

08-Jul-03

This is the README page relating to a spreadsheet file named **ISO-FGDC-METADATA-CROSSWALK-V4**. The purpose of this file is to document proposed equivalency between spatial metadata content elements defined in the FGDC Metadata Standard (FGDC-STD-001-1998) and the ISO-19115 Metadata Standard (ISO 19115:2003(E)).

BACKGROUND:

FGDC metadata practitioners have been examining drafts of the proposed ISO standard for several years. In doing so, they sought to understand how each FGDC content element could be most logically "converted" to one or more ISO-19115 metadata elements. Because many ISO-19115 elements were derived from the FGDC standard, the relationships appear unambiguous. For other elements, however, a conversion or "crosswalk" is not obvious. This (Version 4) of this spreadsheet results from reviews of earlier versions, culminating in a

- Review the existing Crosswalk documents
- Fill in all the No Match elements
- Confirm the crosswalked elements defined to date

This spreadsheet analysis of the "crosswalk" is the result of their efforts.

PURPOSE:

This spreadsheet is intended to facilitate the broader public review of the the metadata content elements, and proposed logic for "crosswalking" FGDC metadata content into an ISO-compliant metadata implementation. This spreadsheet IS NOT a proposed standard, and is distributed for the sole purpose of soliciting comments and suggestions on crosswalk logic. FGDC will review all comments and, in concert with other standards bodies, will initiate a

WHAT YOU CAN DO:

If you have questions or suggestions about the content of this spreadsheet, please consult the INTRODUCTION tab, and the GUIDELINES FOR COMMENTS tab. Note that suggestions and questions must be submitted by 1-September 2003 in order to be considered in the next

FGDC - ISO Crosswalk v4.0

Elements changed in this version are in green.

The first tab following this Introduction is a master "Crosswalk" from FGDC to ISO elements, updated 11-June-2003.

The "Open Items" tab is a list of those items which require further discussion & consensus disposition.

The next ten tabs of this spreadsheet provide detail for each of the 7 major FGDC sections, and the 3 supporting sections.

The next two tabs are the source DTDs for this crosswalk:
[FGDC Metadata DTD 3.0.1 19990611](#)
[ISO Metadata DTD \(revised\) -- for reference only. A more robust XML schema under development will supplant this document \(ISO-19139\).](#)

The next tab is a table of elements from the ISO-19108 standard, which is referenced from the "Time Information" tab.

The next tab is a table of elements from the ISO-19110 standard, which is referenced from the "Entity-Attribute" tab.

The next tab is a table of elements from the ISO-19111 standard.

The next tab contains explanatory Notes.

The "V4 changes" tab itemizes all changes in Xwalk content suggested by a review team in April 2003.

The final two tabs provide Guidelines for submitting comments and questions about this file, and a template for doing so.

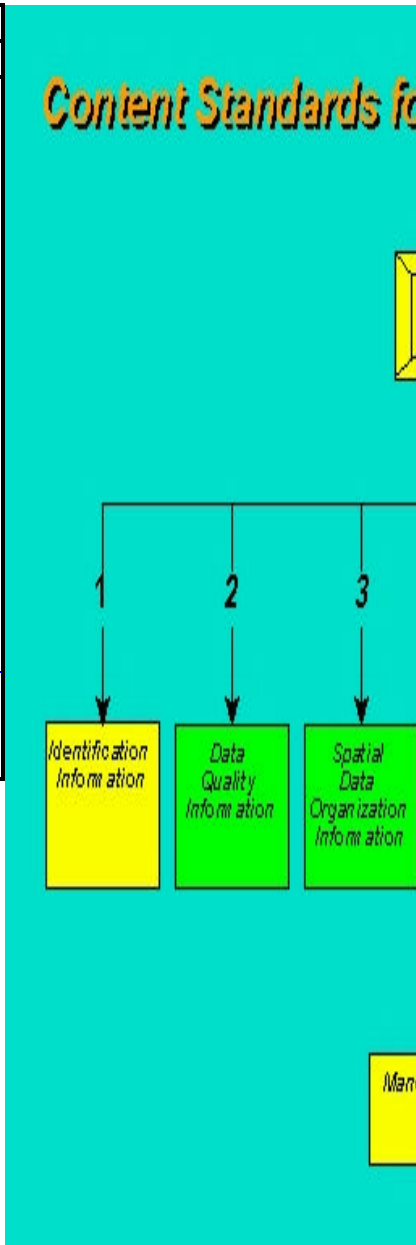


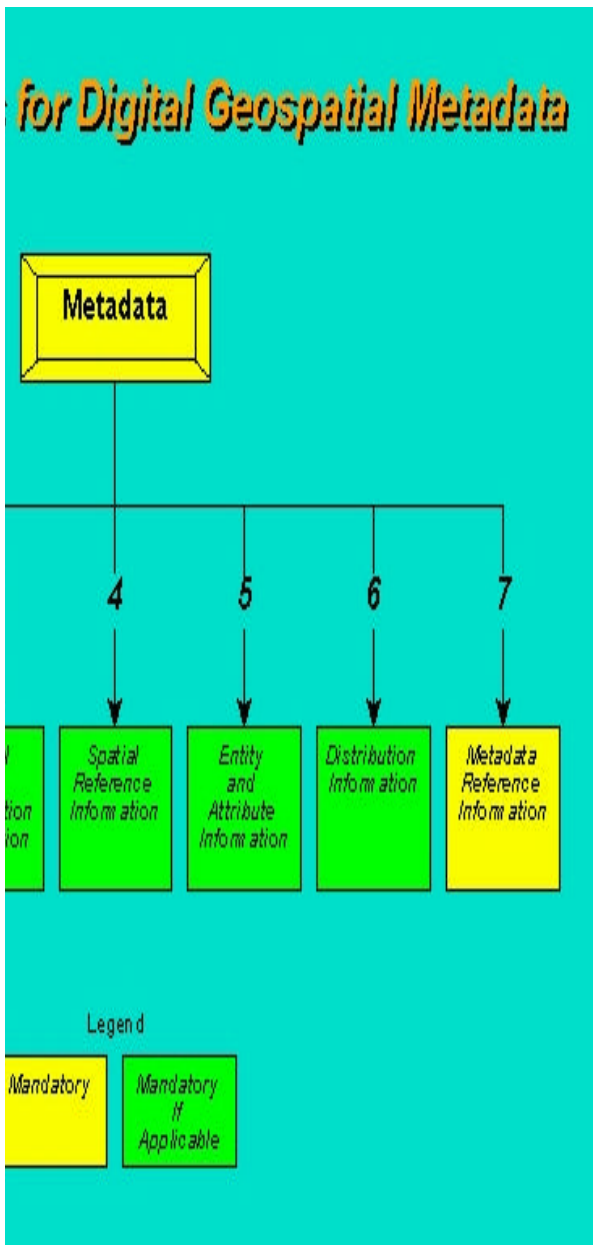
Fig.1 (right) is FGDC metadata; Fig.2 (below) is ISO metadata

Sources and credits: The intent of this document is to mirror the crosswalk document prepared and updated by **Shawn Silkensen** (shawn.m.silkensen@lmco.com) **17-Apr-02** -- see the **Xwalk** tab. Shawn's work and comments provided by **Barry Schlesinger** (bschlesi@rattler-e.gsfc.nasa.gov) have been invaluable. So were the review and contributions made by Sharon Shin (FGDC Metadata Coordinator) and a review committee including Dave Danko (ESRI), Kim Owen (NOAA), and Lynda Wayne (FGDC Metadata Training Coordinator).

	information
6.3.2.7	Reference system informa
6.3.2.8	Content information
6.3.2.9	Portrayal catalogue inform
6.3.2.10	Distribution information
6.3.2.11	Metadata extension inform
6.3.2.12	Application schema inform
6.4.1	Extent information
6.4.2	Citation and responsible p information

6.3.2.2	Identification information
6.3.2.3	Constraint information
6.3.2.4	Data quality information
6.3.2.5	Maintenance information
6.3.2.6	Spatial representation information
6.3.2.7	Reference system information
6.3.2.8	Content information
6.3.2.9	Portrayal catalogue information
6.3.2.10	Distribution information
6.3.2.11	Metadata extension information

Update date:
8-July-2003



Relationship between packages of metadata and metadata entities

	Entity	UML Diagram	Data Dictionary
Information	MD_Metadata	A.2.1	B.2.1
Information	MD_Identification	A.2.2	B.2.2
Information	MD_Constraints	A.2.3	B.2.3
Information	DQ_DataQuality	A.2.4 A.2.4.1 A.2.4.2	B.2.4 B.2.4.1 B.2.4.2
Information	MD_MaintenanceInformation	A.2.5	B.2.5

URI	MD_MaintenanceInformation	A.2.3	B.2.3
	MD_SpatialRepresentation	A.2.6	B.2.6
Information	MD_ReferenceSystem	A.2.7	B.2.7
	MD_ContentInformation	A.2.8	B.2.8
Information	MD_PortrayalCatalogueReference	A.2.9	B.2.9
1	MD_Distribution	A.2.10	B.2.10
Information	MD_MetadataExtensionInformation	A.2.11	B.2.11
Information	MD_ApplicationSchemaInformation	A.2.12	B.2.12
	EX_Extent	A.3.1	B.3.1
Role party	CI_Citation CI_ResponsibleParty	A.3.2	B.3.2

Updated by Shawn Silkensen 17-Apr-2003

The "long names" are used, which are the concatenated element names. When "---" appears, that means (multi-element) element and does not have a direct equivalent in 19115. In that case the sub-element

FGDC-STD-001-1998. Content standard for digital geospatial

- 1 [Identification Information](#)
- 2 [Data Quality Information](#)
- 3 [Spatial Data Organization](#)
- 4 [Information](#)
- 5 [Spatial Reference Information](#)
- 6 [Entity and Attribute Information](#)
- 7 [Distribution Information](#)
- 8 [Metadata Reference Information](#)
- 9 [Citation Information](#)
- 10 [Time Period](#)
- 11 [Contact Information](#)

FGDC name	ISO name
Identification Information (Section 1)	See Note 11
1.1 Citation	MD_Metadata.identificationInfo.MD_Identification.citation
1.2 Description	---
1.2.1 Abstract	MD_Metadata.identificationInfo.MD_Identification.abstract
1.2.2 Purpose	MD_Metadata.identificationInfo.MD_Identification.purpose
1.2.3 Supplemental Information	MD_Metadata.identificationInfo.MD_DataIdentification.supplementalInformation
1.3 Time Period of content	---
1.3.1 Time Period Information	MD_Metadata.identificationInfo.MD_DataIdentification.extent.EX_Extent.temporalElement
1.3.2 Currentness Reference	MD_Metadata.identificationInfo.MD_DataIdentification.extent.EX_Extent.description
1.4 Status	---
1.4.1 Progress	MD_Metadata.identificationInfo.MD_Identification.status
1.4.2 Maintenance and Update Frequency	MD_Metadata.identificationInfo.MD_Identification.resourceMaintenance.MD_Maintenance.maintenanceAndUpdateFrequency
1.5 Spatial domain	---
1.5.1 Bounding coordinates	MD_Metadata.identificationInfo.MD_DataIdentification.extent.EX_Extent.geographicElement.EX_GeographicBoundingBox (where EX_Extent.extentTypeCode = 1)
1.5.1.1 West Bounding Coordinate	MD_Metadata.identificationInfo.MD_DataIdentification.extent.EX_Extent.geographicElement.EX_GeographicBoundingBox.westBoundLongitude
1.5.1.2 East Bounding Coordinate	MD_Metadata.identificationInfo.MD_DataIdentification.extent.EX_Extent.geographicElement.EX_GeographicBoundingBox.eastBoundLongitude
1.5.1.3 North Bounding Coordinate	MD_Metadata.identificationInfo.MD_DataIdentification.extent.EX_Extent.geographicElement.EX_GeographicBoundingBox.northBoundLatitude

1.5.1.4 South Bounding Coordinate	MD_Metadata.identificationInfo.MD_DataIdentification.extent.EX_Extent.geographicElement.EX_GeographicBoundingBox.sorthBoundLatitude
1.5.2 Data Set G-Polygon	---
1.5.2.1 Data Set G-Polygon Outer G-Ring	MD_Metadata.identificationInfo.MD_DataIdentification.extent.EX_Extent.geographicElement.EX_BoundingPolygon (EX_Extent.extentTypeCode = 1)
1.5.2.1.1 G-Ring Point	MD_Metadata.identificationInfo.MD_DataIdentification.extent.EX_Extent.geographicElement.EX_BoundingPolygon.polygon.GM_Object
1.5.2.1.1.1 G-Ring Latitude	MD_Metadata.identificationInfo.MD_DataIdentification.extent.EX_Extent.geographicElement.EX_BoundingPolygon.polygon.GM_Object
1.5.2.1.1.2 G-Ring Longitude	MD_Metadata.identificationInfo.MD_DataIdentification.extent.EX_Extent.geographicElement.EX_BoundingPolygon.polygon.GM_Object
1.5.2.1.2 G-Ring	MD_Metadata.identificationInfo.MD_DataIdentification.extent.EX_Extent.geographicElement.EX_BoundingPolygon.polygon.GM_Object
1.5.2.2 Data Set G-Polygon Exclusion G-Ring	MD_Metadata.identificationInfo.MD_DataIdentification.extent.EX_Extent.geographicElement.EX_BoundingPolygon (EX_Extent.extentTypeCode = 0)
1.5.2.2.1 G-Ring Point	MD_Metadata.identificationInfo.MD_DataIdentification.extent.EX_Extent.geographicElement.EX_BoundingPolygon.polygon.GM_Object
1.5.2.2.1.1 G-Ring Latitude	MD_Metadata.identificationInfo.MD_DataIdentification.extent.EX_Extent.geographicElement.EX_BoundingPolygon.polygon.GM_Object
1.5.2.2.1.2 G-Ring Longitude	MD_Metadata.identificationInfo.MD_DataIdentification.extent.EX_Extent.geographicElement.EX_BoundingPolygon.polygon.GM_Object
1.5.2.2.2 G-Ring	MD_Metadata.identificationInfo.MD_DataIdentification.extent.EX_Extent.geographicElement.EX_BoundingPolygon.polygon.GM_Object
1.6 Keywords	MD_Metadata.identificationInfo.MD_Identification.descriptiveKeywords
1.6.1 Theme	MD_Metadata.identificationInfo.MD_Identification.descriptiveKeywords.MD_Keywords.type = theme (code 005)
1.6.1.1 Theme Keyword Thesaurus	MD_Metadata.identificationInfo.MD_Identification.descriptiveKeywords.MD_Keywords.thesaurusName
1.6.1.2 Theme Keyword	MD_Metadata.identificationInfo.MD_Identification.descriptiveKeywords.MD_Keywords.keyword
1.6.2 Place	MD_Metadata.identificationInfo.MD_Identification.descriptiveKeywords.MD_Keywords.tye = place (code 002)
1.6.2.1 Place Keyword Thesaurus	MD_Metadata.identificationInfo.MD_Identification.descriptiveKeywords.MD_Keywords.thesaurusName
1.6.2.2 Place Keyword	MD_Metadata.identificationInfo.MD_Identification.descriptiveKeywords.MD_Keywords.keyword
1.6.3 Stratum	MD_Metadata.identificationInfo.MD_Identification.descriptiveKeywords.MD_Keywords.tye = stratum (code 003)

1.6.3.1 Stratum Keyword Thesaurus	MD_Metadata.identificationInfo.MD_Identification.descriptiveKeywords.MD_Keywords.thesaurusName
1.6.3.2 Stratum Keyword	MD_Metadata.identificationInfo.MD_Identification.descriptiveKeywords.MD_Keywords.keyword
1.6.4 Temporal	MD_Metadata.identificationInfo.MD_Identification.descriptiveKeywords.MD_Keywords.type = temporal (code 004)
1.6.4.1 Temporal Keyword Thesaurus	MD_Metadata.identificationInfo.MD_Identification.descriptiveKeywords.MD_Keywords.thesaurusName
1.6.4.2 Temporal Keyword	MD_Metadata.identificationInfo.MD_Identification.descriptiveKeywords.MD_Keywords.keyword
1.7 Access Constraints	MD_Metadata.identificationInfo.MD_Identification.resourceConstraints.MD_LegalConstraints.otherConstraints, and set MD_Metadata.identificationInfo.MD_Identification.resourceConstraints.MD_LegalConstraints.accessConstraints value to other (008)
1.8 Use Constraints	MD_Metadata.identificationInfo.MD_Identification.resourceConstraints.MD_LegalConstraints.otherConstraints, and set MD_Metadata.identificationInfo.MD_Identification.resourceConstraints.MD_LegalConstraints.useConstraints to other (008)
1.9 Point of Contact	MD_Metadata.identificationInfo.MD_Identification.pointOfContact
1.10 Browse Graphic	MD_Metadata.identificationInfo.MD_Identification.graphicOverview
1.10.1 Browse Graphic File Name	MD_Metadata.identificationInfo.MD_Identification.graphicOverview.MD_BrowseGraphic.fileName
1.10.2 Browse Graphic File Description	MD_Metadata.identificationInfo.MD_Identification.graphicOverview.MD_BrowseGraphic.fileDescription
1.10.3 Browse Graphic File Type	MD_Metadata.identificationInfo.MD_Identification.graphicOverview.MD_BrowseGraphic.fileType
1.11 Data Set Credit	MD_Metadata.identificationInfo.MD_Identification.credit
1.12 Security Information	---
1.12.1 Security Classification System	MD_Metadata.identificationInfo.MD_Identification.resourceConstraints.MD_SecurityConstraints.classificationSystem
1.12.2 Security Classification	MD_Metadata.identificationInfo.MD_Identification.resourceConstraints.MD_SecurityConstraints.classification
1.12.3 Security Handling Description	MD_Metadata.identificationInfo.MD_Identification.resourceConstraints.MD_SecurityConstraints.handlingDescription
1.13 Native Data Set Environment	MD_Metadata.identificationInfo.MD_DataIdentification.environmentDescription
1.14 Cross Reference	MD_Metadata.identificationInfo.MD_Identification.aggregationInfo.aggregateDatasetName or aggregateDatasetIdentifier (with associationType = 001 "crossReference")
Data Quality Information (Section 2)	MD_Metadata.dataQualityInfo.DQ_DataQuality
2.1 Attribute Accuracy	MD_Metadata.dataQualityInfo.DQ_DataQuality.report.DQ_ThematicAccuracy (abstract)
2.1.1 Attribute Accuracy Report	MD_Metadata.dataQualityInfo.DQ_DataQuality.report.DQ_QuantitativeAttributeAccuracy.evaluationMethodDescription
2.1.2 Quantitative Attribute Accuracy Assessment	MD_Metadata.dataQualityInfo.DQ_DataQuality.report.DQ_QuantitativeAttributeAccuracy

2.1.2.1 Attribute Accuracy Value	MD_Metadata.dataQualityInfo.DQ_DataQuality.report.DQ_QuantitativeAttributeAccuracy.result.DQ_QuantitativeResult.value
2.1.2.2 Attribute Accuracy Explanation	MD_Metadata.dataQualityInfo.DQ_DataQuality.report.DQ_QuantitativeAttributeAccuracy.measureDescription
2.2 Logical Consistency Report	MD_Metadata.dataQualityInfo.DQ_DataQuality.report.DQ_LogicalConsistency (abstract).evaluationMethodDescription
2.3 Completeness Report	MD_Metadata.dataQualityInfo.DQ_DataQuality.report.DQ_Completeness (abstract).evaluationMethodDescription
2.4 Positional Accuracy	MD_Metadata.dataQualityInfo.DQ_DataQuality.DQ_PositionalAccuracy.(abstract) DQ_AbsoluteExternalPositionalAccuracy.Result
2.4.1 Horizontal Positional Accuracy	MD_Metadata.dataQualityInfo.DQ_DataQuality.report.DQ_AbsoluteExternalPositionalAccuracy.result
2.4.1.1 Horizontal Positional Accuracy Report	MD_Metadata.dataQualityInfo.DQ_DataQuality.report.DQ_PositionalAccuracy (abstract).evaluationMethodDescription
2.4.1.2 Quantitative Horizontal Positional Accuracy Assessment	---
2.4.1.2.1 Horizontal Positional Accuracy Value	MD_Metadata.dataQualityInfo.DQ_DataQuality.report.DQ_PositionalAccuracy (abstract)
2.4.1.2.2 Horizontal Positional Accuracy Explanation	MD_Metadata.dataQualityInfo.DQ_DataQuality.report.DQ_PositionalAccuracy (abstract).measureDescription
2.4.2 Vertical Positional Accuracy	MD_Metadata.dataQualityInfo.DQ_DataQuality.report.DQ_AbsoluteExternalPositionalAccuracy.result
2.4.2.1 Vertical Positional Accuracy Report	MD_Metadata.dataQualityInfo.DQ_DataQuality.report.DQ_PositionalAccuracy (abstract).evaluationMethodDescription
2.4.2.2 Quantitative Vertical Positional Accuracy Assessment	---
2.4.2.2.1 Vertical Positional Accuracy Value	MD_Metadata.dataQualityInfo.DQ_DataQuality.report.DQ_PositionalAccuracy (abstract)
2.4.2.2.2 Vertical Positional Accuracy Explanation	MD_Metadata.dataQualityInfo.DQ_DataQuality.report.DQ_PositionalAccuracy (abstract).measureDescription
2.5 Lineage	MD_Metadata.dataQualityInfo.DQ_DataQuality.lineage.LI_Lineage
2.5.1 Source Information	---
2.5.1.1 Source Citation	MD_Metadata.dataQualityInfo.DQ_DataQuality.lineage.LI_Lineage.source.LI_Source.sourceCitation
2.5.1.2 Source Scale Denominator	MD_Metadata.dataQualityInfo.DQ_DataQuality.lineage.LI_Lineage.source.LI_Source.scaleDenominator
2.5.1.3 Type of Source Media	MD_Metadata.dataQualityInfo.DQ_DataQuality.lineage.LI_Lineage.source.LI_Source.description
2.5.1.4 Source Time Period of Content	MD_Metadata.dataQualityInfo.DQ_DataQuality.lineage.LI_Lineage.source.LI_Source.sourceExtent.EX_Extent.temporalExtent.EX_TemporalExtent.extent
2.5.1.4.1 Source Currentness Reference	MD_Metadata.dataQualityInfo.DQ_DataQuality.lineage.LI_Lineage.source.LI_Source.sourceExtent.EX_Extent.description
2.5.1.5 Source Citation Abbreviation	MD_Metadata.dataQualityInfo.DQ_DataQuality.lineage.LI_Lineage.source.LI_Source.sourceCitation.CI_Citation.alternateTitle
2.5.1.6 Source Contribution	MD_Metadata.dataQualityInfo.DQ_DataQuality.lineage.LI_Lineage.source.LI_Source.description

