0..*] : MD_ScopeDescription + maintenanceNote [0..*] : CharacterString + contact [0..*] : CI_ResponsibleParty	The ScopeCode in MD_MaintenanceInformation is used to define the scope of data in which maintenance is applied. /gmd:MD_Metadata/gmd:metadataMaintenance/gmd:MD_MaintenanceInformation/gmd:updateScope/gmd:MD_ScopeCode

19115-1 Revisions

19115	19115-1	Comments
//gmd:hierarchyLevel //gmd:MD_ScopeCode //gmd:hierarchyLevelName/gco:CharacterString	//mdb:metadataScope/mdb:MD_MetadataScope/mdb:resourceScope/mcc:MD_ScopeCode mdb:metadataScope/mdb:MD_MetadataScope/mdb:name/gco:CharacterString	ISO 19115 included any number of hierarchyLevels and hierarchyLevelNames. In cases with multiple occurrences of each, it was impossible to associate a given hierarchyLevel with the correct hierarchyLevelName. ISO 19115-1 addresses this ambiguity with the MD_MetadataScope object that unambiguously associates a MD_ScopeCode and the correct name.
N/A	//MD_Constraints/mco:constraintApplicationScope/mcc:MD_Scope	ISO 19115-1 adds new element (constraintApplicationScope) in order to allow the description of constraints on a resource that varies in space and/or time and/or level.
N/A	//mrl:LI_Lineage/mrl:scope/mcc:MD_Scope	ISO 19115-1 adds an MD_Scope object to LI_Lineage in order to document the type of resource and/or extent to which the lineage information applies.
N/A	//mrl:LI_Source/mrl:scope/mcc:MD_Scope	ISO 19115-1 adds an MD_Scope object to LI_Source in order to document the type of resource and/or extent to which the source information applies.
N/A	//mrl:LI_ProcessStep/mrl:scope/mcc:MD_Scope	ISO 19115-1 adds an MD_Scope object to LI_ProcessStep in order to document the type of resource and/or extent to which the process step information applies.

N/A	//mdq:DQ_DataQuality/mdq:report/* /mdq:result/*/mdq:resultScope/mdq: DQ_Scope	ISO 19115-1 adds an DQ_Scope object to document the results scope of a data quality report.
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