2.5.2 Process Step	MD_Metadata.dataQualityInfo.DQ_DataQuality.lineage.LI_Lineage.processStep
2.5.2.1 Process Description	MD_Metadata.dataQualityInfo.DQ_DataQuality.lineage.LI_Lineage.processStep.LI_ProcessStep.description
2.5.2.2 Source Used Citation Abbreviation	MD_Metadata.dataQualityInfo.DQ_DataQuality.lineage.LI_Lineage.processStep.LI_ProcessStep.source.LI_Source.sourceCitation.CI_Citation.alternateTitle
2.5.2.3 Process Date	MD_Metadata.dataQualityInfo.DQ_DataQuality.lineage.LI_Lineage.processStep.LI_ProcessStep.dateTime
2.5.2.4 Process Time	MD_Metadata.dataQualityInfo.DQ_DataQuality.lineage.LI_Lineage.processStep.LI_ProcessStep.dateTime
2.5.2.5 Source Produced Citation Abbreviation	MD_Metadata.dataQualityInfo.DQ_DataQuality.lineage.LI_Lineage.processStep.source.LI_Source.sourceCitation.CI_Citation.alternateTitle
2.5.2.6 Process Contact	MD_Metadata.dataQualityInfo.DQ_DataQuality.lineage.LI_Lineage.processStep.LI_ProcessStep.processor
2.6 Cloud Cover	MD_Metadata.contentInfo.MD_ImageDescription.cloudCoverPercentage
Spatial Data Organization Information (Section 3)	
3.1 Indirect Spatial Reference	MD_Metadata.referenceSystemInfo.MD_ReferenceSystem.referenceSystemIdentifier.RS_Identifier.code
3.2 Direct Spatial Reference Method	MD_Metadata.identificationInfo.MD_Identification.spatialRepresentationType as vector (001) or grid (002)
3.3 Point and Vector Object Information	MD_Metadata.spatialRepresentationInfo.MD_VectorSpatialRepresentation
3.3.1 SDTS Terms Description	---
3.3.1.1 SDTS Point and Vector Object Type	MD_Metadata.spatialRepresentationInfo.MD_VectorSpatialRepresentation.geometricObject.MD_GeometricObjects.geometricObjectType
3.3.1.2 Point and Vector Object Count	MD_Metadata.spatialRepresentationInfo.MD_VectorSpatialRepresentation.geometricObject.MD_GeometricObjects.geometricObjectCount
3.3.2 VPF Terms Description	---
3.3.2.1 VPF Topology Level	MD_Metadata.spatialRepresentationInfo.MD_VectorSpatialRepresentation.topologyLevel
3.3.2.2 VPF Point and Vector Object Information	---
3.3.2.2.1 VPF Point and Vector Object Type	MD_Metadata.spatialRepresentationInfo.MD_VectorSpatialRepresentation.geometricObject.MD_GeometricObjects.geometricObjectType
3.3.2.2.2 Point and Vector Object Count	MD_Metadata.spatialRepresentationInfo.MD_VectorSpatialRepresentation.geometricObject.MD_GeometricObjects.geometricObjectCount
3.4 Raster Object Information	---
3.4.1 Raster Object Type	MD_Metadata.spatialRepresentationInfo.MD_GridSpatialRepresentation.numberofDimensions
3.4.2 Row Count	MD_Metadata.spatialRepresentationInfo.MD_GridSpatialRepresentation.axisDimensionProperties.MD_Dimension.dimensionSize (dimensionName = row, code 001)

3.4.3	Column Count	MD_Metadata.spatialRepresentationInfo.MD_GridSpatialRepresentation.axisDimensionProperties.MD_Dimension.dimensionSize (dimensionName = column, code 002)
3.4.4	Vertical Count	MD_Metadata.spatialRepresentationInfo.MD_GridSpatialRepresentation.axisDimensionProperties.MD_Dimension.dimensionSize (dimensionName = vertical, code 003)
Spatial Reference Information (Section 4)		
4.1	Horizontal Coordinate System Definition	---
4.1.1	Geographic	MD_Metadata.referenceSystemInfo.MD_ReferenceSystem.referenceSystemIdentifier.RS_Identifier.code (= FGDC Geographic)
4.1.1.1	Latitude Resolution	NO MATCH
4.1.1.2	Longitude Resolution	NO MATCH
4.1.1.3	Geographic Coordinate Units	NO MATCH
4.1.2	Planar	---
4.1.2.1	Map Projection	---
4.1.2.1.1	Map Projection Name	MD_Metadata.referenceSystemInfo.MD_CRS.projection.RS_Identifier.code (replace with codelist, 4.1.2.1.2 – 4.1.2.1.22)
4.1.2.1.2	Albers Conical Equal Area	Uses elements 4.1.2.1.23.1, .2, .3, .4, .5
4.1.2.1.3	Azimuthal Equidistant	Uses elements 4.1.2.1.23.2, .3, .4, .5
4.1.2.1.4	Equidistant Conic	Uses elements 4.1.2.1.23.1, .2, .3, .4, .5
4.1.2.1.5	Equirectangular	Uses elements 4.1.2.1.23.1, .2, .4, .5
4.1.2.1.6	General Vertical Near-sided Perspective	Uses elements 4.1.2.1.23.7, .8, .9, .4, .5
4.1.2.1.7	Gnomonic	Uses elements 4.1.2.1.23.8, .9, .4, .5
4.1.2.1.8	Lambert Azimuthal Equal Area	Uses elements 4.1.2.1.23.8, .9, .4, .5
4.1.2.1.9	Lambert Conformal Conic	Uses elements 4.1.2.1.23.1, .2, .3, .4, .5
4.1.2.1.10	Mercator	Uses elements 4.1.2.1.23.1, .6, .2, .4, .5
4.1.2.1.11	Modified Stereographic for Alaska	Uses elements 4.1.2.1.23.4, .5
4.1.2.1.12	Miller Cylindrical	Uses elements 4.1.2.1.23.2, .4, .5
4.1.2.1.13	Oblique Mercator	Uses elements 4.1.2.1.23.10, .11, .12, .3, .4, .5
4.1.2.1.14	Orthographic	Uses elements 4.1.2.1.23.8, .9, .4, .5
4.1.2.1.15	Polarstereographic	Uses elements 4.1.2.1.23.13, .1, .14, .4, .5
4.1.2.1.16	Polyconic	Uses elements 4.1.2.1.23.2, .3, .4, .5
4.1.2.1.17	Robinson	Uses elements 4.1.2.1.23.8, .4, .5
4.1.2.1.18	Sinusoidal	Uses elements 4.1.2.1.23.8, .4, .5
4.1.2.1.19	Space Oblique Mercator	Uses elements 4.1.2.1.23.15, .16
4.1.2.1.20	Stereographic	Uses elements 4.1.2.1.23.8, .9, .4, .5
4.1.2.1.21	Transverse Mercator	Uses elements 4.1.2.1.23.17, .2, .3, .4, .5
4.1.2.1.22	van der Grinton	Uses elements 4.1.2.1.23.2, .4, .5
4.1.2.1.23	Map projection parameters	---
4.1.2.1.23.1	Standard Parallel	MD_Metadata.referenceSystemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.standardParallel
4.1.2.1.23.2	Longitude of Central Meridian	MD_Metadata.referenceSystemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.longitudeOfCentralMeridian
4.1.2.1.23.3	Latitude of Projection Origin	MD_Metadata.referenceSystemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.latitudeOfProjectionOrigin

4.1.2.1.23.4 False Easting	MD_Metadata.referenceSystemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.falseEasting
4.1.2.1.23.5 False Northing	MD_Metadata.referenceSystemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.falseNorthing
4.1.2.1.23.6 Scale Factor at Equator	MD_Metadata.referenceSystemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.scaleFactorAtEquator
4.1.2.1.23.7 Height at perspective point Above Surface	MD_Metadata.referenceSystemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.heightOfProspectivePointAboveSurface
4.1.2.1.23.8 Longitude of Projection Center	MD_Metadata.referenceSystemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.longitudeOfProjectionCenter
4.1.2.1.23.9 Latitude of Projection Center	MD_Metadata.referenceSystemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.latitudeOfProjectionCenter
4.1.2.1.23.10 Scale Factor at Center Line	MD_Metadata.referenceSystemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.scaleFactorAtCenterLine
4.1.2.1.23.11 Oblique Line Azimuth	---
4.1.2.1.23.11.1 Azimuth Angle	MD_Metadata.referenceSystemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.obliqueLineAzimuthParameter.MD_ObliqueLineAzimuth.azimuthAngle
4.1.2.1.23.11.2 Azimuth Measure Point Longitude	MD_Metadata.referenceSystemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.obliqueLineAzimuthParameter.MD_ObliqueLineAzimuth.azimuthMeasurePointLongitude
4.1.2.1.23.12 Oblique Line Point	---
4.1.2.1.23.12.1 Oblique Line Latitude	MD_Metadata.referenceSystemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.obliqueLinePointParameter.MD_ObliqueLinePoint.obliqueLineLatitude
4.1.2.1.23.12.2 Oblique Line Longitude	MD_Metadata.referenceSystemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.obliqueLinePointParameter.MD_ObliqueLinePoint.obliqueLineLongitude
4.1.2.1.23.13 Straight Vertical Longitude from pole	MD_Metadata.referenceSystemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.straightVerticalLongitudeFromPole
4.1.2.1.23.14 Scale Factor at Projection Origin	MD_Metadata.referenceSystemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.scaleFactorAtProjectionOrigin
4.1.2.1.23.15 Landsat Number	NO MATCH
4.1.2.1.23.16 Path Number	NO MATCH
4.1.2.1.23.17 Scale Factor at Central Meridian	NO MATCH
4.1.2.1.23.18 Other Projection's Definition	MD_Metadata.referenceSystemInfo.MD_ReferenceSystem.referenceSystemIdentifier.RS_Identifier.code
4.1.2.2 Grid Coordinate System	---
4.1.2.2.1 Grid Coordinate System Name	MD_Metadata.referenceSystemInfo.MD_ReferenceSystem.referenceSystemIdentifier.RS_Identifier.code (replace with codelist, 4.1.2.2.2 – 4.1.2.2.6)
4.1.2.2.2 Universal Transverse Mercator	Selection from codelist in 4.1.2.2.1; Also contains 4.1.2.1.21.
4.1.2.2.2.1 UTM Zone Number	MD_Metadata.referenceSystemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.zone
4.1.2.2.3 Universal Polar Stereographic	Selection from codelist in 4.1.2.2.1; Also contains 4.1.2.1.15.
4.1.2.2.3.1 UPS Zone Identifier	MD_Metadata.referenceSystemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.zone

4.1.2.2.4 State Plane Coordinate System	Selection from codelist in 4.1.2.2.1; Also contains 4.1.2.1.9 or 4.1.2.1.21 or 4.1.2.1.13 or 4.1.2.1.16.
4.1.2.2.4.1 SPCS Zone Identifier	MD_Metadata.referenceSystemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.zone
4.1.2.2.5 ARC Coordinate System	Selection from codelist in 4.1.2.2.1; Also contains 4.1.2.1.5 or 4.1.2.1.3
4.1.2.2.5.1 ARC System Zone Identifier	MD_Metadata.referenceSystemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.
4.1.2.2.6 Other Grid System's Definition	Selection from codelist in 4.1.2.2.1
4.1.2.3 Local Planar	---
4.1.2.3.1 Local Planar Description	MD_Metadata.referenceSystemInfo.MD_ReferenceSystem.referenceSystemIdentifier.RS_Identifier.code
4.1.2.3.2 Local Planar Georeference Information	MD_Metadata.referenceSystemInfo.MD_ReferenceSystem.referenceSystemIdentifier.RS_Identifier.code
4.1.2.4 Planar Coordinate Information	---
4.1.2.4.1 Planar Coordinate Encoding Method	ISO-19111: SC_Coordinate SystemType.type
4.1.2.4.2 Coordinate Representative	---
4.1.2.4.2.1 Abscissa Resolution	MD_Metadata.spatialRepresentationInfo.MD_GridSpatialRepresentation.axisDimensionProperties.MD_Dimension.resolution.Measure (dimension=column code (002))
4.1.2.4.2.2 Ordinate Resolution	MD_Metadata.spatialRepresentationInfo.MD_GridSpatialRepresentation.axisDimensionProperties.MD_Dimension.resolution.Measure (dimension=row code (001))
4.1.2.4.3 Distance and Bearing Representation	---
4.1.2.4.3.1 Distance Resolution	NO MATCH
4.1.2.4.3.2 Bearing Resolution	NO MATCH
4.1.2.4.3.3 Bearing Units	ISO-19111: axisUnitID
4.1.2.4.3.4 Bearing Reference Direction	ISO-19111: axisDirection
4.1.2.4.3.5 Bearing Reference Meridian	ISO-19111: RS_identifier.meridianID
4.1.2.4.4 Planar Distance Units	NO MATCH
4.1.3 Local	---
4.1.3.1 Local Description	MD_Metadata.referenceSystemInfo.MD_ReferenceSystem.referenceSystemIdentifier.RS_Identifier.code
4.1.3.2 Local Georeference Information	MD_Metadata.referenceSystemInfo.MD_ReferenceSystem.referenceSystemIdentifier.RS_Identifier.code
4.1.4 Geodetic Model	---
4.1.4.1 Horizontal Datum Name	MD_Metadata.referenceSystemInfo.MD_CRS.datum.RS_Identifier.code
4.1.4.2 Ellipsoid Name	MD_Metadata.referenceSystemInfo.MD_CRS.ellipsoid.RS_Identifier.code
4.1.4.3 Semi-Major Axis	MD_Metadata.referenceSystemInfo.MD_CRS.ellipsoidParameters.MD_EllipsoidParameters.semiMajorAxis
4.1.4.4 Denominator of Flattening Ratio	MD_Metadata.referenceSystemInfo.MD_CRS.ellipsoidParameters.MD_EllipsoidParameters.denominatorOfFlateningRatio

4.2 Vertical Coordinate System Definition	---
4.2.1 Altitude System Definition	---
4.2.1.1 Altitude Datum Name	MD_Metadata.identificationInfo.MD_DataIdentification.extent.EX_Extent.verticalElement.EX_VerticalExtent.verticalDatum.SC_VerticalDatum.datumID.RS_Identifier.code
4.2.1.2 Altitude Resolution	MD_Metadata.spatialRepresentationInfo.MD_GridSpatialRepresentation.axisDimensionProperties.MD_Dimension.resolution.Measure (dimension=vertical code (003))
4.2.1.3 Altitude Distance units	MD_Metadata.spatialRepresentationInfo.MD_GridSpatialRepresentation.axisDimensionProperties.MD_Dimension.resolution.Measure (dimension=vertical code (003))
4.2.1.4 Altitude Encoding Method	NO MATCH
4.2.2 Depth System Definition	---
4.2.2.1 Depth Datum Name	MD_Metadata.identificationInfo.MD_DataIdentification.extent.EX_Extent.verticalElement.EX_VerticalExtent.verticalDatum.SC_VerticalDatum.datumID.RS_Identifier.code
4.2.2.2 Depth Resolution	MD_Metadata.spatialRepresentationInfo.MD_GridSpatialRepresentation.axisDimensionProperties.MD_Dimension.resolution.Measure (dimension=vertical code (003))
4.2.2.3 Depth Distance Units	MD_Metadata.spatialRepresentationInfo.MD_GridSpatialRepresentation.axisDimensionProperties.MD_Dimension.resolution.Measure (dimension=vertical code (003))
4.2.2.4 Depth Encoding Method	NO MATCH
Entity and Attribute Information (Section	
5.1 Detailed Description	FC_FeatureCatalogue
5.1.1 Entity Type	FC_FeatureCatalogue.FC_FeatureType
5.1.1.1 Entity Type Label	FC_FeatureCatalogue.FC_FeatureType.name
5.1.1.2 Entity Type Definition	FC_FeatureCatalogue.FC_FeatureType.definition
5.1.1.3 Entity Type Definition Source	FC_FeatureCatalogue.FC_FeatureType.definitionSource
5.1.2 Attribute	FC_FeatureCatalogue.FC_FeatureType.FC_FeatureAttribute
5.1.2.1 Attribute Label	FC_FeatureCatalogue.FC_FeatureType.FC_FeatureAttribute.name
5.1.2.2 Attribute Definition	FC_FeatureCatalogue.FC_FeatureType.FC_FeatureAttribute.definition
5.1.2.3 Attribute Definition Source	FC_FeatureCatalogue.definitionSource
5.1.2.4 Attribute Domain Values	---
5.1.2.4.1 Enumerated Domain	FC_FeatureCatalogue.FC_FeatureType.FC_FeatureAttribute.FC_FeatureAttributeValue
5.1.2.4.1.1 Enumerated Domain Value	FC_FeatureCatalogue.FC_FeatureType.FC_FeatureAttribute.FC_FeatureAttributeValue.label
5.1.2.4.1.2 Enumerated Domain Value Definition	FC_FeatureCatalogue.FC_FeatureType.FC_FeatureAttribute.FC_FeatureAttributeValue.definition
5.1.2.4.1.3 Enumerated Domain Value Definition Source	FC_FeatureCatalogue.definitionSource

5.1.2.4.2	Range Domain	FC_FeatureCatalogue.FC_FeatureType.FC_FeatureAttribute.valueDomain
5.1.2.4.2.1	Range Domain Minimum	FC_FeatureCatalogue.FC_FeatureType.FC_FeatureAttribute.valueDomain
5.1.2.4.2.2	Range Domain Maximum	FC_FeatureCatalogue.FC_FeatureType.FC_FeatureAttribute.valueDomain
5.1.2.4.2.3	Attributes units of Measure	FC_FeatureCatalogue.FC_FeatureType.FC_FeatureAttribute.valueMeasurementUnit
5.1.2.4.2.4	Attribute Measurement Resolution	NO MATCH
5.1.2.4.3	Codeset Domain	---
5.1.2.4.3.1	Codeset Name	FC_FeatureCatalogue.definitionSource
5.1.2.4.3.2	Codeset Source	FC_FeatureCatalogue.definitionSource
5.1.2.4.3.3	Unrepresentable Domain	FC_FeatureCatalogue.FC_FeatureType.FC_FeatureAttribute.valueDomain
5.1.2.5	Beginning Date of Attribute Values	NO MATCH
5.1.2.6	Ending Date of Attribute Values	NO MATCH
5.1.2.7	Attribute Value Accuracy Information	
5.1.2.7.1	Attribute Value Accuracy	MD_Metadata.dataQualityInfo.DQ_DataQuality.report.DQ_QuantitativeAttributeAccuracy.result.DQ_QuantitativeResult.value
5.1.2.7.2	Attribute Value Accuracy Explanation	MD_Metadata.dataQualityInfo.DQ_DataQuality.report.DQ_QuantitativeAttributeAccuracy.measureDescription
5.1.2.8	Attribute Measurement Frequency	NO MATCH
5.2	Overview Description	---
5.2.1	Entity and Attribute Overview	MD_Metadata.contentInfo.MD_FeatureCatalogueDescription.featureCatalogueCitation.CI_Citation.otherCitationDetails
5.2.2	Entity and Attribute Detail Citation	Append to MD_Metadata.contentInfo.MD_FeatureCatalogueDescription.featureCatalogueCitation.CI_Citation.otherCitationDetails
Distribution Information (Section 6)		
6.1	Distributor	MD_Metadata.distributionInfo.MD_Distribution.distribution.MD_Distributor.distributorContact
6.2	Resource Description	MD_Metadata.identificationInfo.MD_Identification.citation.CI_Citation.identifier
6.3	Distribution Liability	MD_Metadata.identificationInfo.MD_Identification.resourceConstraints.MD_LegalConstraints.otherConstraints
6.4	Standard Order Process	---
6.4.1	Non-Digital Form	MD_Metadata.distributionInfo.MD_Distribution.distributor.MD_Distributor.distributionOrderProcess.MD_StandardOrderProcess.orderingInstructions
6.4.2	Digital Form	---
6.4.2.1	Digital Transfer Information	---
6.4.2.1.1	Format Name	MD_Metadata.distributionInfo.MD_Distribution.distributionFormat.MD_Format.formatName

6.4.2.1.2	Format Version Number	MD_Metadata.distributionInfo.MD_Distribution.distributionFormat.MD_Format.formatVersion
6.4.2.1.3	Format Version Date	MD_Metadata.distributionInfo.MD_Distribution.distributionFormat.MD_Format.formatVersion
6.4.2.1.4	Format Specification	MD_Metadata.distributionInfo.MD_Distribution.distributionFormat.MD_Format.specification
6.4.2.1.5	Format Information Content	APPEND to MD_Metadata.distributionInfo.MD_Distribution.distributionFormat.MD_Format.specification
6.4.2.1.6	File Decompression Technique	MD_Metadata.distributionInfo.MD_Distribution.distributionFormat.MD_Format.fileDecompressionTechnique
6.4.2.1.7	Transfer Size	MD_Metadata.distributionInfo.MD_Distribution.transferOptions.MD_DigitalTransferOptions.transferSize
6.4.2.2	Digital Transfer Option	---
6.4.2.2.1	Online Option	MD_Metadata.distributionInfo.MD_Distribution.transferOptions.MD_DigitalTransferOptions.onLine
6.4.2.2.1.1	Computer Contact Information	---
6.4.2.2.1.1.1	Network Address	---
6.4.2.2.1.1.1.1	Network Resource Name	MD_Metadata.distributionInfo.MD_Distribution.transferOptions.MD_DigitalTransferOption.online.CI_OnlineResource.name
6.4.2.2.1.1.2	Dialup Instructions	---
6.4.2.2.1.1.2.1	Lowest BPS	
6.4.2.2.1.1.2.2	Highest BPS	
6.4.2.2.1.1.2.3	Number DataBits	
6.4.2.2.1.1.2.4	Number StopBits	
6.4.2.2.1.1.2.5	Parity	
6.4.2.2.1.1.2.6	Compression Support	
6.4.2.2.1.1.2.7	Dialup Telephone	
6.4.2.2.1.1.2.8	Dialup Filename	
6.4.2.2.1.2	Access Instructions	MD_Metadata.distributionInfo.MD_Distribution.transferOptions.MD_DigitalTransferOptions.onLine.CI_OnlineResource.protocol
6.4.2.2.1.3	Online Computer and Operating System	MD_Metadata.distributionInfo.MD_Distribution.transferOptions.MD_DigitalTransferOptions.onLine.CI_OnlineResource.description
6.4.2.2.2	Offline Option	MD_Metadata.distributionInfo.MD_Distribution.transferOptions.MD_DigitalTransferOptions.offLine
6.4.2.2.2.1	Offline Media	MD_Metadata.distributionInfo.MD_Distribution.transferOptions.MD_DigitalTransferOptions.offLine.MD_Medium.name
6.4.2.2.2.2	Recording Capacity	---
6.4.2.2.2.2.1	Recording Density	MD_Metadata.distributionInfo.MD_Distribution.transferOptions.MD_DigitalTransferOptions.offLine.MD_Medium.density
6.4.2.2.2.2.2	Recording Density Units	MD_Metadata.distributionInfo.MD_Distribution.transferOptions.MD_DigitalTransferOptions.offLine.MD_Medium.densityUnits
6.4.2.2.2.3	Recording Format	MD_Metadata.distributionInfo.MD_Distribution.transferOptions.MD_DigitalTransferOptions.offLine.MD_Medium.mediumFormat

6.4.2.2.2.4 Compatibility Information	MD_Metadata.distributionInfo.MD_Distribution.transferOptions.MD_DigitalTransferOptions.offLine.MD_Medium.mediumNote
6.4.3 Fees	MD_Metadata.distributionInfo.MD_Distribution.distributor.MD_Distributor.distributionOrderProcess.MD_StandardOrderProcess.fees
6.4.4 Ordering Instructions	MD_Metadata.distributionInfo.MD_Distribution.distributor.MD_Distributor.distributionOrderProcess.MD_StandardOrderProcess.orderingInstructions
6.4.5 Turnaround	MD_Metadata.distributionInfo.MD_Distribution.distributor.MD_Distributor.distributionOrderProcess.MD_StandardOrderProcess.turnaround
6.5 Custom Order Process	Append to 6.4.4
6.6 Technical Prerequisites	MD_Metadata.identificationInfo.MD_DataIdentification.supplementalInformation
6.7 Available Time Period	MD_Metadata.distributionInfo.MD_Distribution.distributor.MD_Distributor.distributionOrderProcess.MD_StandardOrderProcess.plannedAvailableDateTime
Metadata Reference Information (Section	
7.1 Metadata Date	MD_Metadata.dateStamp.
7.2 Metadata Review Date	MD_Metadata.metadataMaintenance.MD_MaintenanceInformation.maintenanceNote
7.3 Metadata Future Review Date	MD_Metadata.metadataMaintenance.MD_MaintenanceInformation.dateOfNextUpdate
7.4 Metadata Contact	MD_Metadata.contact
7.5 Metadata Standard Name	MD_Metadata.metadataStandardName
7.6 Metadata Standard Version	MD_Metadata.metadataStandardVersion
7.7 Metadata Time Convention	NO MATCH
7.8 Metadata Access Constraints	MD_Metadata.metadataConstraints.MD_LegalConstraints.accessConstraints
7.9 Metadata Use Constraints	MD_Metadata.metadataConstraints.MD_LegalConstraints.useConstraints
7.10 Metadata Security Information	MD_Metadata.metadataConstraints.MD_SecurityConstraints
7.10.1 Metadata Security Classification System	MD_Metadata.metadataConstraints.MD_SecurityConstraints.classificationSystem
7.10.2 Metadata Security Classification	MD_Metadata.metadataConstraints.MD_SecurityConstraints.classification
7.10.3 Metadata Security Handling Description	MD_Metadata.metadataConstraints.MD_SecurityConstraints.handlingDescription
7.11 Metadata Extensions	MD_Metadata.metadataExtensionInfo
7.11.1 Online Linkage	MD_Metadata.metadataExtensionInfo.MD_MetadataExtensionInformation.extensionOnlineResource.CI_OnlineResource.linkage
7.11.2 Profile Name	MD_Metadata.metadataStandardName AND MD_Metadata.metadataStandardVersion

Citation Information (Section 8)		See Note 10
8.1	Originator	CI_Citation.citedResponsibleParty.CI_ResponsibleParty.individualName OR organisationName (roleCode = originator, code 006)
8.2	Publication Date	CI_Citation.date.CI_Date.date (dateType = publication, code 002)
8.3	Publication Time	CI_Citation.date.CI_Date.date
8.4	Title	CI_Citation.title
8.5	Edition	CI_Citation.edition
8.6	Geospatial Data Presentation Form	CI_Citation.presentationForm
8.7	Series Information	---
8.7.1	Series Name	CI_Citation.series.CI_Series.name
8.7.2	Issue Identification	CI_Citation.series.CI_Series.issueIdentification
8.8	Publication Information	---
8.8.1	Publication Place	CI_Citation.citedResponsibleParty.CI_ResponsibleParty.contactInfo.CI_Contact.address.CI_Address.city
8.8.2	Publisher	CI_Citation.citedResponsibleParty.CI_ResponsibleParty.organizationName (role = publisher, code 010)
8.9	Other Citation Details	CI_Citation.otherCitationDetails
8.10	Online Linkage	MD_Metadata.distributionInfo.MD_Distribution.transferOptions.MD_DigitalTransferOptions.onLine.CI_OnlineResource.linkage (function=download, code 001)
8.11	Larger Work Citation	CI_Citation.collectiveTitle
Time Period Information (Section 9)		
9.1	Single Date/Time	EX_Extent.temporalElement.EX_TemporalExtent.extent
9.1.1	Calendar Date	
9.1.2	Time of Day	
9.2	Multiple Dates/Times	
9.3	Range of Dates/Times	
9.3.1	Beginning Date	
9.3.2	Beginning Time	
9.3.3	Ending Date	
9.3.4	Ending Time	
Contact Information (Section 10)		
10.1	Contact Person Primary	CI_Citation.citedResponsibleParty
10.1.1	Contact Person	CI_Citation.citedResponsibleParty.CI_ResponsibleParty.individualName
10.1.2	Contact Organization	CI_Citation.citedResponsibleParty.CI_ResponsibleParty.organizationName
10.2	Contact Organization Primary	CI_Citation.citedResponsibleParty.CI_ResponsibleParty
10.2.1	Contact Organization	CI_Citation.citedResponsibleParty.CI_ResponsibleParty.organizationName
10.2.2	Contact Person	CI_Citation.citedResponsibleParty.CI_ResponsibleParty.individualName
10.3	Contact Position	CI_Citation.citedResponsibleParty.CI_ResponsibleParty.positionName
10.4	Contact Address	CI_Citation.citedResponsibleParty.CI_ResponsibleParty.contact.CI_Contact.address

10.4.1	Address Type	NO MATCH
10.4.2	Address	CI_Citation.citedResponsibleParty.CI_ResponsibleParty.contact.CI_Contact.address.CI_Address.deliveryPoint
10.4.3	City	CI_Citation.citedResponsibleParty.CI_ResponsibleParty.contact.CI_Contact.address.CI_Address.city
10.4.4	State or Province	CI_Citation.citedResponsibleParty.CI_ResponsibleParty.contact.CI_Contact.address.CI_Address.administrativeArea
10.4.5	Postal Code	CI_Citation.citedResponsibleParty.CI_ResponsibleParty.contact.CI_Contact.address.CI_Address.postalCode
10.4.6	Country	CI_Citation.citedResponsibleParty.CI_ResponsibleParty.contact.CI_Contact.address.CI_Address.country
10.5	Contact Voice Telephone	CI_Citation.citedResponsibleParty.CI_ResponsibleParty.contact.CI_Contact.phone.CI_Telephone.voice
10.6	Contact TDD/TTY Telephone	NO MATCH
10.7	Contact Facsimile Telephone	CI_Citation.citedResponsibleParty.CI_ResponsibleParty.contact.CI_Contact.phone.CI_Telephone.facsimile
10.8	Contact Electronic Mail Address	CI_Citation.citedResponsibleParty.CI_ResponsibleParty.contact.CI_Contact.address.CI_Address.electronicMailAddress
10.9	Hours of Service	CI_Citation.citedResponsibleParty.CI_ResponsibleParty.contact.CI_Contact.hoursOfService
10.10	Contact Instructions	CI_Citation.citedResponsibleParty.CI_ResponsibleParty.contact.CI_Contact.contactInstructions

means that the FGDC element is a complex
its do have mappings.

LEGEND

No mapping required (compound element)

NO MATCH

Indicates that further action is required.

Indicates that a change was made from previous versions.

Comment

Compound element, unnecessary mapping
Compound element, unnecessary mapping
Compound element, unnecessary mapping
Compound element, unnecessary mapping

Compound element, unnecessary mapping

[See Note7](#)

[See Note7](#)

Compound element, unnecessary mapping

Compound element, unnecessary mapping

This is a new element in the FDIS version.

Compound element, no mapping necessary

Compound element, no mapping necessary

Compound element, no mapping necessary

Compound element, no mapping necessary

A unique instance: See 2.4.2.1

Compound element, no mapping necessary

Compound element, no mapping necessary

A unique instance: See 2.4.1.1

Compound element, no mapping necessary

Compound element, no mapping necessary

Compound element, no mapping necessary

Not a very exact mapping. An element might need to be added to LI_Source, with the domain of MD_Medium.

Compound element, no mapping necessary

Compound element, map to subordinate fields

When FGDC-3.2 = "point," then in ISO type = vector (001)

Compound element, no mapping necessary

Compound element, no mapping necessary

Compound element, no mapping necessary

Compound element, no mapping necessary

Compound element, no mapping necessary

[See Note 5](#)

Compound element, no mapping necessary

Compound element, no mapping necessary

Compound element, no mapping necessary

[See Note 4](#)

[See Note 8](#)

Compound element, no mapping necessary

Compound element, no mapping necessary

Compound element, no mapping necessary

Content to be exported in "Other" XML section. These will be considered in a version of ISO-19115 for remote sensing.

Compound Element

[See Note 6](#)

Compound Element

Compound Element

NOTE: "UPS Zone" is alpha, and ISO19115 will have to be changed to allow this

Compound Element

Compound Element

Compound Element

Compound Element

FDIS provides commonly used values, but these do not appear to be a fixed domain. (J.Maitra)

Compound Element

Crosswalk applies to grid data only, data type determined by FGDC 3.2. If vector fuzzy tolerance, then ISO 19111?

Compound Element

No Match in ISO-19111 (JMaitra)

If Bearing Reference Meridian is "Geodetic," this element matches with the Prime Meridian descriptor (Jmaitra)

Compound Element

Not an exact mapping

Compound Element

Compound Element

Compound Element

Crosswalk applies to grid data only, data type determined by FGDC 3.2. If vector fuzzy tolerance, then ISO 19111?

"Measure" from ISO 19103, includes type and units of measure

Content to be exported in "Other" XML section

Compound Element

Crosswalk applies to grid data only, data type determined by FGDC 3.2. If vector fuzzy tolerance, then ISO 19111?

"Measure" from ISO 19103, includes type and units of measure

Content to be exported in "Other" XML section

Compound Element

When FGDC Section 5.1 exists then create MD_Metadata.contentInfo.MD_FeatureCatalogueDescription. Create FC_FeatureCatalogue as a packet following MD_Metadata.

[See Note 3](#)

Compound Element

Compound Element

Compound Element

ISO 19110 does not spell out the MIN and MAX, it just provides a free text field to show the range

Content to be exported in "Other" XML section

Compound Element

Possible inclusion in ISO 19110

Compound Element

Create additional instance(s) of FGDC 2.1.2.1

Create additional instance(s) of FGDC 2.1.2.2

Create additional instance(s) of FGDC 2.1.2.2 or export to "Other" XML section

Compound Element

Compound Element

This is the name by which the distributor knows the resource, not necessarily the online name.

highly dependent on user interpretation of FGDC

Compound Element

6.4.1 and 6.4.4 are unique instances that map to the same ISO element.

Compound Element

Compound Element

The definition of the ISO element indicates it can be used for a version number and date. But the element is not repeatable, and has `CharacterString` as its domain.

[See Note 1](#)

Compound Element

Compound Element

Compound Element

Compound Element

Deprecated: Content to be exported in “Other” XML section

[See Note 2](#)

Compound Element

6.4.1 and 6.4.4 are unique instances that map to the same ISO element.

Content to be exported in "Other" XML section

Compound Element

FGDC Definition: "the date that the metadata were created or last updated." 7.1 should be earlier than either 7.2 or 7.3, if they are present.

FGDC definition: "the date of the latest review of the metadata entry." 7.2 should be later than 7.1, and earlier than 7.3, if they are present.

FGDC Definition: the date by which the metadata entry should be reviewed. 7.3, if it is a valid date, should be later than either 7.1 or 7.2, if they are present.

Deprecated: Content to be exported in "Other" XML section

Compound Element

Compound Element

Compound Element

ISO uses date or dateTime

Compound Element

Compound Element

FGDC definition: "the name of an online computer that contains the data set. "

Compound element, no mapping necessary

[Section 9 is covered by ISO 19108, Temporal Schema](#)

Compound element, no mapping necessary

Compound element, no mapping necessary

Compound element, no mapping necessary

Compound element, no mapping necessary

Deprecated: Content to be exported in "Other" XML section

Extension (to CI_Telephone) candidate- ISO-19115 -- B.3.2.6

FGDC Element

For further discussion:

2.5.1.3 Type of Source Media
4.1.2.1.1 Map Projection Name
4.1.2.2.1 Grid Coordinate System Name
4.1.2.2.3.1 UPS Zone Identifier
4.1.2.4.1 Planar Coordinate Encoding Method
4.1.2.4.2.1 Abscissa Resolution
4.1.2.4.2.2 Ordinate Resolution
4.2.1.2 Altitude Resolution
4.2.2.2 Depth Resolution
4.1.3 Local
5.1.2.8 Attribute Measurement Frequency
10.6 Contact TDD/TTY Telephone

No Match:

4.1.1.1 Latitude Resolution
4.1.1.2 Longitude Resolution
4.1.1.3 Geographic Coordinate Units
4.1.2.4.3.1 Distance Resolution
4.1.2.4.3.2 Bearing Resolution
4.1.2.4.4 Planar Distance Units
5.1.2.5 Beginning Date of Attribute Values
5.1.2.6 Ending Date of Attribute Values
5.1.2.8 Attribute Measurement Frequency
6.4.2.2.1.2 Access Instructions

Content to be exported in "Other" XML section

4.1.2.1.23.15 Landsat Number
4.1.2.1.23.16 Path Number
4.1.2.1.23.17 Scale Factor at Central Meridian
4.2.1.4 Altitude Encoding Method
4.2.2.4 Depth Encoding Method
5.1.2.4.2.4 Attribute Measurement Resolution
6.4.2.2.1.1.2 Dialup Instructions
6.5 Custom Order Process
7.7 Metadata Time Convention
10.4.1 Address Type

Discussion

These are elements subject to further consideration/consensus by subject experts:

Should an element be added to LI_Source, with the domain of MD_Medium?

[See Note 4](#)

[See Note 6](#)

Proposed ISO "Zone" is an Integer field, need to make an exception for alpha fields

ISO-19111 FDIS provides commonly used values, but these do not appear to be a fixed domain. (J.Maitra)

Mapping applies to grid data only, data type determined by FGDC 3.2. If vector fuzzy tolerance, then ISO 19111?

Not an exact mapping

Create additional instance(s) of FGDC 2.1.2.2 or export to "Other" XML section

Extension (to CI_Telephone) candidate- ISO-19115 -- Appendix B.3.2.6

These are elements subject to deprecation or extension:

Possible ISO-19110 equivalency; follow up w. R. Pearsall

Create additional instance(s) of FGDC 2.1.2.2 or export to "Other" XML section

Several alternatives suggested by SS and LW

These are elements to be considered for extension, unless marked by "Deprecate" (below).

Deprecate

Deprecate

Deprecate

XML Tag (FGDC)	XML Tag (FGDC)	FGDC ID#	ISO ID#	Description
idinfo	(citation, descript, timeperd, status, spdom, keywords, accconst)		Ident	MD_Metadata
citation (citeinfo)>		1.1	idCitation	MD_Metadata
descript (abstract, purpose, supplinf?)>		1.2		---
abstract (#PCDATA)>		1.2.1	idAbs	MD_Metadata
purpose (#PCDATA)>		1.2.2	idPurp	MD_Metadata
supplinf (#PCDATA)>		1.2.3	supplInfo	MD_Metadata
timeperd (timeinfo, current)>		1.3		---
timeinfo		1.3.1	tempEle	MD_Metadata
current (#PCDATA)>		1.3.2	exDesc	MD_Metadata
status (progress, update)>		1.4		---
progress (#PCDATA)>		1.4.1	idStatus	MD_Metadata
update (#PCDATA)>		1.4.2	maintFreq	MD_Metadata
spdom (bounding, dsgpoly*)>		1.5		---
bounding (westbc, eastbc, northbc, southbc)>		1.5.1	GeoBndBox	MD_Metadata
westbc (#PCDATA)>		1.5.1.1	westBL	MD_Metadata
eastbc (#PCDATA)>		1.5.1.2	eastBL	MD_Metadata
northbc (#PCDATA)>		1.5.1.3	northBL	MD_Metadata
southbc (#PCDATA)>		1.5.1.4	southBL	MD_Metadata
dsgpoly (dsgpolyo, dsgpolyx*)>		1.5.2		---
dsgpolyo ((grngpoin,grngpoin,grngpoin)		1.5.2.1	BoundPoly	MD_Metadata
grngpoin (gringlat,gringlon)>		1.5.2.1.1		MD_Metadata
gringlat (#PCDATA)>		1.5.2.1.1.1		MD_Metadata
gringlon (#PCDATA)>		1.5.2.1.1.2		MD_Metadata
gring (#PCDATA)>		1.5.2.1.2		MD_Metadata
dsgpolyx ((grngpoin,grngpoin,grngpoin)		1.5.2.2	BoundPoly	MD_Metadata
grngpoin (gringlat,gringlon)>		1.5.2.2.1		MD_Metadata
gringlat (#PCDATA)>		1.5.2.2.1.1		MD_Metadata
gringlon (#PCDATA)>		1.5.2.2.1.2		MD_Metadata
gring (#PCDATA)>		1.5.2.2.2		MD_Metadata
keywords (theme+, place*, stratum*, temporal*		1.6	descKeys	MD_Metadata
theme (themekt, themekey+)>		1.6.1	keyTyp	MD_Metadata
themekt (#PCDATA)>		1.6.1.1	thesaName	MD_Metadata
themekey (#PCDATA)>		1.6.1.2	keyword	MD_Metadata
place (placekt, placekey+)>		1.6.2	keyTyp	MD_Metadata
placekt (#PCDATA)>		1.6.2.1	thesaName	MD_Metadata
placekey (#PCDATA)>		1.6.2.2	keyword	MD_Metadata
stratum (stratkt, stratkey+)>		1.6.3	keyTyp	MD_Metadata
stratkt (#PCDATA)>		1.6.3.1	thesaName	MD_Metadata
stratkey (#PCDATA)>		1.6.3.2	keyword	MD_Metadata
temporal (tempkt, tempkey+)>		1.6.4	keyTyp	MD_Metadata
tempkt (#PCDATA)>		1.6.4.1	thesaName	MD_Metadata
tempkey (#PCDATA)>		1.6.4.2	keyword	MD_Metadata
acconst (#PCDATA)		1.7	accessConsts & othConsts	MD_Metadata
useconst (#PCDATA)		1.8	useConsts & othConsts	MD_Metadata

ptcontac (cntinfo)>	1.9	idPoC	MD_Metadata
browse (browsen, browsed, browset)>	1.10	graphOver	MD_Metadata
browsen (#PCDATA)>	1.10.1	bgFileName	MD_Metadata
browsed (#PCDATA)>	1.10.2	bgFileDesc	MD_Metadata
browset (#PCDATA)>	1.10.3	bgFileType	MD_Metadata
datacred (#PCDATA)	1.11	idCredit	MD_Metadata
secinfo (secsys, secclass, sechandl)>	1.12	SecConsts	---
secsys (#PCDATA)>	1.12.1	classSys	MD_Metadata
secclass (#PCDATA)>	1.12.2	Class	MD_Metadata
sechandl (#PCDATA)>	1.12.3	handDesc	MD_Metadata
native (#PCDATA)>	1.13	envirDesc	MD_Metadata
crossref (citeinfo)>	1.14	MD_Metadata.identification.M	

Discussion

a.identificationInfo.MD_Identification

a.identificationInfo.MD_Identification.citation

a.identificationInfo.MD_Identification.abstract

a.identificationInfo.MD_Identification.purpose

a.identificationInfo.MD_DataIdentification.supplementalInformation

a.identificationInfo.MD_DataIdentification.extent.EX_Extent.temporalElement

a.identificationInfo.MD_DataIdentification.extent.EX_Extent.description

a.identificationInfo.MD_Identification.status

a.identificationInfo.MD_Identification.resourceMaintenance.MD_Maintenance.maintenanceAndUpdateFrequency

a.identificationInfo.MD_DataIdentification.extent.EX_Extent.geographicElement.EX_GeographicBoundingBox

a.identificationInfo.MD_DataIdentification.extent.EX_Extent.geographicElement.EX_GeographicBoundingBox.westBoundLongitude

a.identificationInfo.MD_DataIdentification.extent.EX_Extent.geographicElementgeographicBox.EX_GeographicBoundingBox

a.identificationInfo.MD_DataIdentification.geographicBox.EX_GeographicBoundingBox.northBoundLatitude

a.identificationInfo.MD_DataIdentification.extent.EX_Extent.geographicElementgeographicBox.EX_GeographicBoundingBox

a.identificationInfo.MD_DataIdentification.extent.EX_Extent.geographicElement.EX_BoundingPolygon (EX_Extent.extent)

[See Note7](#)

[See Note7](#)

[See Note7](#)

[See Note7](#)

a.identificationInfo.MD_DataIdentification.extent.EX_Extent.geographicElement.EX_BoundingPolygon (EX_Extent.extent)

[See Note7](#)

[See Note7](#)

[See Note7](#)

[See Note7](#)

a.identificationInfo.MD_Identification.descriptiveKeywords

a.identificationInfo.MD_Identification.descriptiveKeywords.MD_Keywords.type = theme (code 005)

a.identificationInfo.MD_Identification.descriptiveKeywords.MD_Keywords.thesaurusName

a.identificationInfo.MD_Identification.descriptiveKeywords.MD_Keywords.keyword

a.identificationInfo.MD_Identification.descriptiveKeywords.MD_Keywords.tye = place (code 002)

a.identificationInfo.MD_Identification.descriptiveKeywords.MD_Keywords.thesaurusName

a.identificationInfo.MD_Identification.descriptiveKeywords.MD_Keywords.keyword

a.identificationInfo.MD_Identification.descriptiveKeywords.MD_Keywords.tye = stratum (code 003)

a.identificationInfo.MD_Identification.descriptiveKeywords.MD_Keywords.thesaurusName

a.identificationInfo.MD_Identification.descriptiveKeywords.MD_Keywords.keyword

a.identificationInfo.MD_Identification.descriptiveKeywords.MD_Keywords.tye = temporal (code 004)

a.identificationInfo.MD_Identification.descriptiveKeywords.MD_Keywords.thesaurusName

a.identificationInfo.MD_Identification.descriptiveKeywords.MD_Keywords.keyword

a.identificationInfo.MD_Identification.resourceConstraints.MD_LegalConstraints.otherConstraints, and set MD_Metad

a.identificationInfo.MD_Identification.resourceConstraints.MD_LegalConstraints.otherConstraints, and set MD_Metad

a.identificationInfo.MD_Identification.pointOfContact
a.identificationInfo.MD_Identification.graphicOverview
a.identificationInfo.MD_Identification.graphicOverview.MD_BrowseGraphic.fileName
a.identificationInfo.MD_Identification.graphicOverview.MD_BrowseGraphic.fileDescription
a.identificationInfo.MD_Identification.graphicOverview.MD_BrowseGraphic.fileType
a.identificationInfo.MD_Identification.credit

a.identificationInfo.MD_Identification.resourceConstraints.MD_SecurityConstraints.classificationSystem
a.identificationInfo.MD_Identification.resourceConstraints.MD_SecurityConstraints.classification
a.identificationInfo.MD_Identification.resourceConstraints.MD_SecurityConstraints.handlingDescription
a.identificationInfo.MD_DataIdentification.environmentDescription
MD_Identification.aggregationInfo.aggregateDatasetName or aggregateDatasetIdentifier (with associationType = 001 "

ndLongitude
ngBox.northBoundLatitude

ngBox.snorthBoundLatitude

entTypeCode = 1)

entTypeCode = 0)

ata.identificationInfo.MD_Identification.resourceConstraints.MD_LegalConstraints.accessConstraints value to oth

ata.identificationInfo.MD_Identification.resourceConstraints.MD_LegalConstraints.useConstraints to other (008)

crossReference")

XML Tag (FGDC)	XML Tag (FGDC)	XML Tag (FGDC)	FGDC ID#	XML Tag (ISO)
dataqual	(attracc?, logic, complete, posacc?, lineage, cloud?)			DataQual
attracc	(attraccr, qattracc*)		2.1	DQThemAcc
	attraccr (#PCDATA)>		2.1.1	evalMethDesc
	qattracc (attraccv, attracce)>		2.1.2	DQQuanAttAcc
	attraccv (#PCDATA)>		2.1.2.1	quanVal
	attracce (#PCDATA)>		2.1.2.2	measDesc
	logic (#PCDATA)>		2.2	evalMethDesc
	complete (#PCDATA)>		2.3	evalMethDesc
posacc	(horizpa?, vertacc?)		2.4	measResult
	horizpa (horizpar, qhorizpa*)>		2.4.1	measResult
	horizpar (#PCDATA)>		2.4.1.1	evalMethDesc
	qhorizpa (horizpav, horizpae)>		2.4.1.2	
	horizpav (#PCDATA)>		2.4.1.2.1	DQPosAcc
	horizpae (#PCDATA)>		2.4.1.2.2	measDesc
	vertacc (vertaccr, qvertpa*)>		2.4.2	measResult
	vertaccr (#PCDATA)>		2.4.2.1	evalMethDesc
	qvertpa (vertaccv, vertacce)>		2.4.2.2	
	vertaccv (#PCDATA)>		2.4.2.2.1	
	vertacce (#PCDATA)>		2.4.2.2.2	measDesc
lineage	(srcinfo*, procstep+)		2.5	Lineage
	srcinfo (srccite , srcscale? , typesrc , srctime , srccitea , srccontr)		2.5.1	Source
	srccite (citeinfo)>		2.5.1.1	srcCitatn
	srcscale (#PCDATA)>		2.5.1.2	srcScale
	typesrc (#PCDATA)>		2.5.1.3	srcDesc
	srctime (timeinfo, srccurr)>		2.5.1.4	srcExt
	timeinfo		9	
	srccurr (#PCDATA)>		2.5.1.4.1	srcExt
	srccitea (#PCDATA)>		2.5.1.5	resAltTitle
	srccontr (#PCDATA)>		2.5.1.6	srcDesc
	procstep (procdesc , srcused* , procdate , proctime? , srcprod* , srcused?)		2.5.2	prcStep
	procdesc (#PCDATA)>		2.5.2.1	stepDesc
	srcused (#PCDATA)>		2.5.2.2	resAltTitle

procdate (#PCDATA)>	2.5.2.3	stepDateTm
proctime (#PCDATA)>	2.5.2.4	stepDateTm
srcprod (#PCDATA)>	2.5.2.5	resAltTitle
proccont (cntinfo)>	2.5.2.6	RespParty
cloud (#PCDATA)>	2.6	cloudCovPer

odDescription

ntativeResult.value
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odDescription
escription

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ption

Extent.temporalExtent.EX_TemporalExtent.extent

Extent.description
Citation.alternateTitle

tion
.LI_Source.sourceCitation.CI_Citation.alternateTitle

ne
:eCitation.CI_Citation.alternateTitle
sor

XML Tag (FGDC)	XML Tag (FGDC)	XML Tag (FGDC)	FGDC ID#	XML Tag (ISO)	ISO ID#
spdoinfo	(indspref?, (direct, ((ptvctinf rastinfo)?)?)		3		---
indspref	(#PCDATA)>		3.1	spatRpType	MD_Metadata.r
direct	(#PCDATA)>		3.2	spatRpType	MD_Metadata.ic
ptvctinf	((sdtstern+ vpfterm))>		3.3	VectSpatRep	MD_Metadata.s
sdtstern	(sdtstype, ptvctcnt?)>		3.3.1		---
sdtstype	(#PCDATA)>		3.3.1.1		MD_Metadata.s
ptvctcnt	(#PCDATA)>		3.3.1.2		MD_Metadata.s
vpfterm	(vpflevel, vpfinfo+)>		3.3.2		---
vpflevel	(#PCDATA)>		3.3.2.1	topLvl	MD_Metadata.s
vpfinfo	(vpftype, ptvctcnt?)>		3.3.2.2		---
vpftype	(#PCDATA)>		3.3.2.2.1	geoObjTyp	MD_Metadata.s
ptvctcnt	(#PCDATA)>		3.3.2.2.2	geoObjCnt	MD_Metadata.s
rastinfo	(rasttype, (rowcount, colcount, vrtcount?)?)>		3.4	GridSpatRep	---
rasttype	(#PCDATA)>		3.4.1	numDims	MD_Metadata.s
rowcount	(#PCDATA)>		3.4.2	dimSize	MD_Metadata.s
colcount	(#PCDATA)>		3.4.3	dimSize	MD_Metadata.s
vrtcount	(#PCDATA)>		3.4.4	dimSize	MD_Metadata.s

Description Discussion

referenceSystemInfo.MD_ReferenceSystem.referenceSystemIdentifier.RS_Identifier.code
identification | When FGDC-3.2 = "point," then in ISO type = vector (001)
spatialRepresentationInfo.MD_VectorSpatialRepresentation

spatialRepresentationInfo.MD_VectorSpatialRepresentation.geometricObject.MD_GeometricObjects.geometricObj
spatialRepresentationInfo.MD_VectorSpatialRepresentation.geometricObject.MD_GeometricObjects.geometricObj

spatialRepresentationInfo.MD_VectorSpatialRepresentation.topologyLevel

spatialRepresentationInfo.MD_VectorSpatialRepresentation.geometricObject.MD_GeometricObjects.geometricObj
spatialRepresentationInfo.MD_VectorSpatialRepresentation.geometricObject.MD_GeometricObjects.geometricObj

spatialRepresentationInfo.MD_GridSpatialRepresentation.numberOfDimensions

spatialRepresentationInfo.MD_GridSpatialRepresentation.axisDimensionProperties.MD_Dimension.dimensionSize

spatialRepresentationInfo.MD_GridSpatialRepresentation.axisDimensionProperties.MD_Dimension.dimensionSize

spatialRepresentationInfo.MD_GridSpatialRepresentation.axisDimensionProperties.MD_Dimension.dimensionSize

jectType
jectCount

jectType
jectCount

(dimensionName = row, code 001)
(dimensionName = column, code 002)
(dimensionName = vertical, code 003)

XML Tag (FGDC)	XML Tag (FGDC)	XML Tag (FGDC)	XML Tag (FGDC)	FGDC ID#	XML Tag (ISO)	ISO ID#
spref (horizsys?, vertdef?)				4		
horizsys ((geograph planar+ local), geodetic?)>				4.1		---
geograph (latres, longres, geogunit)>				4.1.1	dimResol	MD_Metadata.referenceSys
latres (#PCDATA)>				4.1.1.1		NO MATCH
longres (#PCDATA)>				4.1.1.2		NO MATCH
geogunit (#PCDATA)>				4.1.1.3		NO MATCH
planar ((mapproj gridsys localp), planci)>				4.1.2		---
mapproj (mapprojn, (albers azime				4.1.2.1		---
obqmerc orthogr polarst polycon robinson sinusoid spaceobq stereo transmer vdc						
mapprojn (#PCDATA)>				4.1.2.1.1	identAuth	MD_Metadata.referenceSys
					AND	
					identCode	
albers (stdparll+, longc				4.1.2.1.2		Uses elements 4.1.2.1.23.1, .2, .3, .4, .5
azimequi (longcm, latprj				4.1.2.1.3		Uses elements 4.1.2.1.23.1
equicon (stdparll+, long				4.1.2.1.4		Uses elements 4.1.2.1.23.1
equirect (stdparll, longc				4.1.2.1.5		Uses elements 4.1.2.1.23.1
gvnsp (heightpt, longp				4.1.2.1.6		Uses elements 4.1.2.1.23.1
gnomonic (longpc, latprj				4.1.2.1.7		Uses elements 4.1.2.1.23.1
lamberta (longpc, latprj				4.1.2.1.8		Uses elements 4.1.2.1.23.1
lambertc (stdparll+, long				4.1.2.1.9		Uses elements 4.1.2.1.23.1
mercator ((stdparll sfeq				4.1.2.1.10		Uses elements 4.1.2.1.23.1
modsak (feast, fnorth)>				4.1.2.1.11		Uses elements 4.1.2.1.23.4
miller (longcm, feast, fr				4.1.2.1.12		Uses elements 4.1.2.1.23.1
obqmerc (sfctrlin, (obql				4.1.2.1.13		Uses elements 4.1.2.1.23.1
orthogr (longpc, latprj				4.1.2.1.14		Uses elements 4.1.2.1.23.1
polarst (svlong, (stdparll				4.1.2.1.15		Uses elements 4.1.2.1.23.1
polycon (longcm, latprj				4.1.2.1.16		Uses elements 4.1.2.1.23.1
robinson (longpc, feast, f				4.1.2.1.17		Uses elements 4.1.2.1.23.1
sinusoid (longcm, feast, f				4.1.2.1.18		Uses elements 4.1.2.1.23.1
spaceobq (landsat, path				4.1.2.1.19		Uses elements 4.1.2.1.23.1
stereo (longpc, latprj				4.1.2.1.20		Uses elements 4.1.2.1.23.1
transmer (sfctrmer, long				4.1.2.1.21		Uses elements 4.1.2.1.23.1
vdgrin (longcm, feast, fr				4.1.2.1.22		Uses elements 4.1.2.1.23.1
mapproj (azimptl?,				4.1.2.1.23		---
azimangl?, feast?,						
fnorth?, heightpt?,						
landsat?, latprj?,						
latprio?, longcm?,						
stdparll (#PCDATA)				4.1.2.1.23.1	ProjParas	
longcm (#PCDATA)				4.1.2.1.23.2	stanParal	MD_Metadata.referenceSys
latprjo (#PCDATA)				4.1.2.1.23.3	longCntMe	MD_Metadata.referenceSys
feast (#PCDATA)				4.1.2.1.23.4	latProjOri	MD_Metadata.referenceSys
fnorth (#PCDATA)				4.1.2.1.23.5	falEastng	MD_Metadata.referenceSys
sfequat (#PCDATA)				4.1.2.1.23.6	falNorthng	MD_Metadata.referenceSys
heightpt (#PCDATA)				4.1.2.1.23.7	scfFacEqu	MD_Metadata.referenceSys
					hgtProsPt	MD_Metadata.referenceSys

longpc (#PCDATA)	4.1.2.1.23.8	longProjCn MD_Metadata.referenceSy:
latprjc (#PCDATA)	4.1.2.1.23.9	latProjCnt MD_Metadata.referenceSy:
sfctrlin (#PCDATA)	4.1.2.1.23.10	scIFacCnt MD_Metadata.referenceSy:
obqlazim (azimangl, azir	4.1.2.1.23.11	ObLineAzi ---
azimangl (#PCDATA)>	4.1.2.1.23.11.1	aziAngle MD_Metadata.referenceSy:
azimptl (#PCDATA)>	4.1.2.1.23.11.2	aziPtLong MD_Metadata.referenceSy:
obqlpt ((obqllat, obqllon	4.1.2.1.23.12	ObLinePt ---
obqllat (#PCDATA)>	4.1.2.1.23.12.1	obLineLat MD_Metadata.referenceSy:
obqllong (#PCDATA)>	4.1.2.1.23.12.2	obLineLonç MD_Metadata.referenceSy:
svlong (#PCDATA)	4.1.2.1.23.13	stVrLongP MD_Metadata.referenceSy:
sfprjorg (#PCDATA)	4.1.2.1.23.14	scIFacPrO MD_Metadata.referenceSy:
landsat (#PCDATA)	4.1.2.1.23.15	NO MATCH
pathnum (#PCDATA)	4.1.2.1.23.16	NO MATCH
sfctrmer (#PCDATA)	4.1.2.1.23.17	NO MATCH
otherprj (#PCDATA)	4.1.2.1.23.18	MD_Metadata.referenceSy:
gridsys (gridsysn, utm ups spcs	4.1.2.2	refSysInfo ---
gridsysn (#PCDATA)>	4.1.2.2.1	identAuth MD_Metadata.referenceS
		AND ystemInfo.MD_Reference
		identCode System.referenceSystemI
		dentifier.RS_Identifier.auth
		ority and code
		(selection from codelist in 4
utm (utmzone,	4.1.2.2.2	
transmer)>		
utmzone (#PCDATA)>	4.1.2.2.2.1	MD_Metadata.referenceSy:
ups (upszone,	4.1.2.2.3	(selection from codelist in 4
polarst)>		
upszone (#PCDATA)>	4.1.2.2.3.1	MD_Metadata.referenceSy:
spcs (spcszone,	4.1.2.2.4	(selection from codelist in 4
(lambertc transmer		
obqmerc polycon))>		
spcszone (#PCDATA)>	4.1.2.2.4.1	MD_Metadata.referenceSy:
arcsys (arczone,	4.1.2.2.5	(selection from codelist in 4
(equirect azimequi))>		
arczone (#PCDATA)>	4.1.2.2.5.1	MD_Metadata.referenceSy:
othergrd (#PCDATA)>	4.1.2.2.6	(selection from codelist in 4
localp (localpd, localpgi)>	4.1.2.3	---
localpd (#PCDATA)>	4.1.2.3.1	MD_Metadata.referenceSy:
localpgi (#PCDATA)>	4.1.2.3.2	MD_Metadata.referenceSy:
planci (plance, (coordrep distbrep	4.1.2.4	---
plance (#PCDATA)>	4.1.2.4.1	NO MATCH
coordrep (absres, ordres	4.1.2.4.2	---
absres (#PCDATA)>	4.1.2.4.2.1	MD_Metadata.spatialRepre
ordres (#PCDATA)>	4.1.2.4.2.2	MD_Metadata.spatialRepre
distbrep (distres, bearres	4.1.2.4.3	---
distres (#PCDATA)>	4.1.2.4.3.1	NO MATCH
bearres (#PCDATA)>	4.1.2.4.3.2	NO MATCH
bearunit (#PCDATA)>	4.1.2.4.3.3	NO MATCH
bearrefd (#PCDATA)>	4.1.2.4.3.4	NO MATCH
bearrefm (#PCDATA)>	4.1.2.4.3.5	NO MATCH

	plandu (#PCDATA)>	4.1.2.4.4	NO MATCH
local (localdes , localgeo)>		4.1.3	---
	localdes (#PCDATA)>	4.1.3.1	MD_Metadata.referenceSys
	localgeo (#PCDATA)>	4.1.3.2	MD_Metadata.referenceSys
geodetic (horizdn? , ellips , semiaxis , denflat)>		4.1.4	---
	horizdn (#PCDATA)>	4.1.4.1	MD_Metadata.referenceSys
	ellips (#PCDATA)>	4.1.4.2	MD_Metadata.referenceSys
	semiaxis (#PCDATA)>	4.1.4.3	semiMajA> MD_Metadata.referenceSys
	denflat (#PCDATA)>	4.1.4.4	denFlatRat MD_Metadata.referenceSys
vertdef (altsys? , depthsys?)>		4.2	---
altsys (altdatum , altres+ , altunits , altenc)>		4.2.1	---
	altdatum (#PCDATA)>	4.2.1.1	vertDatum MD_Metadata.identification
	altres (#PCDATA)>	4.2.1.2	dataScale MD_Metadata.spatialRepre
	altunits (#PCDATA)>	4.2.1.3	vertUoM MD_Metadata.spatialRepre
	altenc (#PCDATA)>	4.2.1.4	NO MATCH
depthsys (depthdn , depthres+ , depthdu , depthm)>		4.2.2	---
	depthdn (#PCDATA)>	4.2.2.1	vertDatum MD_Metadata.identification
	depthres (#PCDATA)>	4.2.2.2	dataScale MD_Metadata.spatialRepre
	depthdu (#PCDATA)>	4.2.2.3	vertUoM MD_Metadata.spatialRepre
	depthm (#PCDATA)>	4.2.2.4	NO MATCH

Description Discussion

[See Note 5](#)

stemInfo.MD_ReferenceSystem.referenceSystemIdentifier.RS_Identifier.code (= FGDC Geographic)

[yrin | otherprj | mapproj](#))>

stemInfo.MD [See Note 4](#)

[See Note 8](#)

2, .3, .4, .5
1, .2, .3, .4, .5
1, .2, .4, .5
7, .8, .9, .4, .5
8, .9, .4, .5
8, .9, .4, .5
1, .2, .3, .4, .5
1, .6, .2, .4, .5
4, .5
2, .4, .5
10, .11, .12, .3, .4, .5
8, .9, .4, .5
13, .1, .14, .4, .5
2, .3, .4, .5
8, .4, .5
8, .4, .5
15, .16
8, .9, .4, .5
17, .2, .3, .4, .5
2, .4, .5

stemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.standardParellel
stemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.longitudeOfCentralMeridian
stemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.latitudeOfProjectionOrigin
stemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.falseEasting
stemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.falseNorthing
stemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.scaleFactorAtEquator
stemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.heightOfProspectivePointAboveSurface

stemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.longitudeOfProjectionCenter
stemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.latitudeOfProjectionCenter
stemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.scaleFactorAtCenterLine

stemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.obliqueLineAzimuthParameter.MD_ObliqueLir
stemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.obliqueLineAzimuthParameter.MD_ObliqueLir

stemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.obliqueLinePointParameter.MD_ObliqueLineP
stemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.obliqueLinePointParameter.MD_ObliqueLineP
stemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.straightVerticalLongitudeFromPole
stemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.scaleFactorAtProjectionOrigin

stemInfo.MD_ReferenceSystem.referenceSystemIdentifier.RS_Identifier.code

[See Note 6](#)

4.1.2.2.1) Also contains 4.1.2.1.21

stemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.zone

4.1.2.2.1) Also contains 4.1.2.1.15

stemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.zone

4.1.2.2.1) Also contains 4.1.2.1.9 or 4.1.2.1.21 or 4.1.2.1.13 or 4.1.2.1.16

stemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.

4.1.2.2.1) Also contains 4.1.2.1.5 or 4.1.2.1.3

stemInfo.MD_CRS.projectionParameters.MD_ProjectionParameters.

4.1.2.2.1)

stemInfo.MD_ReferenceSystem.referenceSystemIdentifier.RS_Identifier.code

stemInfo.MD_ReferenceSystem.referenceSystemIdentifier.RS_Identifier.code

resentationInfo.MD_GridSpatialRepresentation.axisDimensionProperties.MD_Dimension.resolution.Measure (dimens

resentationInfo.MD_GridSpatialRepresentation.axisDimensionProperties.MD_Dimension.resolution.Measure (dimens

stemInfo.MD_ReferenceSystem.referenceSystemIdentifier.RS_Identifier.code
stemInfo.MD_ReferenceSystem.referenceSystemIdentifier.RS_Identifier.code

stemInfo.MD_CRS.datum.RS_Identifier.code
stemInfo.MD_CRS.ellipsoid.RS_Identifier.code
stemInfo.MD_CRS.ellipsoidParameters.MD_EllipsoidParameters.semiMajorAxis
stemInfo.MD_CRS.ellipsoidParameters.MD_EllipsoidParameters.denominatorOfFlatteningRatio
[See Note 5](#)

Info.MD_DataIdentification.extent.EX_Extent.verticalElement.EX_VerticalExtent.verticalDatum.SC_VerticalDatum.c
resentationInfo.MD_GridSpatialRepresentation.axisDimensionProperties.MD_Dimension.resolution.Measure (dimens
resentationInfo.MD_GridSpatialRepresentation.axisDimensionProperties.MD_Dimension.resolution.Measure (dimens

Info.MD_DataIdentification.extent.EX_Extent.verticalElement.EX_VerticalExtent.verticalDatum.SC_VerticalDatum.c
resentationInfo.MD_GridSpatialRepresentation.axisDimensionProperties.MD_Dimension.resolution.Measure (dimens
resentationInfo.MD_GridSpatialRepresentation.axisDimensionProperties.MD_Dimension.resolution.Measure (dimens

reAzimuth.azimuthAngle
reAzimuth.azimuthMeasurePointLongitude

oint.obliqueLineLatitude
oint.obliqueLineLongitude

sion=column code (002))
sion=row code (001))

datumID.RS_Identifier.code
sion=vertical code (003)
sion=vertical code (003)

datumID.RS_Identifier.code
sion=vertical code (003)
sion=vertical code (003)

XML Tag (FGDC)	XML Tag (FGDC)	XML Tag (FGDC)	FGDC ID#	Description	Discussion
eainfo	(detailed*, overview*)		5		See Note 3
detailed	(enttyp, attr*)>		5.1	Feature Catalogue	
enttyp	(enttyp, enttypd, enttypds) >		5.1.1	Entity Type	
	enttyp (PCDATA)>		5.1.1.1	Entity Type Label	
	enttypd (PCDATA)>		5.1.1.2	Entity Type Definition	
	enttypds (PCDATA)>		5.1.1.3	Entity Type Definition Source	
attr	(attrlabl, attrdef, attrdefs, attrdomv+, (begdatea, enddatea, attrmfrq, attrmres, attrva, attrvae)) >		5.1.2	AttributeFeature	
	attrlabl (PCDATA)>		5.1.2.1	Attribute Label	
	attrdef (PCDATA)>		5.1.2.2	Attribute Definition	
	attrdefs (PCDATA)>		5.1.2.3	Attribute Definition Source	
	attrdomv ((edom+ rdom codesetd udom))>		5.1.2.4	Attribute Domain Values	
	edom (edomv, edomvd, edomvds, attr*)>		5.1.2.4.1	Enumerated Domain	
	edomv (PCDATA)>		5.1.2.4.1.1	Enumerated Domain Value	
	edomvd (PCDATA)>		5.1.2.4.1.2	Enumerated Domain Value Definition	
	edomvds (PCDATA)>		5.1.2.4.1.3	Enumerated Domain Value Definition Source	
	rdom (rdommin, rdommax, attrunit?, attrmres?)>		5.1.2.4.2	Range Domain	
	rdommin (PCDATA)>		5.1.2.4.2.1	Range Domain Minimum	
	rdommax (PCDATA)>		5.1.2.4.2.2	Range Domain Maximum	
	attrunit (PCDATA)>		5.1.2.4.2.3	Attribute Units of Measure	
	attrmres (PCDATA)>		5.1.2.4.2.4	Attribute Measurement Resolution	
	codesetd (codesetn, codesets)>		5.1.2.4.3	Codeset Domain	
	codesetn (PCDATA)>		5.1.2.4.3.1	Codeset Name	
	codesets (PCDATA)>		5.1.2.4.3.2	Codeset Source	
	udom (PCDATA)>		5.1.2.4.4	Unrepresentable Domain	
	begdatea (PCDATA)>		5.1.2.5	Beginning Date of Attribute Values	
	enddatea (PCDATA)>		5.1.2.6	Ending Date of Attribute Values	
	attrvai (attrva, attrvae)>		5.1.2.7	Attribute Value Accuracy Information	
	attrva (PCDATA)>		5.1.2.7.1	Attribute Value Accuracy	
	attrvae (PCDATA)>		5.1.2.7.2	Attribute Value Accuracy Explanation	
	attrmfrq (PCDATA)>		5.1.2.8	Attribute Measurement Frequency	
overview	(eaover, eadetcit+)>		5.2	Overview Description	
	eaover (PCDATA)>		5.2.1	Entity and Attribute Overview	
	eadetcit (PCDATA)>		5.2.2	Entity and Attribute Detail Citation	

ISO 19110 ID# Description Discussion

FC_FeatureCatalogue

FC_FeatureCatalogue.FC_FeatureType

FC_FeatureCatalogue.FC_FeatureType.name

FC_FeatureCatalogue.FC_FeatureType.definition

FC_FeatureCatalogue.FC_FeatureType.definitionSource

FC_FeatureCatalogue.FC_FeatureType.FC_FeatureAttribute

FC_FeatureCatalogue.FC_FeatureType.FC_FeatureAttribute.name

FC_FeatureCatalogue.FC_FeatureType.FC_FeatureAttribute.definition

FC_FeatureCatalogue.definitionSource

FC_FeatureCatalogue.FC_FeatureType.FC_FeatureAttribute.FC_FeatureAttributeValue

FC_FeatureCatalogue.FC_FeatureType.FC_FeatureAttribute.FC_FeatureAttributeValue.label

FC_FeatureCatalogue.FC_FeatureType.FC_FeatureAttribute.FC_FeatureAttributeValue.definition

FC_FeatureCatalogue.definitionSource

FC_FeatureCatalogue.FC_FeatureType.FC_FeatureAttribute.valueDomain

FC_FeatureCatalogue.FC_FeatureType.FC_FeatureAttribute.valueDomain

FC_FeatureCatalogue.FC_FeatureType.FC_FeatureAttribute.valueMeasurementUnit

NO MATCH

FC_FeatureCatalogue.definitionSource

FC_FeatureCatalogue.definitionSource

FC_FeatureCatalogue.FC_FeatureType.FC_FeatureAttribute.valueDomain

NO MATCH

NO MATCH

MD_Metadata.dataQualityInfo.DQ_DataQuality.report.DQ_QuantitativeAttributeAccuracy.result.DQ_QuantitativeAttributeAccuracy.measureDescr

MD_Metadata.dataQualityInfo.DQ_DataQuality.report.DQ_QuantitativeAttributeAccuracy.measureDescr

NO MATCH

MD_Metadata.contentInfo.MD_FeatureCatalogueDescription.featureCatalogueCitation.CI_Citation.other

Append to MD_Metadata.contentInfo.MD_FeatureCatalogueDescription.featureCatalogueCitation.CI_Citation

QuantitativeResult.value
Description

OtherCitationDetails
OtherCitationDetails

XML Tag (FGDC)	XML Tag (FGDC)	XML Tag (FGDC)	XML Tag (FGDC)	FGDC ID#	XML Tag (ISO)	ISO ID#
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distinfo (distrib, (resdesc?, distliab, stdorder*, custom?, techpreq?, availabl?))

distrib (cntinfo)>	6.1	RespParty	MD_Metadata.distribution
resdesc (#PCDATA)>	6.2	orDesc	MD_Metadata.distribution
distliab (#PCDATA)>	6.3		MD_Metadata.identificatic
stdorder ((nondig digform+), fees, ordering?, turnarnd?)>	6.4		---
nondig (#PCDATA)>	6.4.1	Medium	MD_Metadata.distribution
digform (digtinfo, digtopt)>	6.4.2		---
digtinfo (formname, ((formvern formverd), for	6.4.2.1		---
formname (#PCDATA)>	6.4.2.1.1	formatName	MD_Metadata.distribution
formvern (#PCDATA)>	6.4.2.1.2	formatVer	MD_Metadata.distribution
formverd (#PCDATA)>	6.4.2.1.3	formatVer	MD_Metadata.distribution
formspec (#PCDATA)>	6.4.2.1.4	formatSpec	MD_Metadata.distribution
formcont (#PCDATA)>	6.4.2.1.5		APPEND to MD_Metadata.distributio nInfo.MD_Distribution.dis tributionFormat.MD_Form at.specification
filedec (#PCDATA)>	6.4.2.1.6	fileDecmTec	MD_Metadata.distribution
transize (#PCDATA)>	6.4.2.1.7	transSize	MD_Metadata.distribution
digtopt (((onlinopt offoptn)+)>	6.4.2.2	DigTranOps	---
onlinopt (computer+, accinstr?, on	6.4.2.2.1	OnlineRes1	MD_Metadata.distribution
computer ((networka dialinst))>	6.4.2.2.1.1		---
networka (networkr+)>	6.4.2.2.1.1.1		---
networkr (#PCDATA)>	6.4.2.2.1.1.1.1	orName	MD_Metadata.distribution
dialinst (lowbps, highbps?, numda	6.4.2.2.1.1.2	Protoco	
lowbps (#PCDATA)>	6.4.2.2.1.1.2.1		
highbps (#PCDATA)>	6.4.2.2.1.1.2.2		
numdata (#PCDATA)>	6.4.2.2.1.1.2.3		
numstop (#PCDATA)>	6.4.2.2.1.1.2.4		Deprecate
parity (#PCDATA)>	6.4.2.2.1.1.2.5		
compress (#PCDATA)>	6.4.2.2.1.1.2.6		
dialtel (#PCDATA)>	6.4.2.2.1.1.2.7		
dialfile (#PCDATA)>	6.4.2.2.1.1.2.8		
accinstr (#PCDATA)>	6.4.2.2.1.2		MD_Metadata.distribution
oncomp (#PCDATA)>	6.4.2.2.1.3	orDesc	MD_Metadata.distribution
offoptn (offmedia, reccap?, recfmt	6.4.2.2.2	offLineMed	MD_Metadata.distribution
offmedia (#PCDATA)>	6.4.2.2.2.1	medName	MD_Metadata.distribution
reccap (recden+, recdenu)>	6.4.2.2.2.2		---
recden (#PCDATA)>	6.4.2.2.2.2.1	medDensity	MD_Metadata.distribution
recdenu (#PCDATA)>	6.4.2.2.2.2.2	medDenUnit	MD_Metadata.distribution
recfmt (#PCDATA)>	6.4.2.2.2.3	medFormat	MD_Metadata.distribution
compat (#PCDATA)>	6.4.2.2.2.4	medNote	MD_Metadata.distribution
fees (#PCDATA)>	6.4.3	resFees	MD_Metadata.distribution
ordering (#PCDATA)>	6.4.4	ordInstr	MD_Metadata.distribution
turnarnd (#PCDATA)>	6.4.5	ordTurn	MD_Metadata.distribution
custom (#PCDATA)>	6.5		Append to 6.4.4

techpreq (#PCDATA)>
[availabl \(timeinfo\)>](#)

6.6
6.7

suppInfo MD_Metadata.identificatio
planAvDtTm MD_Metadata.distribution

Description Discussion

Info.MD_Distribution.distribution.MD_Distributor.distributorContact
Info.MD_Distribution.transferOptions.MD_DigitalTransferOptions.onLine.CI_OnlineResource.description
[Info.MD_Identification.resourceConstraints.MD_LegalConstraints.otherConstraints](#)
Info.MD_Distribution.distribution.MD_Distributor.distributorTransferOptions.MD_DigitalTransferOptions.offLi

Info.MD_Distribution.distributionFormat.MD_Format.formatName
Info.MD_Dist [See Note 1](#)
Info.MD_Dist
Info.MD_Distribution.distributionFormat.MD_Format.specification
[Deprecate](#)

Info.MD_Distribution.distributionFormat.MD_Format.fileDecompressionTechnique
Info.MD_Distribution.transferOptions.MD_DigitalTransferOptions.transferSize

Info.MD_Distribution.transferOptions.MD_DigitalTransferOptions.onLine

Info.MD_Distribution.transferOptions.MD_DigitalTransferOptions.onLine.CI_OnlineResource.name

Info.MD_Dist [See Note 2](#)
Info.MD_Distribution.transferOptions.MD_DigitalTransferOptions.onLine.CI_OnlineResource.description
Info.MD_Distribution.transferOptions.MD_DigitalTransferOptions.offLine
Info.MD_Distribution.transferOptions.MD_DigitalTransferOptions.offLine.MD_Medium.name
Info.MD_Distribution.transferOptions.MD_DigitalTransferOptions.offLine.MD_Medium.density
Info.MD_Distribution.transferOptions.MD_DigitalTransferOptions.offLine.MD_Medium.densityUnits
Info.MD_Distribution.transferOptions.MD_DigitalTransferOptions.offLine.MD_Medium.mediumFormat
Info.MD_Distribution.transferOptions.MD_DigitalTransferOptions.offLine.MD_Medium.mediumNote
Info.MD_Distribution.distributor.MD_Distributor.distributionOrderProcess.MD_StandardOrderProcess.fees
Info.MD_Distribution.distributor.MD_Distributor.distributionOrderProcess.MD_StandardOrderProcess.order
Info.MD_Distribution.distributor.MD_Distributor.distributionOrderProcess.MD_StandardOrderProcess.turna

Info.MD_DataIdentification.supplementalInformation

Info.MD_Distribution.distributor.MD_Distributor.distributionOrderProcess.MD_StandardOrderProcess.plann

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XML Tag (FGDC)	XML Tag (FGDC)	FGDC ID#	XML Tag (ISO)	ISO ID#	Description
metainfo (metd, (metrd, metfrd)?, metc, metstdn, metstdv, mettc?, metac?, metuc?, metsti?, metextn					
metd	(#PCDATA)>	7.1	mdDateSt	MD_Metadata.dateStamp.	
metrd	(#PCDATA)>	7.2			MD_Metadata.metadataMaintenance.MD_!
metfrd	(#PCDATA)>	7.3	dateNext	MD_Metadata.metadataMaintenance.MD_!	
metc (cntinfo)>		7.4	mdContact	MD_Metadata.contact	
metstdn	(#PCDATA)>	7.5	mdStanName	MD_Metadata.metadataStandardName	
metstdv	(#PCDATA)>	7.6	mdStanVer	MD_Metadata.metadataStandardVersion	
mettc	(#PCDATA)>	7.7			NO MATCH
metac	(#PCDATA)>	7.8	mdConst	MD_Metadata.metadataConstraints.MD_Le	
metuc	(#PCDATA)>	7.9	mdConst	MD_Metadata.metadataConstraints.MD_Le	
metsti (metscs, metsc, metshd)>		7.10	SecConsts	MD_Metadata.metadataConstraints.MD_Se	
metsc	(#PCDATA)>	7.10.1	classSys	MD_Metadata.metadataConstraints.MD_Se	
metscs	(#PCDATA)>	7.10.2	Class	MD_Metadata.metadataConstraints.MD_Se	
metshd	(#PCDATA)>	7.10.3	handDesc	MD_Metadata.metadataConstraints.MD_Se	
metextns (onlink*, metprof?)>		7.11	MdExtInfo	MD_Metadata.metadataExtensionInfo	
onlink	(#PCDATA)>	7.11.1	extOnRes	MD_Metadata.metadataExtensionInfo.MD_	
metprof	(#PCDATA)>	7.11.2	mdStanName	MD_Metadata. MetadataStandardName AN	
			and		
			mdStanVer		

Discussion

is*)

[MaintenanceInformation.maintenanceNote](#)
[MaintenanceInformation.dateOfNextUpdate](#)

[ISO 19108 contains
information about
temporal elements](#)

egalConstraints.otherConstraints, and set MD_Metadata.metadataConstraints.MD_LegalConstraints.accessCo
egalConstraints.otherConstraints, and set MD_Metadata.metadataConstraints.MD_LegalConstraints.useConst
ecurityConstraints
ecurityConstraints.classificationSystem
ecurityConstraintsclassification
ecurityConstraints.handlingDescription

[_MetadataExtensionInformation.extensionOnLineResource.CI_OnlineResource.linkage](#)
ND MD_Metadata.MetadataStandardVersion

onstraints = 008
straints = 008

XML Tag (FGDC)	XML Tag (FGDC)	FGDC ID#	XML Tag (ISO)	ISO ID#
citeinfo (origin+, pubdate, pubtime?, title, edition?, geoform?, serinfo?, pubinfo?, othercit?, onlink*, lwork				
origin (#PCDATA)>		8.1	RespParty	CI_Citation.citedResponsibleParty.CI_ResponsibleParty.individualName - (roleCode = originator, code 006)
pubdate (#PCDATA)>		8.2	DateRef	CI_Citation.date.CI_Date.date; dateType equals "publication" (code 002)
pubtime (#PCDATA)>		8.3	DateRef	CI_Citation.date.CI_Date.date
title (#PCDATA)>		8.4	resTitle	CI_Citation.title
edition (#PCDATA)>		8.5	resEd	CI_Citation.edition
geoform (#PCDATA)>		8.6	presForm	CI_Citation.presentationForm
serinfo (sename, issue)>		8.7	DatasetSeries	---
sename (#PCDATA)>		8.7.1	seriesName	CI_Citation.series.CI_Series.name
issue (#PCDATA)>		8.7.2	issId	CI_Citation.series.CI_Series.issuseIdentification
pubinfo (pubplace, publish)>		8.8		---
pubplace (#PCDATA)>		8.8.1	City	CI_Citation.citedResponsibleParty.CI_ResponsibleParty.contactInfo.CI_Contact.address.CI_Address.city
publish (#PCDATA)>		8.8.2	RespParty	CI_Citation.citedResponsibleParty.CI_ResponsibleParty.organizationName - (role = publisher, code 010)
othercit (#PCDATA)>		8.9	otherCitDet	CI_Citation.otherCitationDetails
onlink (#PCDATA)>		8.10	Linkage	MD_Metadata.distributionInfo.MD_Distribution.transferOptions.MD_DigitalTransferOptions.onLine.CI_OnlineResource.linkage (function=download, code 001)
lworkcit (citeinfo)>		8.11	collTitle	CI_Citation.collectiveTitle

Description Discussion

cit?)

The LMC draft provides the ID at left; the ISO DTD provides options.

ISO uses date or dateTime

The LMC draft provides the ID at left; the ISO DTD provides options.

FGDC definition: " the name of an online computer that contains the data set. "

XML Tag (FGDC)	XML Tag (FGDC)	FGDC ID#	XML Tag (ISO)
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timeinfo ((sngdate | mdattim | rngdates)) 9

sngdate (caldate, time?)>	9.1	EX_Extent.temporalElement.EX_TemporalE
caldate (#PCDATA)>	9.11	xtent.extent
time (#PCDATA)>	9.12	
mdattim (sngdate+)>	9.2	
rngdates (begdate, begtime?, enddate, endtir	9.3	
begdate (#PCDATA)>	9.3.1	
begtime (#PCDATA)>	9.3.2	
enddate (#PCDATA)>	9.3.3	
endtime (#PCDATA)>	9.3.4	

ISO ID#	Description	Discussion
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		<u>Section 9 should be covered by ISO 19108, Temporal Schema</u>
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XML Tag (FGDC)	XML Tag (FGDC)	FGDC ID#	Discussion	XML Tag (ISO)	ISO ID#	Description
cntinfo ((cntperp cntorgp), cntpos?, cntaddr+, cntvoice+, cnttdd*, cntfax*, cntemail*, hours?, cntinst						
cntperp (cntper, cntorg?)>		10.1		RespParty	CI_Citation.citedRespons	
cntper (#PCDATA)>		10.1.1	also 10.2.2	rpIndName		
cntorg (#PCDATA)>		10.1.2	also 10.2.1	rpOrgName	CI_Citation.citedRespons	
cntorgp (cntorg, cntper?)>		10.2		RespParty	CI_Citation.citedRespons	
cntorg (#PCDATA)>		10.2.1	also 10.1.2	rpOrgName	CI_Citation.citedRespons	
cntper (#PCDATA)>		10.2.2	also 10.1.1	rpIndName	CI_Citation.citedRespons	
cntpos (#PCDATA)>		10.3		rpPosName	CI_Citation.citedRespons	
cntaddr (addrtype, address*, city, state, post		10.4		Address	CI_Citation.citedRespons	
addrtype (#PCDATA)>		10.4.1		Deprecated		
address (#PCDATA)>		10.4.2		delPoint	CI_Citation.citedRespons	
city (#PCDATA)>		10.4.3		City	CI_Citation.citedRespons	
state (#PCDATA)>		10.4.4		adminArea	CI_Citation.citedRespons	
postal (#PCDATA)>		10.4.5		postcode	CI_Citation.citedRespons	
country (#PCDATA)>		10.4.6		Country	CI_Citation.citedRespons	
cntvoice (#PCDATA)>		10.5		voiceNum	CI_Citation.citedRespons	
cnttdd (#PCDATA)>		10.6		Extension candidate- ISO B.3.2.6		
cntfax (#PCDATA)>		10.7		faxNum	CI_Citation.citedRespons	
cntemail (#PCDATA)>		10.8		eMailAdd	CI_Citation.citedRespons	
hours (#PCDATA)>		10.9		cntHours	CI_Citation.citedRespons	
cntinst (#PCDATA)>		10.10		cntInstr	CI_Citation.citedRespons	

Discussion

?)

ibleParty

ibleParty.CI_ResponsibleParty.organisationName

ibleParty.CI_ResponsibleParty

ibleParty.CI_ResponsibleParty.organisationName

ibleParty.CI_ResponsibleParty.individualName

ibleParty.CI_ResponsibleParty.positionName

ibleParty.CI_ResponsibleParty.contact.CI_Contact.address

ibleParty.CI_ResponsibleParty.contact.CI_Contact.address.CI_Address.deliveryPoint

ibleParty.CI_ResponsibleParty.contact.CI_Contact.address.CI_Address.city

ibleParty.CI_ResponsibleParty.contact.CI_Contact.address.CI_Address.administrativeArea

ibleParty.CI_ResponsibleParty.contact.CI_Contact.address.CI_Address.postalCode

ibleParty.CI_ResponsibleParty.contact.CI_Contact.address.CI_Address.country

ibleParty.CI_ResponsibleParty.contact.CI_Contact.phone.CI_Telephone.voice

ibleParty.CI_ResponsibleParty.contact.CI_Contact.phone.CI_Telephone.facsimile

ibleParty.CI_ResponsibleParty.contact.CI_Contact.address.CI_Address.electronicMailAddress

ibleParty.CI_ResponsibleParty.contact.CI_Contact.hoursOfService

ibleParty.CI_ResponsibleParty.contact.CI_Contact.contactInstructions

ISO DTD (updated) provided by D.Danko

Please note: this version includes modifications not present in informative Annex F of ISO-DIS1911.

02-Mar-02

[PART 1 - CSL DECLARATIONS](#)

[PART 2 : SPATIAL DECLARATIONS](#)

[PART 3: TEMPORAL DECLARATIONS](#)

[PART 4 - SPATIAL REFERENCE BY COORDINATES DECLARATIONS](#)

[PART 5 - TYPE ENTITY DECLARATIONS](#)

[PART 6 - ELEMENT DECLARATIONS](#)

[PART 7: CODELIST and ENUMERATION DECLARATIONS](#)

```
<?xml version="1.0" encoding="UTF-8"?>
```

```
<!-- Processing history:
```

```
    MAR 10 2002 by Bruce Westcott (INGR)
```

```
        reviewed, eliminated WordWrap in history, renamed, incorporated in spreadsheets
```

```
    Nov 9 2001 by Aleta Vienneau (ESRI)
```

```
        fixed typos in entity and element names, and in languageCode values
```

```
        changed attribute lists to code values instead of text values to support internationalizat
```

```
        added missing element in entity definition for GeoBndBox: = exTypeCode
```

```
    Jul 26 2001 by Shawn Silkensen (Lockheed Martin)
```

```
        ISO 19118 Encoding DTD - Automatically produced with XML Spy v4.0 = beta 2
```

```
        XSL Processor: Microsoft version 1=20
```

```
        XSLT script : CFG2DTD.xsl=20
```

```
-->
```

```
<!-- -->
```

```
<!-- PART 1 - CSL DECLARATIONS-->
```

```
<!--The following elements and entites have been taken from the =
```

```
Conceptual Schema Language (19103) DTD. They do not make up that DTD in =
```

```
its entirety, and are placed here for ease of use of this DTD-->
```

```
<!ENTITY % CharacterString '#PCDATA'>
```

```
<!ENTITY % Date '#PCDATA'>
```

```
<!--Formatted as - CCYYMMDD-->
```

```
<!ENTITY % DateTime '#PCDATA'>
```

```
<!--Formatted as - CCYYMMDDTHHMMSS-->
```

```
<!ENTITY % Time '#PCDATA'>
```

```
<!--Formatted as - THHMMSS-->
```

```
<!ENTITY % Boolean '#PCDATA'>
```

```
<!ENTITY % Record '#PCDATA'>
```

```
<!ENTITY % RecordType '#PCDATA'>
```

```
<!ENTITY % Binary '#PCDATA'>
```

```
<!ENTITY % Measure '(value, uom)'>
```

```
<!ENTITY % Distance '(value, uom)'>
```

```
<!ELEMENT value %NumberTypes;>
```

```
<!ELEMENT uom %UnitOfMeasureTypes;>
```

```
<!ENTITY % NumberTypes '(Integer | Decimal | Real )'>
```

```
<!ELEMENT Integer %Integer;>
```

```
<!ELEMENT Decimal %Decimal;>
```

```
<!ELEMENT Real %Real;>
```

```
<!ENTITY % Decimal '#PCDATA'>
```

```

<!ENTITY % Real '(#PCDATA)'>
<!ENTITY % Integer '(#PCDATA)'>
<!ENTITY % GenericNameTypes '(TypeName | LocalName | ScopedName | =
MemberName )'>
<!ELEMENT TypeName %TypeName;>
<!ELEMENT LocalName %LocalName;>
<!ELEMENT ScopedName %ScopedName;>
<!ELEMENT MemberName %MemberName;>
<!ENTITY % LocalName '(scope)'>
<!ENTITY % TypeName '(scope, aName)'>
<!ENTITY % ScopedName '(scope)'>
<!ENTITY % MemberName '(scope, aName, attributeType)'>
<!ELEMENT scope (#PCDATA)>
<!--"scope" is the name of the namespace-->
<!ELEMENT aName (#PCDATA)>
<!ELEMENT attributeType %TypeName;>
<!ENTITY % UnitOfMeasureTypes '(UomArea | UomTime | UomLength | =
UomVolume | UomVelocity | UomAngle | UomScale )'>
<!ENTITY % UomLength '(uomName, conversionToISOstandardUnit)'>
<!ENTITY % UomAngle '(uomName, conversionToISOstandardUnit)'>
<!ENTITY % UomScale '(uomName, conversionToISOstandardUnit)'>
<!ENTITY % UomTime '(uomName, conversionToISOstandardUnit)'>
<!ENTITY % UomArea '(uomName, conversionToISOstandardUnit)'>
<!ENTITY % UomVolume '(uomName, conversionToISOstandardUnit)'>
<!ENTITY % UomVelocity '(uomName, conversionToISOstandardUnit)'>
<!ELEMENT UomLength %UomLength;>
<!ELEMENT UomAngle %UomAngle;>
<!ELEMENT UomScale %UomScale;>
<!ELEMENT UomTime %UomTime;>
<!ELEMENT UomArea %UomArea;>
<!ELEMENT UomVolume %UomVolume;>
<!ELEMENT UomVelocity %UomVelocity;>
<!ELEMENT uomName (#PCDATA)>
<!ELEMENT conversionToISOstandardUnit %Real;>
<!--PART 2 : SPATIAL DECLARATIONS-->
<!--The following elements and entites have been taken from the Spatial =
Schema (19107) DTD. They do not make up that DTD in its entirety, and =
are placed here for ease of use of this DTD-->
<!ENTITY % GM_ObjectTypes '(GM_Polygon)'>
<!ENTITY % GM_Polygon '(MdCoRefSys?, coordinates)'>
<!ENTITY % GM_Point '(MdCoRefSys?, coordinates)'>
<!ELEMENT coordinates (#PCDATA)>
<!ATTLIST coordinates
    tupleSep (space | comma | period) "space"
    coordSep (space | comma | period) "comma"
    decimalChar (period | comma) "period"
    dimension (2 | 3) "2"
    precision (single | double) "single"
>
<!ELEMENT GM_Polygon %GM_Polygon;>

```

```

<!ELEMENT GM_Point %GM_Point;>
<!--PART 3: TEMPORAL DECLARATIONS-->
<!--The following elements and entites have been taken from the =
Temporal (19108) DTD. They do not make up that DTD in its entirety, and =
are placed here for ease of use of this DTD-->
<!ENTITY % TM_PeriodDuration '(designator, years?, months?, days?, =
timeIndicator?, hours?, minutes?, seconds?)'>
<!ELEMENT designator (#PCDATA)>
<!ELEMENT years (#PCDATA)>
<!ELEMENT months (#PCDATA)>
<!ELEMENT days (#PCDATA)>
<!ELEMENT timeIndicator (#PCDATA)>
<!ELEMENT hours (#PCDATA)>
<!ELEMENT minutes (#PCDATA)>
<!ELEMENT seconds (#PCDATA)>
<!ENTITY % TM_Primitive '(TM_GeometricPrimitive)'>
<!ENTITY % TM_GeometricPrimitive '(TM_Instant | TM_Period)'>
<!ENTITY % TM_Instant '(tmPosition)'>
<!ENTITY % TM_Period '(begin, end)'>
<!ENTITY % TM_PositionTypes '(TM_DateAndTime | TM_CalDate | =
TM_ClockTime)'>
<!ENTITY % TM_DateAndTime '(calDate, clkTime)'>
<!ENTITY % TM_CalDate '(calDate)'>
<!--For TM_CalDate, Gregorian calendar is assumed to be used-->
<!ENTITY % TM_ClockTime '(clkTime)'>
<!ELEMENT TM_CalDate %TM_CalDate;>
<!ELEMENT TM_ClockTime %TM_ClockTime;>
<!ELEMENT TM_DateAndTime %TM_DateAndTime;>
<!ELEMENT TM_GeometricPrimitive %TM_GeometricPrimitive;>
<!ELEMENT TM_Instant %TM_Instant;>
<!ELEMENT TM_Period %TM_Period;>
<!ELEMENT tmPosition %TM_PositionTypes;>
<!ELEMENT calDate %Date;>
<!ELEMENT clkTime %Time;>
<!ELEMENT begin %DateTime;>
<!ELEMENT end %DateTime;>
<!-- PART 4 - SPATIAL REFERENCE BY COORDINATES DECLARATIONS-->
<!ENTITY % SC_VerticalDatum '(datumID)'>
<!ELEMENT datumID %RS_Identifier;>
<!-- PART 5 - TYPE ENTITY DECLARATIONS -->
<!--Metadata Entity-->
<!ENTITY % Metadata '(mdFileID?, mdLang?, mdChar?, mdParentID?, =
mdHrLv*, mdHrLvName*, mdContact, mdDateSt, mdStanName?, mdStanVer?, =
distInfo?, dataIdInfo+, appSchInfo*, porCatInfo*, mdMaint?, mdConst*, =
dqInfo*, spatReplInfo*, refSysInfo*, contInfo*, mdExtInfo*)'>
<!-- Identification Entities -->
<!ENTITY % DataIdent '(idCitation, idAbs, idPurp?, idCredit*, =
idStatus*, idPoC*, resConst*, dsFormat*, idSpecUse*, resMaint*, =
descKeys*, graphOver*, spatRpType*, dataScale*, dataLang+, dataChar?, =
tpCat+, geoBox*, geoDesc*, envirDesc?, dataExt*, supplInfo?)'>

```

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<!ENTITY % BrowGraph '(bgFileName, bgFileDesc?, bgFileType?)>
<!ENTITY % RepFract '(rfDenom)>
<!ENTITY % Resol '(equScale | scaleDist)>
<!ENTITY % Usage '(specUsage, usageDate?, usrDetLim?, usrCntlInfo+)>
<!ENTITY % Keywords '(keyword+, keyTyp?, thesaName?)>
<!-- Constraint Entities -->
<!ENTITY % ConstsTypes '(SecConsts | LegConsts | Consts )>
<!ENTITY % Consts '(useLimit*)>
<!ENTITY % LegConsts '(useLimit*, accessConsts*, useConsts*, =
othConsts*)>
<!ENTITY % SecConsts '(useLimit*, class, userNote?, classSys?, =
handDesc?)>
<!-- Data Quality Entities -->
<!ENTITY % PrcessStep '(stepDesc, stepRat?, stepDateTm?, stepProc*, =
stepSrc*)>
<!ENTITY % Source '(srcDesc?, srcScale?, srcRefSys?, srcCitatn?, =
srcExt*, srcStep*)>
<!ENTITY % Lineage '(statement?, dataSource*, prcStep*)>
<!ENTITY % ResultTypes '(ConResult | QuanResult | Result )>
<!ENTITY % ConResult '(conSpec, conExpl, conPass)>
<!ENTITY % QuanResult '(quanValType?, quanValUnit?, errStat?, =
quanVal+)>
<!ENTITY % Result '(#PCDATA)>
<!ENTITY % DQElementTypes '(DQRelIntPosAcc | DQQuanAttAcc | DQDomConsis =
| DQGridDataPosAcc | DQTempValid | DQAbsExtPosAcc | DQConcConsis | =
DQCompComm | DQFormConsis | DQTopConsis | DQAccTimeMeas | =
DQNonQuanAttAcc | DQThemClassCor | DQCompOm | DQTempConsis )>
<!ENTITY % DQTempValid '(measName*, measId?, measDesc?, evalMethType?, =
evalMethDesc?, evalProc?, measDateTm?, measResult+)>
<!ENTITY % DQTempConsis '(measName*, measId?, measDesc?, evalMethType?, =
evalMethDesc?, evalProc?, measDateTm?, measResult+)>
<!ENTITY % DQAccTimeMeas '(measName*, measId?, measDesc?, =
evalMethType?, evalMethDesc?, evalProc?, measDateTm?, measResult+)>
<!ENTITY % DQQuanAttAcc '(measName*, measId?, measDesc?, evalMethType?, =
evalMethDesc?, evalProc?, measDateTm?, measResult+)>
<!ENTITY % DQNonQuanAttAcc '(measName*, measId?, measDesc?, =
evalMethType?, evalMethDesc?, evalProc?, measDateTm?, measResult+)>
<!ENTITY % DQThemClassCor '(measName*, measId?, measDesc?, =
evalMethType?, evalMethDesc?, evalProc?, measDateTm?, measResult+)>
<!ENTITY % DQRelIntPosAcc '(measName*, measId?, measDesc?, =
evalMethType?, evalMethDesc?, evalProc?, measDateTm?, measResult+)>
<!ENTITY % DQGridDataPosAcc '(measName*, measId?, measDesc?, =
evalMethType?, evalMethDesc?, evalProc?, measDateTm?, measResult+)>
<!ENTITY % DQAbsExtPosAcc '(measName*, measId?, measDesc?, =
evalMethType?, evalMethDesc?, evalProc?, measDateTm?, measResult+)>
<!ENTITY % DQTopConsis '(measName*, measId?, measDesc?, evalMethType?, =
evalMethDesc?, evalProc?, measDateTm?, measResult+)>
<!ENTITY % DQFormConsis '(measName*, measId?, measDesc?, evalMethType?, =
evalMethDesc?, evalProc?, measDateTm?, measResult+)>
<!ENTITY % DQDomConsis '(measName*, measId?, measDesc?, evalMethType?, =

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evalMethDesc?, evalProc?, measDateTm?, measResult+)'>
<!ENTITY % DQConcConsis '(measName*, measId?, measDesc?, evalMethType?, =
evalMethDesc?, evalProc?, measDateTm?, measResult+)'>
<!ENTITY % DQCompOm '(measName*, measId?, measDesc?, evalMethType?, =
evalMethDesc?, evalProc?, measDateTm?, measResult+)'>
<!ENTITY % DQCompComm '(measName*, measId?, measDesc?, evalMethType?, =
evalMethDesc?, evalProc?, measDateTm?, measResult+)'>
<!ENTITY % DataQual '(dqScope, dataLineage?, dqReport*)'>
<!ENTITY % DQScope '(scpLvl+, scpExt?, scpLvlDesc*)'>
<!-- Maintenance Entities -->
<!ENTITY % MaintInfo '(maintFreq, dateNext?, usrDefFreq?, maintScp*, =
upScpDesc*, maintNote*)'>
<!ENTITY % ScpDesc '(attribSet | featSet | featIntSet | attribIntSet | =
datasetSet | other)'>
<!-- Spatial Representation Entities -->
<!ENTITY % SpatRepTypes '(Georect | GridSpatRep | Georef | VectSpatRep =
)'>
<!ENTITY % GridSpatRep '(numDims, axDimProps, cellGeo, tranParaAv)'>
<!ENTITY % VectSpatRep '(topLvl?, geometObjs*)'>
<!ENTITY % Georef '(numDims, axDimProps, cellGeo, tranParaAv, ctrlPtAv, =
orieParaAv, orieParaDs?, georefPars, paraCit*)'>
<!ENTITY % Dimen '(dimName, dimSize, dimResol?)'>
<!ENTITY % Georect '(numDims, axDimProps, cellGeo, tranParaAv, chkPtAv, =
chkPtDesc?, cornerPts, centerPt?, ptInPixel, transDimDesc?, =
transDimMap*)'>
<!ENTITY % GeometObjs '(geoObjTyp, geoObjCnt?)'>
<!-- Reference System Entities -->
<!ENTITY % RefSystemTypes '(RefSystem | MdCoRefSys )'>
<!ENTITY % RefSystem '(refSysID?)'>
<!ENTITY % MdCoRefSys '(refSysID?, projection?, ellipsoid?, datum?, =
projParas?, ellParas?)'>
<!ENTITY % ProjParas '(zone?, stanParal*, longCntMer?, latProjOri?, =
falEastng?, falNorthng?, falENUnits?, sclFacEqu?, hgtProsPt?, =
longProjCnt?, latProjCnt?, sclFacCnt?, stVrLongPl?, sclFacPrOr?, =
obLnAziPars?, obLnPtPars*)'>
<!ENTITY % ObLineAzi '(aziAngle, aziPtLong)'>
<!ENTITY % ObLinePt '(obLineLat, obLineLong)'>
<!ENTITY % EllParas '(semiMajAx, axisUnits, denFlatRat?)'>
<!-- Content Entities -->
<!ENTITY % ContInfoTypes '(ContInfo | CovDesc | FetCatDesc | ImgDesc =
)'>
<!ENTITY % FetCatDesc '(compCode?, catLang*, incWithDS, catFetTyps*, =
catCitation+)'>
<!ENTITY % CovDesc '(attDesc, contentTyp, covDim*)'>
<!ENTITY % ImgDesc '(attDesc, contentTyp, covDim*, illElevAng?, =
illAziAng?, imagCond?, imagQuCode?, cloudCovPer?, prcTypCde?, =
cmpGenQuan?, trianInd?, radCalDatAv?, camCallnAv?, filmDistlnAv?, =
lensDistlnAv?)'>
<!ENTITY % ContInfo '(#PCDATA)'>
<!ENTITY % MdIdentTypes '(RS_Identifier | MdIdent )'>

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<!ENTITY % RS_Identifier '(identAuth?, identCode)'>
<!ENTITY % MdIdent '(identAuth?, identCode)'>
<!ENTITY % RangeDimTypes '(Band | RangeDim )'>
<!ENTITY % RangeDim '(seqID?, dimDescr?)>
<!ENTITY % Band '(seqID?, dimDescr?, maxVal?, minVal?, valUnit?, =
pkResp?, bitsPerVal?, toneGrad?, sclFac?, offset?)>
<!ENTITY % Sequence_Dimen_ '(Dimen)*'>
<!-- Portrayal Catalogue Entity -->
<!ENTITY % PortCatRef '(portCatCit+)'>
<!-- Distribution Entities -->
<!ENTITY % Medium '(medName?, medDensity*, medDenUnits?, medVol?, =
medFormat*, medNote?)>
<!ENTITY % DigTranOps '(unitsODist?, transSize?, onLineSrc*, =
offLineMed?)>
<!ENTITY % StanOrdProc '(resFees?, planAvDtTm?, ordInstr?, ordTurn?)>
<!ENTITY % Distributor '(distorCont, distorFormat+, distorOrdPrc*, =
distorTran*)>
<!ENTITY % Distrib '(distributor*, distTranOps*)>
<!ENTITY % Format '(formatName, formatVer, formatAmdNum?, formatSpec?, =
fileDecmTech?)>
<!-- Extension Entities -->
<!ENTITY % ExtEleInfo '(extEleName, extShortName?, extDomCode?, =
extEleDef, extEleOb?, extEleCond?, eleDataType, extEleMxOc?, =
extEleDomVal?, extEleParEnt+, extEleRule, extEleRat*, extEleSrc+)'>
<!ENTITY % MdExtInfo '(extOnRes?, extEleInfo*)>
<!-- Application Schema Entities -->
<!ENTITY % AppSchInfo '(asName, asSchLang, asCstLang, asAscii?, =
asGraFile?, asSwDevFile?, asSwDevFiFt?, featCatSup?)>
<!ENTITY % FeatTypList '(spatObj, spatSchName)'>
<!ENTITY % SpatAttSup '(featTypeList+)'>
<!-- Extent Entities -->
<!ENTITY % TempExtentTypes '(SpatTempEx | TempExtent)'>
<!ENTITY % TempExtent '(exTemp)'>
<!ENTITY % VertExtent '(vertMinVal, vertMaxVal, vertUoM, vertDatum)'>
<!ENTITY % BoundPoly '(exTypeCode?, polygon+)'>
<!ENTITY % Extent '(exDesc?, vertEle*, tempEle*, geoEle*)>
<!ENTITY % GeoExtentTypes '(BoundPoly | GeoDesc )'>
<!ENTITY % GeoBndBox '(exTypeCode?, westBL, eastBL, southBL, northBL)'>
<!ENTITY % SpatTempEx '(exTemp, exSpat+)'>
<!ENTITY % GeoDesc '(exTypeCode?, geold)'>
<!-- Citation Entities -->
<!ENTITY % RespParty '(rpIndName?, rpOrgName?, rpPosName?, rpCntInfo?, =
role)'>
<!ENTITY % Citation '(resTitle, resAltTitle*, resRefDate+, resEd?, =
resEdDate?, citld*, citldType*, citRespParty*, presForm*, =
datasetSeries?, otherCitDet?, collTitle?, isbn?, issn?)>
<!ENTITY % Address '(delPoint*, city?, adminArea?, postCode?, country?, =
eMailAdd*)>
<!ENTITY % OnlineRes '(linkage, protocol?, appProfile?, orName?, =
orDesc?, orFunct?)>

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```
<!ENTITY % Contact '(cntPhone?, cntAddress?, cntOnlineRes?, cntHours?, =
cntInstr?)'>
<!ENTITY % Telephone '(voiceNum*, faxNum*)'>
<!ENTITY % URL '(#PCDATA)'>
<!ENTITY % DateRef '(refDate, refDateType)'>
<!ENTITY % DatasetSeries '(seriesName?, issId?, artPage?)'>
<!-- PART 6 - ELEMENT DECLARATIONS -->
<!--Metadata Entity Set Elements-->
<!ELEMENT Metadata %Metadata;>
<!ELEMENT mdFileID (#PCDATA)>
<!ELEMENT mdLang (languageCode)>
<!ELEMENT mdChar (CharSetCd)>
<!ELEMENT mdParentID (#PCDATA)>
<!ELEMENT mdHrLv (ScopeCd)>
<!ELEMENT mdHrLvName (#PCDATA)>
<!ELEMENT mdContact %RespParty;>
<!ELEMENT mdDateSt %Date;>
<!ELEMENT mdStanName (#PCDATA)>
<!ELEMENT mdStanVer (#PCDATA)>
<!ELEMENT distInfo %Distrib;>
<!ELEMENT dataIdInfo %DataIdent;>
<!ELEMENT appSchInfo %AppSchInfo;>
<!ELEMENT porCatInfo %PortCatRef;>
<!ELEMENT mdMaint %MaintInfo;>
<!ELEMENT mdConst %ConstsTypes;>
<!ELEMENT dqInfo %DataQual;>
<!ELEMENT spatRepInfo %SpatRepTypes;>
<!ELEMENT refSysInfo %RefSystemTypes;>
<!ELEMENT contInfo %ContInfoTypes;>
<!ELEMENT mdExtInfo %MdExtInfo;>
<!--Identification Elements-->
<!ELEMENT idCitation %Citation;>
<!ELEMENT idAbs (#PCDATA)>
<!ELEMENT idPurp (#PCDATA)>
<!ELEMENT idCredit (#PCDATA)>
<!ELEMENT idStatus (ProgCd)>
<!ELEMENT idPoC %RespParty;>
<!ELEMENT resConst %ConstsTypes;>
<!ELEMENT dsFormat %Format;>
<!ELEMENT idSpecUse %Usage;>
<!ELEMENT resMaint %MaintInfo;>
<!ELEMENT descKeys %Keywords;>
<!ELEMENT graphOver %BrowGraph;>
<!ELEMENT spatRpType (SpatRepTypCd)>
<!ELEMENT dataScale %Resol;>
<!ELEMENT dataLang (languageCode)>
<!ELEMENT dataChar (CharSetCd)>
<!ELEMENT tpCat (TopicCatCd)>
<!ELEMENT geoBox %GeoBndBox;>
<!ELEMENT geoDesc %GeoDesc;>
```

<!ELEMENT envirDesc (#PCDATA)>
<!ELEMENT dataExt %Extent;>
<!ELEMENT supplInfo (#PCDATA)>
<!ELEMENT bgFileName (#PCDATA)>
<!ELEMENT bgFileDesc (#PCDATA)>
<!ELEMENT bgFileType (#PCDATA)>
<!ELEMENT rfDenom %Integer;>
<!ELEMENT equScale %RepFract;>
<!ELEMENT scaleDist %Distance;>
<!ELEMENT specUsage (#PCDATA)>
<!ELEMENT usageDate %DateTime;>
<!ELEMENT usrDetLim (#PCDATA)>
<!ELEMENT usrCntInfo %RespParty;>
<!ELEMENT keyword (#PCDATA)>
<!ELEMENT keyTyp (KeyTypCd)>
<!ELEMENT thesaName %Citation;>
<!--Constraint Elements-->
<!ELEMENT Consts %Consts;>
<!ELEMENT LegConsts %LegConsts;>
<!ELEMENT useLimit (#PCDATA)>
<!ELEMENT accessConsts (RestrictCd)>
<!ELEMENT useConsts (RestrictCd)>
<!ELEMENT othConsts (#PCDATA)>
<!ELEMENT SecConsts %SecConsts;>
<!ELEMENT class (ClassscationCd)>
<!ELEMENT userNote (#PCDATA)>
<!ELEMENT classSys (#PCDATA)>
<!ELEMENT handDesc (#PCDATA)>
<!--Data Quality Elements-->
<!ELEMENT stepDesc (#PCDATA)>
<!ELEMENT stepRat (#PCDATA)>
<!ELEMENT stepDateTm %DateTime;>
<!ELEMENT stepProc %RespParty;>
<!ELEMENT stepSrc %Source;>
<!ELEMENT srcDesc (#PCDATA)>
<!ELEMENT srcScale %RepFract;>
<!ELEMENT srcRefSys %RefSystemTypes;>
<!ELEMENT srcCitatn %Citation;>
<!ELEMENT srcExt %Extent;>
<!ELEMENT srcStep %PrcessStep;>
<!ELEMENT statement (#PCDATA)>
<!ELEMENT dataSource %Source;>
<!ELEMENT prcStep %PrcessStep;>
<!ELEMENT Result %Result;>
<!ELEMENT ConResult %ConResult;>
<!ELEMENT conSpec %Citation;>
<!ELEMENT conExpl (#PCDATA)>
<!ELEMENT conPass %Boolean;>
<!ELEMENT QuanResult %QuanResult;>
<!ELEMENT quanValType %RecordType;>

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<!ELEMENT quanValUnit %Measure;>
<!ELEMENT errStat (#PCDATA)>
<!ELEMENT quanVal %Record;>
<!ELEMENT DQTempValid %DQTempValid;>
<!ELEMENT DQTempConsis %DQTempConsis;>
<!ELEMENT DQAccTimeMeas %DQAccTimeMeas;>
<!ELEMENT DQQuanAttAcc %DQQuanAttAcc;>
<!ELEMENT DQNonQuanAttAcc %DQNonQuanAttAcc;>
<!ELEMENT DQThemClassCor %DQThemClassCor;>
<!ELEMENT DQRelIntPosAcc %DQRelIntPosAcc;>
<!ELEMENT DQGridDataPosAcc %DQGridDataPosAcc;>
<!ELEMENT DQAbsExtPosAcc %DQAbsExtPosAcc;>
<!ELEMENT DQTopConsis %DQTopConsis;>
<!ELEMENT DQFormConsis %DQFormConsis;>
<!ELEMENT DQDomConsis %DQDomConsis;>
<!ELEMENT DQConcConsis %DQConcConsis;>
<!ELEMENT DQCompOm %DQCompOm;>
<!ELEMENT DQCompComm %DQCompComm;>
<!ELEMENT measName (#PCDATA)>
<!ELEMENT measId %MldentTypes;>
<!ELEMENT measDesc (#PCDATA)>
<!ELEMENT evalMethType (EvalMethTypeCd)>
<!ELEMENT evalMethDesc (#PCDATA)>
<!ELEMENT evalProc %Citation;>
<!ELEMENT measDateTm %DateTime;>
<!ELEMENT measResult %ResultTypes;>
<!ELEMENT dqScope %DQScope;>
<!ELEMENT dataLineage %Lineage;>
<!ELEMENT dqReport %DQElementTypes;>
<!ELEMENT scpLvl (ScopeCd)>
<!ELEMENT scpExt %Extent;>
<!ELEMENT scpLvlDesc %ScpDesc;>
<!--Maintenance Elements-->
<!ELEMENT maintFreq (MaintFreqCd)>
<!ELEMENT dateNext %Date;>
<!ELEMENT usrDefFreq %TM_PeriodDuration;>
<!ELEMENT maintScp (ScopeCd)>
<!ELEMENT upScpDesc %ScpDesc;>
<!ELEMENT maintNote (#PCDATA)>
<!ELEMENT attribSet (#PCDATA)>
<!--"attributes" is a list of the attributes updated during the =
maintenance-->
<!ELEMENT featSet (#PCDATA)>
<!--"features" is a list of the features updated during the =
maintenance-->
<!ELEMENT featIntSet (#PCDATA)>
<!--"featureInstances" is a list of the feature instances updated during =
the maintenance-->
<!ELEMENT attribIntSet (#PCDATA)>
<!--"attributeInstances" is a list of the attribute instances updated =

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during the maaintenance-->
<!ELEMENT datasetSet (#PCDATA)>
<!ELEMENT other (#PCDATA)>
<!--Spatial Representation Elements-->
<!ELEMENT GridSpatRep %GridSpatRep;>
<!ELEMENT numDims %Integer;>
<!ELEMENT axDimProps %Sequence_Dimen_;>
<!ELEMENT cellGeo (CellGeoCd)>
<!ELEMENT tranParaAv %Boolean;>
<!ELEMENT VectSpatRep %VectSpatRep;>
<!ELEMENT topLvl (TopoLevCd)>
<!ELEMENT geometObjs %GeometObjs;>
<!ELEMENT Georef %Georef;>
<!ELEMENT ctrlPtAv %Boolean;>
<!ELEMENT orieParaAv %Boolean;>
<!ELEMENT orieParaDs (#PCDATA)>
<!ELEMENT georefPars %Record;>
<!ELEMENT paraCit %Citation;>
<!ELEMENT Dimen %Dimen;>
<!ELEMENT dimName (DimNameTypCd)>
<!ELEMENT dimSize %Integer;>
<!ELEMENT dimResol %Measure;>
<!ELEMENT Georect %Georect;>
<!ELEMENT chkPtAv %Boolean;>
<!ELEMENT chkPtDesc (#PCDATA)>
<!ELEMENT cornerPts %GM_Point;>
<!ELEMENT centerPt %GM_Point;>
<!ELEMENT ptInPixel (PixOrientCd)>
<!ELEMENT transDimDesc (#PCDATA)>
<!ELEMENT transDimMap (#PCDATA)>
<!ELEMENT geoObjTyp (GeoObjTypCd)>
<!ELEMENT geoObjCnt %Integer;>
<!--Reference System Elements-->
<!ELEMENT MdIdent %MdIdent;>
<!ELEMENT RS_Identifier %RS_Identifier;>
<!ELEMENT identAuth %Citation;>
<!ELEMENT identCode (#PCDATA)>
<!ELEMENT RefSystem %RefSystem;>
<!ELEMENT refSysID %RS_Identifier;>
<!ELEMENT MdCoRefSys %MdCoRefSys;>
<!ELEMENT projection %RS_Identifier;>
<!ELEMENT ellipsoid %RS_Identifier;>
<!ELEMENT datum %RS_Identifier;>
<!ELEMENT projParas %ProjParas;>
<!ELEMENT ellParas %EllParas;>
<!ELEMENT ProjParas %ProjParas;>
<!ELEMENT zone %Integer;>
<!ELEMENT stanParal %Real;>
<!ELEMENT longCntMer %Real;>
<!ELEMENT latProjOri %Real;>

<!ELEMENT falEastng %Real;>
<!ELEMENT falNorthng %Real;>
<!ELEMENT falENUnits %UomLength;>
<!ELEMENT sclFacEqu %Real;>
<!ELEMENT hgtProsPt %Real;>
<!ELEMENT longProjCnt %Real;>
<!ELEMENT latProjCnt %Real;>
<!ELEMENT sclFacCnt %Real;>
<!ELEMENT stVrLongPI %Real;>
<!ELEMENT sclFacPrOr %Real;>
<!ELEMENT obLnAziPars %ObLineAzi;>
<!ELEMENT obLnPtPars %ObLinePt;>
<!ELEMENT aziAngle %Real;>
<!ELEMENT aziPtLong %Real;>
<!ELEMENT ObLinePt %ObLinePt;>
<!ELEMENT obLineLat %Real;>
<!ELEMENT obLineLong %Real;>
<!ELEMENT semiMajAx %Real;>
<!ELEMENT axisUnits %UomLength;>
<!ELEMENT denFlatRat %Real;>
<!--Content Elements-->
<!ELEMENT ContInfo %ContInfo;>
<!ELEMENT FetCatDesc %FetCatDesc;>
<!ELEMENT compCode %Boolean;>
<!ELEMENT catLang (languageCode)>
<!ELEMENT incWithDS %Boolean;>
<!ELEMENT catFetTypes %GenericNameTypes;>
<!ELEMENT catCitation %Citation;>
<!ELEMENT CovDesc %CovDesc;>
<!ELEMENT attDesc %RecordType;>
<!ELEMENT contentType (ContentTypeCd)>
<!ELEMENT covDim %RangeDimTypes;>
<!ELEMENT ImgDesc %ImgDesc;>
<!ELEMENT illElevAng %Real;>
<!ELEMENT illAziAng %Real;>
<!ELEMENT imagCond (ImgCondCd)>
<!ELEMENT imagQuCode %MlIdentTypes;>
<!ELEMENT cloudCovPer %Real;>
<!ELEMENT prcTypCde %MlIdentTypes;>
<!ELEMENT cmpGenQuan %Integer;>
<!ELEMENT trianInd %Boolean;>
<!ELEMENT radCalDatAv %Boolean;>
<!ELEMENT camCallInAv %Boolean;>
<!ELEMENT filmDistInAv %Boolean;>
<!ELEMENT lensDistInAv %Boolean;>
<!ELEMENT RangeDim %RangeDim;>
<!ELEMENT seqID %MemberName;>
<!ELEMENT dimDescrp (#PCDATA)>
<!ELEMENT Band %Band;>
<!ELEMENT maxVal %Real;>

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<!ELEMENT minVal %Real;>
<!ELEMENT valUnit %UomLength;>
<!ELEMENT pkResp %Real;>
<!ELEMENT bitsPerVal %Integer;>
<!ELEMENT toneGrad %Integer;>
<!ELEMENT sclFac %Real;>
<!ELEMENT offset %Real;>
<!--Portrayal Catalogue Element-->
<!ELEMENT portCatCit %Citation;>
<!--Distribution Elements-->
<!ELEMENT medName (MedNameCd)>
<!ELEMENT medDensity %Real;>
<!ELEMENT medDenUnits (#PCDATA)>
<!ELEMENT medVol %Integer;>
<!ELEMENT medFormat (MedFormCd)>
<!ELEMENT medNote (#PCDATA)>
<!ELEMENT unitsODist (#PCDATA)>
<!ELEMENT transSize %Real;>
<!ELEMENT onLineSrc %OnlineRes;>
<!ELEMENT offLineMed %Medium;>
<!ELEMENT resFees (#PCDATA)>
<!ELEMENT planAvDtTm %DateTime;>
<!ELEMENT ordInstr (#PCDATA)>
<!ELEMENT ordTurn (#PCDATA)>
<!ELEMENT distorCont %RespParty;>
<!ELEMENT distorFormat %Format;>
<!ELEMENT distorOrdPrc %StanOrdProc;>
<!ELEMENT distorTran %DigTranOps;>
<!ELEMENT distributor %Distributor;>
<!ELEMENT distTranOps %DigTranOps;>
<!ELEMENT formatName (#PCDATA)>
<!ELEMENT formatVer (#PCDATA)>
<!ELEMENT formatAmdNum (#PCDATA)>
<!ELEMENT formatSpec (#PCDATA)>
<!ELEMENT fileDecmTech (#PCDATA)>
<!--Extension Elements-->
<!ELEMENT extEleName (#PCDATA)>
<!ELEMENT extShortName (#PCDATA)>
<!ELEMENT extDomCode %Integer;>
<!ELEMENT extEleDef (#PCDATA)>
<!ELEMENT extEleOb (ObCd)>
<!ELEMENT extEleCond (#PCDATA)>
<!ELEMENT eleDataType (DatatypeCd)>
<!ELEMENT extEleMxOc (#PCDATA)>
<!ELEMENT extEleDomVal (#PCDATA)>
<!ELEMENT extEleParEnt (#PCDATA)>
<!ELEMENT extEleRule (#PCDATA)>
<!ELEMENT extEleRat (#PCDATA)>
<!ELEMENT extEleSrc %RespParty;>
<!ELEMENT extOnRes %OnlineRes;>
```

```
<!ELEMENT extEleInfo %ExtEleInfo;>
<!--Application Schema Elements-->
<!ELEMENT asName %Citation;>
<!ELEMENT asSchLang (#PCDATA)>
<!ELEMENT asCstLang (#PCDATA)>
<!ELEMENT asAscii (#PCDATA)>
<!ELEMENT asGraFile (#PCDATA)>
<!ELEMENT asSwDevFile %Binary;>
<!ELEMENT asSwDevFiFt (#PCDATA)>
<!ELEMENT featCatSup %SpatAttSup;>
<!ELEMENT spatObj (#PCDATA)>
<!ELEMENT spatSchName (#PCDATA)>
<!ELEMENT SpatAttSup %SpatAttSup;>
<!ELEMENT featTypeList %FeatTypList;>
<!--Extent Elements-->
<!ELEMENT TempExtent %TempExtent;>
<!ELEMENT exTemp %TM_Primitive;>
<!ELEMENT VertExtent %VertExtent;>
<!ELEMENT vertMinVal %Real;>
<!ELEMENT vertMaxVal %Real;>
<!ELEMENT vertUoM %UomLength;>
<!ELEMENT vertDatum %SC_VerticalDatum;>
<!ELEMENT exDesc (#PCDATA)>
<!ELEMENT vertEle %VertExtent;>
<!ELEMENT tempEle %TempExtentTypes;>
<!ELEMENT geoEle %GeoExtentTypes;>
<!ELEMENT exTypeCode %Boolean;>
<!ELEMENT BoundPoly %BoundPoly;>
<!ELEMENT polygon %GM_ObjectTypes;>
<!ELEMENT GeoBndBox %GeoBndBox;>
<!ELEMENT westBL %Real;>
<!ELEMENT eastBL %Real;>
<!ELEMENT southBL %Real;>
<!ELEMENT northBL %Real;>
<!ELEMENT SpatTempEx %SpatTempEx;>
<!ELEMENT exSpat %GeoExtentTypes;>
<!ELEMENT GeoDesc %GeoDesc;>
<!ELEMENT geold %MdIdent;>
<!--Citation Elements-->
<!ELEMENT rpIndName (#PCDATA)>
<!ELEMENT rpOrgName (#PCDATA)>
<!ELEMENT rpPosName (#PCDATA)>
<!ELEMENT rpCntInfo %Contact;>
<!ELEMENT role (RoleCd)>
<!ELEMENT resTitle (#PCDATA)>
<!ELEMENT resAltTitle (#PCDATA)>
<!ELEMENT resRefDate %DateRef;>
<!ELEMENT resEd (#PCDATA)>
<!ELEMENT resEdDate %Date;>
<!ELEMENT citld (#PCDATA)>
```



```

<!ELEMENT citldType (#PCDATA)>
<!ELEMENT citRespParty %RespParty;>
<!ELEMENT presForm (PresFormCd)>
<!ELEMENT datasetSeries %DatasetSeries;>
<!ELEMENT otherCitDet (#PCDATA)>
<!ELEMENT collTitle (#PCDATA)>
<!ELEMENT isbn (#PCDATA)>
<!ELEMENT issn (#PCDATA)>
<!ELEMENT delPoint (#PCDATA)>
<!ELEMENT city (#PCDATA)>
<!ELEMENT adminArea (#PCDATA)>
<!ELEMENT postCode (#PCDATA)>
<!ELEMENT country (#PCDATA)>
<!ELEMENT eMailAdd (#PCDATA)>
<!ELEMENT linkage %URL;>
<!ELEMENT protocol (#PCDATA)>
<!ELEMENT appProfile (#PCDATA)>
<!ELEMENT orName (#PCDATA)>
<!ELEMENT orDesc (#PCDATA)>
<!ELEMENT orFunct (OnFunctCd)>
<!ELEMENT cntPhone %Telephone;>
<!ELEMENT cntAddress %Address;>
<!ELEMENT cntOnlineRes %OnlineRes;>
<!ELEMENT cntHours (#PCDATA)>
<!ELEMENT cntInstr (#PCDATA)>
<!ELEMENT voiceNum (#PCDATA)>
<!ELEMENT faxNum (#PCDATA)>
<!ELEMENT refDate %Date;>
<!ELEMENT refDateType (DateTypCd)>
<!ELEMENT seriesName (#PCDATA)>
<!ELEMENT issId (#PCDATA)>
<!ELEMENT artPage (#PCDATA)>
<!ELEMENT URL %URL;>
<!--PART 7: CODELIST and ENUMERATION DECLARATIONS-->
<!ELEMENT DateTypCd EMPTY>
<!ATTLIST DateTypCd
    value (001 | 002 | 003) #REQUIRED
>
<!ELEMENT OnFunctCd EMPTY>
<!ATTLIST OnFunctCd
    value (001 | 002 | 003 | 004 | 005) #REQUIRED
>
<!ELEMENT PresFormCd EMPTY>
<!ATTLIST PresFormCd
    value (001 | 002 | 003 | 004 | 005 | 006 | 007 | 008 | 009 | 010 | 011 =
| 012 | 013 | 014) #REQUIRED
>
<!ELEMENT RoleCd EMPTY>
<!ATTLIST RoleCd
    value (001 | 002 | 003 | 004 | 005 | 006 | 007 | 008 | 009 | 010) =

```

```
#REQUIRED
>
<!ELEMENT EvalMethTypeCd EMPTY>
<!ATTLIST EvalMethTypeCd
    value (001 | 002 | 003) #REQUIRED
>
<!ELEMENT CellGeoCd EMPTY>
<!ATTLIST CellGeoCd
    value (001 | 002) #REQUIRED
>
<!ELEMENT CharSetCd EMPTY>
<!ATTLIST CharSetCd
    value (001 | 002 | 003 | 004 | 005 | 006 | 007 | 008 | 009 | 010 | 011 =
| 012 | 013 | 014 | 015 | 016 | 017 | 018 | 019 | 020 | 021 | 022 | 023 =
| 024) #REQUIRED
>
<!ELEMENT ClasscationCd EMPTY>
<!ATTLIST ClasscationCd
    value (001 | 002 | 003 | 004 | 005) #REQUIRED
>
<!ELEMENT ContentTypCd EMPTY>
<!ATTLIST ContentTypCd
    value (001 | 002 | 003) #REQUIRED
>
<!ELEMENT DatatypeCd (#PCDATA)>
<!ATTLIST DatatypeCd
    value (001 | 002 | 003 | 004 | 005 | 006 | 007 | 008 | 009 | 010 | 011 =
| 012 | 013 | 014 | 015) #REQUIRED
>
<!ELEMENT DimNameTypCd EMPTY>
<!ATTLIST DimNameTypCd
    value (001 | 002 | 003 | 004 | 005 | 006 | 007 | 008) #REQUIRED
>
<!ELEMENT GeoObjTypCd EMPTY>
<!ATTLIST GeoObjTypCd
    value (001 | 002 | 003 | 004 | 005 | 006) #REQUIRED
>
<!ELEMENT ImgCondCd EMPTY>
<!ATTLIST ImgCondCd
    value (001 | 002 | 003 | 004 | 005 | 006 | 007 | 008 | 009 | 010 | =
011) #REQUIRED
>
<!ELEMENT KeyTypCd EMPTY>
<!ATTLIST KeyTypCd
    value (001 | 002 | 003 | 004 | 005) #REQUIRED
>
<!ELEMENT MaintFreqCd EMPTY>
<!ATTLIST MaintFreqCd
    value (001 | 002 | 003 | 004 | 005 | 006 | 007 | 008 | 009 | 010 | 011 =
| 998) #REQUIRED
```

```
>
<!ELEMENT MedFormCd EMPTY>
<!ATTLIST MedFormCd
      value (001 | 002 | 003 | 004 | 005 | 006) #REQUIRED
>
<!ELEMENT MedNameCd EMPTY>
<!ATTLIST MedNameCd
      value (001 | 002 | 003 | 004 | 005 | 006 | 007 | 008 | 009 | 010 | 011 =
| 012 | 013 | 014 | 015 | 016 | 017 | 018) #REQUIRED
>
<!ELEMENT ObCd EMPTY>
<!ATTLIST ObCd
      value (001 | 002 | 003) #REQUIRED
>
<!ELEMENT PixOrientCd EMPTY>
<!ATTLIST PixOrientCd
      value (001 | 002 | 003 | 004 | 005) #REQUIRED
>
<!ELEMENT ProgCd EMPTY>
<!ATTLIST ProgCd
      value (001 | 002 | 003 | 004 | 005 | 006 | 007) #REQUIRED
>
<!ELEMENT RestrictCd EMPTY>
<!ATTLIST RestrictCd
      value (001 | 002 | 003 | 004 | 005 | 006 | 007 | 008) #REQUIRED
>
<!ELEMENT ScopeCd EMPTY>
<!ATTLIST ScopeCd
      value (001 | 002 | 003 | 004 | 005 | 006 | 007 | 008 | 009 | 010 | 011 =
| 012 | 013 | 014 | 015) #REQUIRED
>
<!ELEMENT SpatRepTypCd EMPTY>
<!ATTLIST SpatRepTypCd
      value (001 | 002 | 003 | 004 | 005 | 006) #REQUIRED
>
<!ELEMENT TopicCatCd EMPTY>
<!ATTLIST TopicCatCd
      value (001 | 002 | 003 | 004 | 005 | 006 | 007 | 008 | 009 | 010 | 011 =
| 012 | 013 | 014 | 015 | 016 | 017 | 018 | 019) #REQUIRED
>
<!ELEMENT TopoLevCd EMPTY>
<!ATTLIST TopoLevCd
      value (001 | 002 | 003 | 004 | 005 | 006 | 007 | 008 | 009) #REQUIRED
>
<!--The language codelist below comes from ISO 639-2, as various parts =
of that standard can be used, the codelist is not present in 19115.-->
<!ELEMENT languageCode EMPTY>
<!ATTLIST languageCode
      value (aa | ab | af | am | ar | as | ay | az | ba | be | bg | bh | bi =
| bn | bo | br | ca | co | cs | cy | da | de | dz | el | en | eo | es | =
```

et | eu | fa | fi | fj | fo | fr | fy | ga | gd | gl | gn | gu | ha | =
hi | hr | hu | hy | ia | ie | ik | in | is | it | iw | ja | ji | jw | =
ka | kk | kl | km | kn | ko | ks | ku | ky | la | ln | lo | lt | lv | =
mg | mi | mk | ml | mn | mo | mr | ms | mt | my | na | ne | nl | no | =
oc | om | or | pa | pl | ps | pt | qu | rm | rn | ro | ru | rw | sa | =
sd | sg | sh | si | sk | sl | sm | sn | so | sq | sr | ss | st | su | =
sv | sw | ta | te | tg | th | ti | tk | tl | tn | to | tr | ts | tt | =
tw | uk | ur | uz | vi | vo | wo | xh | yo | zh | zu) "en"

>

5 (August 2001).

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<!-- FGDC Metadata DTD 3.0.1 19990611 -->

<!-- This is the Document Type Declaration for formal metadata, metadata -->
<!-- conforming to the Content Standards for Digital Geospatial Metadata -->
<!-- of the Federal Geographic Data Committee. This DTD corresponds to -->
<!-- the June, 1998 version of the standard, FGDC-STD-001-1998. -->
<!-- This file is the XML DTD. -->

<!-- Tags: -->
<!-- Tags are a maximum of 8-characters long, to coincide with the -->
<!-- Reference Concrete Syntax. In some systems, this will obviate -->
<!-- the need for an explicit SGML declaration. -->

<!-- Entity sets: -->
<!-- Scalar values (meaning the values of elements that are not -->
<!-- compound) are here declared #PCDATA to allow parsers to -->
<!-- recognize and support entities representing special characters -->
<!-- such as the degree symbol, less, and greater. -->

<!-- Element ordering: -->
<!-- Generally the order of elements is now significant. XML makes -->
<!-- it difficult to write a DTD that allows elements to be in any -->
<!-- order. -->

<!-- Authors: -->
<!-- Peter N. Schweitzer (U.S. Geological Survey, Reston, VA 20192) -->
<!-- with assistance from Doug Nebert (USGS), Eric Miller (OCLC), -->
<!-- Quinn Hart (CERES), Jim Frew (UCSB), and Archie Warnock (AWWW). -->
<!-- -->

<!-- Revisions: -->
<!-- 19990611 (PNS) Removed extinfo from content model of metadata. -->
<!-- Removed SGML entity declarations, replaced with -->
<!-- Latin-1 entity declarations from HTML. (3.0.1) -->

<!--=====-->

<!-- Maybe this is the right entity reference for XML -->

<!ENTITY % HTMLlat1 PUBLIC
-//W3C//ENTITIES Full Latin 1//EN//HTML
<http://www.fgdc.gov/metadata/HTMLlat1>
>

<!-- %HTMLlat1; -->

<!--=====-->

<!ELEMENT metadata (idinfo, dataqual?, spdoinfo?, spref?, eainfo?, distinfo*, metainfo)>
<!ELEMENT idinfo (citation, descript, timeperd, status, spdom, keywords, accconst, useconst, ptconta
<!ELEMENT citation (citeinfo)>
<!ELEMENT descript (abstract, purpose, supplinf?)>

<!ELEMENT timeperd (timeinfo, current)>
 <!ELEMENT status (progress, update)>
 <!ELEMENT spdom (bounding, dsgpoly*)>
 <!ELEMENT bounding (westbc, eastbc, northbc, southbc)>
 <!ELEMENT dsgpoly (dsgpolyo, dsgpolyx*)>
 <!ELEMENT dsgpolyo ((grngpoin,grngpoin,grngpoin,grngpoin+) | gring)>
 <!ELEMENT dsgpolyx ((grngpoin,grngpoin,grngpoin,grngpoin+) | gring)>
 <!ELEMENT grngpoin (gringlat,gringlon)>
 <!ELEMENT keywords (theme+, place*, stratum*, temporal*)>
 <!ELEMENT theme (themekt, themekey+)>
 <!ELEMENT place (placekt, placekey+)>
 <!ELEMENT stratum (stratkt, stratkey+)>
 <!ELEMENT temporal (tempkt, tempkey+)>
 <!ELEMENT ptcontac (cntinfo)>
 <!ELEMENT browse (browsen, browsed, browsed)>
 <!ELEMENT secinfo (secsys, secclass, sechandl)>
 <!ELEMENT crossref (citeinfo)>
 <!ELEMENT dataqual (attracc?, logic, complete, posacc?, lineage, cloud?)>
 <!ELEMENT attracc (attraccr, qattracc*)>
 <!ELEMENT qattracc (attraccv, attracce)>
 <!ELEMENT posacc (horizpa?, vertacc?)>
 <!ELEMENT horizpa (horizpar, qhorizpa*)>
 <!ELEMENT qhorizpa (horizpav, horizpae)>
 <!ELEMENT vertacc (vertaccr, qvertpa*)>
 <!ELEMENT qvertpa (vertaccv, vertacce)>
 <!ELEMENT lineage (srcinfo*, procstep+)>
 <!ELEMENT srcinfo (srccite, srcscale?, typesrc, srctime, srccitea, srctr)>
 <!ELEMENT srccite (citeinfo)>
 <!ELEMENT srctime (timeinfo, srccurr)>
 <!ELEMENT procstep (procdesc, srcused*, procddate, proctime?, srcprod*, proccont?)>
 <!ELEMENT proccont (cntinfo)>
 <!ELEMENT spdoinfo (indspref?, (direct, ((ptvctinf | rastinfo))?)?)>
 <!ELEMENT ptvctinf ((sdtsterm+ | vpfterm))>
 <!ELEMENT sdtsterm (sdtstype, ptvctcnt?)>
 <!ELEMENT vpfterm (vpflevel, vpfinfo+)>
 <!ELEMENT vpfinfo (vpfptype, ptvctcnt?)>
 <!ELEMENT rastinfo (rasttype, (rowcount, colcount, vrtcount?)?)>
 <!ELEMENT spref (horizsys?, vertdef?)>
 <!ELEMENT horizsys ((geograph | planar+ | local), geodetic?)>
 <!ELEMENT geograph (latres, longres, geogunit)>
 <!ELEMENT planar ((mapproj | gridsys | localp), planci)>
 <!ELEMENT mapproj (mapprojn, (albers | azimequi | equicon | equirect | gvns | gnomonic | lamberta |
 <!ELEMENT albers (stdparll+, longcm, latprjo, feast, fnorth)>
 <!ELEMENT azimequi (longcm, latprjo, feast, fnorth)>
 <!ELEMENT equicon (stdparll+, longcm, latprjo, feast, fnorth)>
 <!ELEMENT equirect (stdparll, longcm, feast, fnorth)>
 <!ELEMENT gvns (heightpt, longpc, latprjc, feast, fnorth)>
 <!ELEMENT gnomonic (longpc, latprjc, feast, fnorth)>
 <!ELEMENT lamberta (longpc, latprjc, feast, fnorth)>
 <!ELEMENT lambertc (stdparll+, longcm, latprjo, feast, fnorth)>
 <!ELEMENT mercator ((stdparll | sfequat), longcm, feast, fnorth)>
 <!ELEMENT modsak (feast, fnorth)>

<!ELEMENT miller (longcm, feast, fnorth)>
<!ELEMENT obqmerc (sfctrln, (obqlazim | obqlpt), latprjo, feast, fnorth)>
<!ELEMENT obqlazim (azimangl, azimptl)>
<!ELEMENT obqlpt ((obqllat, obqllong),(obqllat, obqllong))>
<!ELEMENT orthogr (longpc, latprjc, feast, fnorth)>
<!ELEMENT polarst (svlong, (stdparll | sfprjorg), feast, fnorth)>
<!ELEMENT polycon (longcm, latprjo, feast, fnorth)>
<!ELEMENT robinson (longpc, feast, fnorth)>
<!ELEMENT sinusoid (longcm, feast, fnorth)>
<!ELEMENT spaceobq (landsat, pathnum, feast, fnorth)>
<!ELEMENT stereo (longpc, latprjc, feast, fnorth)>
<!ELEMENT transmer (sfctrmer, longcm, latprjo, feast, fnorth)>
<!ELEMENT vdgrin (longcm, feast, fnorth)>
<!ELEMENT mapprojp (azimptl?, azimangl?, feast?, fnorth?, heightpt?, landsat?, latprjc?, latprjo?, long
<!ELEMENT gridsys (gridsysn, (utm | ups | spcs | arcsys | othergrd))>
<!ELEMENT utm (utmzone, transmer)>
<!ELEMENT ups (upszone, polarst)>
<!ELEMENT spcs (spcszone, (lambertc | transmer | obqmerc | polycon))>
<!ELEMENT arcsys (arczone, (equirect | azimequi))>
<!ELEMENT localp (localpd, localpgi)>
<!ELEMENT planci (plance, (coordrep | distbrep), plandu)>
<!ELEMENT coordrep (absres, ordres)>
<!ELEMENT distbrep (distres, bearres, bearunit, bearrefd, bearrefm)>
<!ELEMENT local (localdes, localgeo)>
<!ELEMENT geodetic (horizdn?, ellips, semiaxis, denflat)>
<!ELEMENT vertdef (altsys?, depthsys?)>
<!ELEMENT altsys (altdatum, altres+, altunits, altenc)>
<!ELEMENT depthsys (depthdn, depthres+, depthdu, depthem)>
<!ELEMENT eainfo (detailed*, overview*)>
<!ELEMENT detailed (enttyp, attr*)>
<!ELEMENT enttyp (enttyp, enttypd, enttypds)>
<!ELEMENT attr (attrlabl, attrdef, attrdefs, attrdomv+, (begdatea, enddatea?)*, attrvai?, attrmfrq?)>
<!ELEMENT attrdomv ((edom+ | rdom | codesetd | udom))>
<!ELEMENT edom (edomv, edomvd, edomvds, attr*)>
<!ELEMENT rdom (rdommin, rdommax, attrunit?, attrmres?, attr*)>
<!ELEMENT codesetd (codesetn, codesets)>
<!ELEMENT attrvai (attrva, attrvae)>
<!ELEMENT overview (eaover, eadetcit+)>
<!ELEMENT distinfo (distrib, (resdesc?, distliab, stdorder*, custom?, techpreq?, availabl?))>
<!ELEMENT distrib (cntinfo)>
<!ELEMENT stdorder ((nondig | digform+), fees, ordering?, turnarnd?)>
<!ELEMENT digform (digtinfor, digtopt)>
<!ELEMENT digtinfor (formname, ((formvern | formverd), formspec?)?, formcont?, fileddec?, transize?)>
<!ELEMENT digtopt (((onlinopt | offoptn))+)>
<!ELEMENT onlinopt (computer+, accinstr?, oncomp?)>
<!ELEMENT computer ((networka | dialinst))>
<!ELEMENT networka (networkr+)>
<!ELEMENT dialinst (lowbps, highbps?, numdata, numstop, parity, compress?, dialtel+, dialfile+)>
<!ELEMENT offoptn (offmedia, reccap?, recfmt+, compat?)>
<!ELEMENT reccap (recden+, recdenu)>
<!ELEMENT availabl (timeinfo)>
<!ELEMENT metainfo (metd, (metrd, metfrd?)?, metc, metstdn, metstdv, mettc?, metac?, metuc?, met:

<!ELEMENT metc (cntinfo)>
<!ELEMENT metsi (metscs, metsc, metshd)>
<!ELEMENT metextns (onlink*, metprof?)>
<!ELEMENT citeinfo (origin+, pubdate, pubtime?, title, edition?, geoform?, serinfo?, pubinfo?, othercit?,
<!ELEMENT serinfo (sername, issue)>
<!ELEMENT pubinfo (pubplace, publish)>
<!ELEMENT lworkcit (citeinfo)>
<!ELEMENT timeinfo ((sngdate | mdattim | rngdates))>
<!ELEMENT sngdate (caldate, time?)>
<!ELEMENT mdattim (sngdate+)>
<!ELEMENT rngdates (begdate, begtime?, enddate, endtime?)>
<!ELEMENT cntinfo ((cntperp | cntorgp), cntpos?, cntaddr+, cntvoice+, cnttdd*, cntfax*, cntemail*, hou
<!ELEMENT cntperp (cntper, cntorg?)>
<!ELEMENT cntorgp (cntorg, cntper?)>
<!ELEMENT cntaddr (addrtype, address*, city, state, postal, country?)>
<!ELEMENT arczone (#PCDATA)>
<!ELEMENT absres (#PCDATA)>
<!ELEMENT abstract (#PCDATA)>
<!ELEMENT accconst (#PCDATA)>
<!ELEMENT accinstr (#PCDATA)>
<!ELEMENT address (#PCDATA)>
<!ELEMENT addrtype (#PCDATA)>
<!ELEMENT altdatum (#PCDATA)>
<!ELEMENT altunits (#PCDATA)>
<!ELEMENT altenc (#PCDATA)>
<!ELEMENT altres (#PCDATA)>
<!ELEMENT attracce (#PCDATA)>
<!ELEMENT attraccr (#PCDATA)>
<!ELEMENT attraccv (#PCDATA)>
<!ELEMENT attrdef (#PCDATA)>
<!ELEMENT attrdefs (#PCDATA)>
<!ELEMENT attrlabl (#PCDATA)>
<!ELEMENT attrmfreq (#PCDATA)>
<!ELEMENT attrmres (#PCDATA)>
<!ELEMENT attrunit (#PCDATA)>
<!ELEMENT attrva (#PCDATA)>
<!ELEMENT attrvae (#PCDATA)>
<!ELEMENT azimptl (#PCDATA)>
<!ELEMENT azimangl (#PCDATA)>
<!ELEMENT bearrefd (#PCDATA)>
<!ELEMENT bearrefm (#PCDATA)>
<!ELEMENT bearres (#PCDATA)>
<!ELEMENT bearunit (#PCDATA)>
<!ELEMENT begdate (#PCDATA)>
<!ELEMENT begdatea (#PCDATA)>
<!ELEMENT begtime (#PCDATA)>
<!ELEMENT browsed (#PCDATA)>
<!ELEMENT browsen (#PCDATA)>
<!ELEMENT browset (#PCDATA)>
<!ELEMENT caldate (#PCDATA)>
<!ELEMENT city (#PCDATA)>
<!ELEMENT cloud (#PCDATA)>

<!ELEMENT codesetn (#PCDATA)>
<!ELEMENT codesets (#PCDATA)>
<!ELEMENT colcount (#PCDATA)>
<!ELEMENT compat (#PCDATA)>
<!ELEMENT complete (#PCDATA)>
<!ELEMENT compress (#PCDATA)>
<!ELEMENT cntemail (#PCDATA)>
<!ELEMENT cntfax (#PCDATA)>
<!ELEMENT cntinst (#PCDATA)>
<!ELEMENT cntorg (#PCDATA)>
<!ELEMENT cntper (#PCDATA)>
<!ELEMENT cntpos (#PCDATA)>
<!ELEMENT cnttdd (#PCDATA)>
<!ELEMENT cntvoice (#PCDATA)>
<!ELEMENT country (#PCDATA)>
<!ELEMENT current (#PCDATA)>
<!ELEMENT custom (#PCDATA)>
<!ELEMENT datacred (#PCDATA)>
<!ELEMENT denflat (#PCDATA)>
<!ELEMENT depthdn (#PCDATA)>
<!ELEMENT depthdu (#PCDATA)>
<!ELEMENT depthem (#PCDATA)>
<!ELEMENT depthres (#PCDATA)>
<!ELEMENT dialfile (#PCDATA)>
<!ELEMENT dialtel (#PCDATA)>
<!ELEMENT direct (#PCDATA)>
<!ELEMENT distres (#PCDATA)>
<!ELEMENT distliab (#PCDATA)>
<!ELEMENT eastbc (#PCDATA)>
<!ELEMENT edition (#PCDATA)>
<!ELEMENT ellips (#PCDATA)>
<!ELEMENT enddate (#PCDATA)>
<!ELEMENT enddatea (#PCDATA)>
<!ELEMENT endtime (#PCDATA)>
<!ELEMENT enttypd (#PCDATA)>
<!ELEMENT enttypds (#PCDATA)>
<!ELEMENT enttypi (#PCDATA)>
<!ELEMENT eadetcit (#PCDATA)>
<!ELEMENT eaover (#PCDATA)>
<!ELEMENT edomv (#PCDATA)>
<!ELEMENT edomvd (#PCDATA)>
<!ELEMENT edomvds (#PCDATA)>
<!ELEMENT feast (#PCDATA)>
<!ELEMENT fnorth (#PCDATA)>
<!ELEMENT fees (#PCDATA)>
<!ELEMENT filedec (#PCDATA)>
<!ELEMENT formcont (#PCDATA)>
<!ELEMENT formname (#PCDATA)>
<!ELEMENT formspec (#PCDATA)>
<!ELEMENT formverd (#PCDATA)>
<!ELEMENT formvern (#PCDATA)>
<!ELEMENT gringlat (#PCDATA)>

<!ELEMENT gringlon (#PCDATA)>
<!ELEMENT geogunit (#PCDATA)>
<!ELEMENT geoform (#PCDATA)>
<!ELEMENT gridsysn (#PCDATA)>
<!ELEMENT heightpt (#PCDATA)>
<!ELEMENT highbps (#PCDATA)>
<!ELEMENT horizdn (#PCDATA)>
<!ELEMENT horizpae (#PCDATA)>
<!ELEMENT horizpar (#PCDATA)>
<!ELEMENT horizpav (#PCDATA)>
<!ELEMENT hours (#PCDATA)>
<!ELEMENT indspref (#PCDATA)>
<!ELEMENT issue (#PCDATA)>
<!ELEMENT landsat (#PCDATA)>
<!ELEMENT latres (#PCDATA)>
<!ELEMENT latprjc (#PCDATA)>
<!ELEMENT latprjo (#PCDATA)>
<!ELEMENT localdes (#PCDATA)>
<!ELEMENT localgeo (#PCDATA)>
<!ELEMENT localpd (#PCDATA)>
<!ELEMENT localpgi (#PCDATA)>
<!ELEMENT logic (#PCDATA)>
<!ELEMENT longres (#PCDATA)>
<!ELEMENT longcm (#PCDATA)>
<!ELEMENT longpc (#PCDATA)>
<!ELEMENT lowbps (#PCDATA)>
<!ELEMENT update (#PCDATA)>
<!ELEMENT mapprojn (#PCDATA)>
<!ELEMENT metac (#PCDATA)>
<!ELEMENT metd (#PCDATA)>
<!ELEMENT metfrd (#PCDATA)>
<!ELEMENT metrd (#PCDATA)>
<!ELEMENT metsc (#PCDATA)>
<!ELEMENT metscs (#PCDATA)>
<!ELEMENT metshd (#PCDATA)>
<!ELEMENT metstdn (#PCDATA)>
<!ELEMENT metstdv (#PCDATA)>
<!ELEMENT mettc (#PCDATA)>
<!ELEMENT metuc (#PCDATA)>
<!ELEMENT native (#PCDATA)>
<!ELEMENT networkr (#PCDATA)>
<!ELEMENT nondig (#PCDATA)>
<!ELEMENT northbc (#PCDATA)>
<!ELEMENT numdata (#PCDATA)>
<!ELEMENT numstop (#PCDATA)>
<!ELEMENT obqllat (#PCDATA)>
<!ELEMENT obqllong (#PCDATA)>
<!ELEMENT offmedia (#PCDATA)>
<!ELEMENT oncomp (#PCDATA)>
<!ELEMENT onlink (#PCDATA)>
<!ELEMENT ordering (#PCDATA)>
<!ELEMENT ordres (#PCDATA)>

<!ELEMENT origin (#PCDATA)>
<!ELEMENT othercit (#PCDATA)>
<!ELEMENT othergrd (#PCDATA)>
<!ELEMENT otherprj (#PCDATA)>
<!ELEMENT parity (#PCDATA)>
<!ELEMENT pathnum (#PCDATA)>
<!ELEMENT placekey (#PCDATA)>
<!ELEMENT placekt (#PCDATA)>
<!ELEMENT plance (#PCDATA)>
<!ELEMENT plandu (#PCDATA)>
<!ELEMENT ptvctcnt (#PCDATA)>
<!ELEMENT postal (#PCDATA)>
<!ELEMENT procdage (#PCDATA)>
<!ELEMENT procdesc (#PCDATA)>
<!ELEMENT proctime (#PCDATA)>
<!ELEMENT progress (#PCDATA)>
<!ELEMENT pubdate (#PCDATA)>
<!ELEMENT pubplace (#PCDATA)>
<!ELEMENT pubtime (#PCDATA)>
<!ELEMENT publish (#PCDATA)>
<!ELEMENT purpose (#PCDATA)>
<!ELEMENT rdommax (#PCDATA)>
<!ELEMENT rdommin (#PCDATA)>
<!ELEMENT rasttype (#PCDATA)>
<!ELEMENT recden (#PCDATA)>
<!ELEMENT recdenu (#PCDATA)>
<!ELEMENT recfmt (#PCDATA)>
<!ELEMENT resdesc (#PCDATA)>
<!ELEMENT rowcount (#PCDATA)>
<!ELEMENT sdtstype (#PCDATA)>
<!ELEMENT spcszone (#PCDATA)>
<!ELEMENT sfctrlln (#PCDATA)>
<!ELEMENT sfctrmer (#PCDATA)>
<!ELEMENT sfequat (#PCDATA)>
<!ELEMENT sfprjorg (#PCDATA)>
<!ELEMENT secclass (#PCDATA)>
<!ELEMENT secsys (#PCDATA)>
<!ELEMENT sechandl (#PCDATA)>
<!ELEMENT semiaxis (#PCDATA)>
<!ELEMENT sername (#PCDATA)>
<!ELEMENT srccitea (#PCDATA)>
<!ELEMENT srctrntr (#PCDATA)>
<!ELEMENT srccurr (#PCDATA)>
<!ELEMENT srcprod (#PCDATA)>
<!ELEMENT srcscale (#PCDATA)>
<!ELEMENT srcused (#PCDATA)>
<!ELEMENT southbc (#PCDATA)>
<!ELEMENT stdparll (#PCDATA)>
<!ELEMENT state (#PCDATA)>
<!ELEMENT svlong (#PCDATA)>
<!ELEMENT stratkey (#PCDATA)>
<!ELEMENT stratkt (#PCDATA)>

<!ELEMENT supplinf (#PCDATA)>
<!ELEMENT techpreq (#PCDATA)>
<!ELEMENT tempkey (#PCDATA)>
<!ELEMENT tempkt (#PCDATA)>
<!ELEMENT themekey (#PCDATA)>
<!ELEMENT themekt (#PCDATA)>
<!ELEMENT time (#PCDATA)>
<!ELEMENT title (#PCDATA)>
<!ELEMENT transize (#PCDATA)>
<!ELEMENT turnamd (#PCDATA)>
<!ELEMENT typesrc (#PCDATA)>
<!ELEMENT upszone (#PCDATA)>
<!ELEMENT utmzone (#PCDATA)>
<!ELEMENT udom (#PCDATA)>
<!ELEMENT useconst (#PCDATA)>
<!ELEMENT vpftype (#PCDATA)>
<!ELEMENT vplevel (#PCDATA)>
<!ELEMENT vrtcount (#PCDATA)>
<!ELEMENT vertacce (#PCDATA)>
<!ELEMENT vertaccr (#PCDATA)>
<!ELEMENT vertaccv (#PCDATA)>
<!ELEMENT westbc (#PCDATA)>
<!ELEMENT gring (#PCDATA)>
<!ELEMENT metprof (#PCDATA)>

<!-- End of FGDC Metadata DTD -->

ic?, browse*, datacred?, secinfo?, native?, crossref*)>

lambertc | mercator | modsak | miller | obqmerc | orthogr | polarst | polycon | robinson | sinusoid | space

icm?, longpc?, obqllat*, obqllong*, pathnum?, sfctrlin?, sfctrmer?, sfequat?, sfrjorg?, stdparll*, svlong?)

si?, metextns*)>

, onlink*, lworkcit?)>

rs?, cntinst?)>

obq | stereo | transmer | vdgrin | otherprj | mapproj))>

19108 – Temporal schema Data Dictionary -- Metadata elements for describing tempo

Name / Role name	Definition	Obligation / Condition	Maximum occurrence
TM_ReferenceSystem	Information about a temporal reference system	C/ temporal information in the data set not referenced to the Gregorian calendar?	N
name	Name by which the temporal reference system is known	M	1
domainOfValidity	Limits of space and time within which the temporal reference system is used	C/ Extent of temporal reference system less than extent of data set in which it is used?	N
TM_Calendar	Description of a calendar	Use obligation from referencing object	Use maximum occurrence from referencing object
dateTrans	Description of an operation for converting a date in the specified calendar to a Julian date	M	1
julTrans	Description of an operation for converting a Julian date to a date in the specified calendar	M	1
<i>Role name: referenceFrame</i>	The calendar eras associated with the calendar being described	M	N
<i>Role name: timeBasis</i>	The clock that is used with this calendar to define temporal position within a calendar day	O	1
TM_Clock	Description of a clock	Use obligation from referencing object	Use maximum occurrence from referencing object
referenceEvent	Event used as the datum for this clock	M	1
referenceTime	Time of the reference event for this clock	M	1
utcReference	UTC time of the reference event	M	1
utcTrans	Description of an operation for converting a time on this clock to a UTC time	M	1

clkTrans	Description of an operation for converting a UTC time to a time on this clock	M	1
TM_CoordinateSystem	Description of a temporal coordinate system	Use obligation from referencing object	Use maximum occurrence from referencing object
origin	Position of the origin of the scale on which the temporal coordinate system is based expressed as a date in the Gregorian calendar and time of day in UTC	M	1
interval	Standard unit of time used to measure duration on the axis of the coordinate system	M	1
transformCoord	Description of an operation for converting a coordinate in this temporal coordinate system to a date in the Gregorian calendar and a time in UTC.	M	1
transformDateTime	Description of an operation for converting a date in the Gregorian calendar and a time in UTC to a coordinate in this temporal coordinate system	M	1
TM_OrdinalReferenceSystem	Description of an ordinal temporal reference system	Use obligation from referencing object	Use maximum occurrence from referencing object
<i>Role name:</i> component	Ordinal eras that make up the highest level of this ordinal reference system	M	1
TM_CalendarEra	Characteristics of each calendar era	Use obligation from referencing object	Use maximum occurrence from referencing object
name	Name by which this calendar era is known	M	1
referenceEvent	Event used as the datum for this calendar era	M	1
referenceDate	Date of the reference event in the calendar being described	M	1
julianReference	Julian date of the reference event	M	1
epochOfUse	Period for which the era was used as a basis for dating	M	1

TM_OrdinalEra	Description of an ordinal era	Use obligation from referencing object	Use maximum occurrence from referencing object
name	Name that identifies a specific ordinal era	M	1
begin	Date at which the ordinal era began	O	1
end	Date at which the ordinal era ended	O	1
<i>Role name:</i> member	Ordinal eras that subdivide this ordinal era	M	1

oral reference systems

Data type	Domain
Class	Lines 2-33
RS_Identifier	ISO 19111
EX_Extent	ISO 19103
Specialised Class (TM_ReferenceSystem)	Lines 6 – 15
CharacterString	Free text
CharacterString	Free text
Association	TM_CalendarEra
Association	TM_Clock
Specialised Class (TM_ReferenceSystem)	Lines 17-21
CharacterString	Free text
TM_ClockTime	Time in the clock being described
TM_ClockTime	ISO 8601
CharacterString	Free text

CharacterString	Free text
Specialised Class (TM_ReferenceSystem)	Lines 23-26
DateTime	ISO 8601
CharacterString	ISO 31-1, ISO 1000
CharacterString	Free text
CharacterString	Free text
Specialised Class (TM_ReferenceSystem)	Lines 28-33
Association	TM_OrdinalEra
Aggregated Class (TM_Calendar)	Lines 11-15
CharacterString	Free text
CharacterString	Free text
TM_CalDate	Date in the calendar being described
JulianDate	Number
TM_Period	ISO 8601

Aggregated Class (TM_OrdinalReferenceSystem)	Lines 30-33
CharacterString	Free text
DateTime	ISO 8601
DateTime	ISO 8601
Association	TM_OrdinalEra

ISO-19110 Methodology for feature cataloguing

Name / Role name	Short Name	Definition	Obligation / Condition	Max. occurrence
FC_FeatureCatalogue		Identification and contact information for feature catalogue	M	1
name		Name for feature catalogue	M	1
scope		Subject domain(s) of feature types defined in feature catalogue	M	N
fieldOfApplication		Description of kind(s) of use to which the feature catalogue may be put	O	N
versionNumber		Version number of feature catalogue	M	1
versionDate		Effective date of feature catalogue	M	1
definitionSource		Bibliographic reference, including author, title, edition, publisher, place of publication, and date of publication, to a published source of definitions for feature type names, feature operation names, feature attribute names, and feature relationship names included in feature catalogue	O	N
producer		Name, address, country, and telecommunications address of person or organization having primary responsibility for the intellectual content of the feature catalogue	M	1
functionalLanguage		Notation system used for formal definition	C/ Featu	1
FC_FeatureType		Class of real world phenomena with common properties	M	N
name		Text string that uniquely identifies the feature type within the catalogue	M	1
definition		Definition of the feature type in a natural language	C/ Defini	1
code		Code that uniquely identifies the feature type within a catalogue	O	1
aliases		Name(s) of equivalent feature term(s)	O	N
featureOperationNames		Operations that every instance of this feature type may perform	O	N
featureAttributeNames		Characteristic(s) of the feature type	O	N
featureRelationshipNames		Relationship(s) between instances of this feature type and instances of the same or a different feature type	O	N
subtypeOf		Identifies one or more feature types from which the subject feature type inherits all properties, including feature operations, feature attributes, and feature relationships	O	N

FC_FeatureOperation	Operation that every instance of a feature type may perform	C/ featur N	
name	Text string uniquely identifying feature operation within the catalogue	M	1
featureAttributeNames	Name(s) of the feature attribute(s) participating in the feature operation	M	N
objectFeatureType Names	Name(s) of other feature type(s) affected by the operation	C/ featur N	
definition	Describes how the subject and object feature types and attributes are used or affected by the operation	M	1
formalDefinition	Signatures and equations for the feature operation, in scientific notation	O	1
FC_FeatureAttribute	Characteristic of the feature type	C/ featur N	
name	Text string uniquely identifying feature attribute within the catalogue	M	1
definition	Definition of the feature attribute in a natural language	C/ Defini	1
code	Code that uniquely identifies the feature attribute within the catalogue	O	1
valueDataType	Data type of attribute values	M	1
valueMeasurementUnit	Measurement unit for attribute values	O	1
valueDomainType	Indicates whether or not domain for feature attribute values is enumerated (if omitted, domain is not specified)	O	1
valueDomain	Permissible values of feature attribute	C/ Featu	1
FC_FeatureAttributeValue	Value for the enumerated feature attribute value domain	C/ Featu N	
label	Descriptive label that uniquely identifies one value of this feature attribute	M	1
code	Code that uniquely identifies one value of this feature attribute	O	1
definition	Definition of the attribute value in a natural language	O	1
FC_FeatureAssociation	Relationship that links instances of the feature type with instances of the same or a different feature type	C/ Featu N	
name	Text string uniquely identifying feature relationship within the catalogue	M	1
inverseRelationship	Text string identifying opposite or inverse of feature relationship	O	1
definition	Definition of the Feature Relationship in a natural language	C/ Defini	1
code	Code that uniquely identifies the feature relationship within the catalogue	O	1
Role name: featureTypesIncluded	Names of feature types participating in the relationship	M	N
orderIndicator	Indicates whether the ordering of feature types is significant in the relationship	M	1

cardinality	Possible cardinality of the relationship	O	1
constraints	Constraints on the feature relationship	O	N
roleName	Role played by the feature type included in the feature association	O	N

Data type **Domain**

CharacterString free text
Set CharacterString

CharacterString free text

CharacterString free text
Class Date
Class CI_Citation

Class CI_ResponsibleParty

CharacterString free text

Class LocalName

CharacterString free text

CharacterString free text

CharacterString free text
Association free text

Association free text
Association free text

Association free text

CharacterString free text

text free text

text free text

CharacterString free text

CharacterString symbols

Class LocalName

CharacterString free text

CharacterString free text

CharacterString IDL basic data types

Class UnitOfMeasure

Boolean 0 ="not enumerated", 1 ="enumerated"

CharacterString free text

CharacterString free text

Integer Integer

CharacterString free text

CharacterString free text

text free text

CharacterString free text

CharacterString free text

Association FC_FeatureType

Boolean 0 ="not ordered", 1 ="ordered"

Integer 1 : 1 = "exactly one", 1 : ? = "one or more", 0 : 1 = "zero or one", 0 : ? = "zero or more"

Set CharSequence
text free text

Element name	UML identifier	Data type	Obligation	Maximum occurrence
ISO/FDIS 19111:2002(E) Table 7 — Requirements for description of coordinate system				
Coordinate system identifier	CSID	RS_identifier	M	1
Coordinate system type	type	SC_Coordinate SystemType	M	1
Coordinate system dimension	dimension	Integer	M	1
Coordinate system remarks	remarks	CharacterString	O	1

ISO/FDIS 19111:2002(E) Table 8 — Requirements for description of coordinate system axis				
Coordinate system axis name	axisName	CharacterString	M	1
Coordinate system axis direction	axisDirection	CharacterString	M	1
Coordinate system axis unit identifier	axisUnitID	UnitOf Measure	M	1

Description

cribing a coordinate system

Identifier of the coordinate system.

Type of the coordinate system. The most commonly used entries are: Cartesian, geodetic, projected, polar, gravity-related. Do not use Cartesian if the system is projected.

Number of coordinates {3,2,1} in the set.

Comments on or information about the coordinate system.

cribing a coordinate system axis

Name of the coordinate system axis.
Direction of the coordinate system axes (or, in the case of Cartesian or projected coordinates, the direction of the coordinate system axis at the origin). Examples: north, east, up

Identifier of the unit for the coordinate system axis.

Note #	RE:	Date	Reviewer
1	FGDC 6.4.2.1.2 & 6.4.2.1.3	18-Mar-02	SS
2	FGDC 6.4.2.2.1.2	18-Mar-02	SS
3	FGDC 5		
4	FGDC 4.1.2.1.1	18-Mar-02	SS
5	FGDC 4.1 & 4.2	8-Jan-02	SS
6	FGDC 4.1.2.2.1	18-Mar-02	SS
7	FGDC 1.5.2.1		ISO- 19115
8	FGDC 4.1.2.1.2		
10	<i>citeinfo</i> within <i>idinfo</i> (or other sections)	22-Jul-02	SS
11	Compound Elements	7-Jul-03	BW

These notes were originally prepared in 2002; some have since been rendered moot, and are omitted from this version.

Comment

The ISO definition is: "version of the format (date, number, etc.)" Which means that the ISO element can be the version date or the version number. The only problem being that the ISO element is not repeatable, meaning you can't have both a date and a number. This will likely need to be changed in the US Profile.

The FGDC element's definition says that it provides instructions on how to access a dataset. The ISO element you suggested is defined as providing instructions on how to contact an individual or organization. But, my current mapping to the "protocol" element of CI_OnlineResource is not a very good mapping. A better mapping might be to the "orderingInstructions" element of MD_StandardOrderProcess.

[Entity and Attribute Information -- The detailed metadata which matches these elements are found in ISO 19110 - Feature Catalogue.](#)

Room for a possible extension here, to add a codelist with all the projection names listed in the FGDC standard; (replace with a codelist, 4.1.2.1.2 - 4.1.2.1.22)

19111 - Datum information

(ISO-19111 is only available in PDF format. All "datum" info included, other related info. About coordinates are not included.)

Types of datums --A datum shall be either geodetic, vertical or engineering. A geodetic datum gives the relationship of a coordinate system to the Earth and is used as the basis for two- or three-dimensional systems. It shall include an ellipsoid definition. A vertical datum gives the relationship of gravity-related heights to a surface known as the geoid. The geoid is a surface close to mean sea level. In this International Standard a datum shall be engineering if it is neither geodetic nor vertical.

For geographic information purposes it is necessary to identify a datum, but the definition of the datum itself is optional.

Replace with codelist(s): 4.1.2.2.2 - 4.1.2.2.6

GM_Object: root class of the geometric object taxonomy and supports interfaces common to all geographically referenced geometric objects. This class is fully documented in ISO 19107.

Each projection name uses various elements from 4.1.2.1.23. The sub-elements have been mapped while the projection names have not.

When Citation and Extent elements are used within other entities you should to map to the whole "chain", not just the bottom element. Therefore all of the elements grouped within the "citeinfo" section of "idinfo" are more properly named if preceded by "MD_Metadata.identificationInfo.MD_Identification.citation." Citeinfo also occurs within other sections, and so should also be more fully identified there.

On the "Xwalk" tab, some FGDC compound elements include identification of an equivalent ISO element name; others do not. In most cases, ISO equivalents are named for reference purposes. That is, FGDC metadata records will not contain actual content for these, other than the content of their lower-level components. Each of these components can be "crosswalked" to the ISO equivalents named for them. There are some exceptions to this (example: 2.5.1.4 Source Time Period of Content).

Old Locus (V3.1)	New Value
	Note: This page records changes made in April 2003 by a group review process c V4.0; the ranges indicated in Column A refer to the prior version (V3.1) of the cross
C103	MD_Metadata.dataQualityInfo.DQ_DataQuality.lineage.LI_Lineage.source.LI_So urce.sourceExtent.EX_Extent.temporalExtent.EX_TemporalExtent.extent
C104	MD_Metadata.dataQualityInfo.DQ_DataQuality.lineage.LI_Lineage.source.LI_So urce.sourceExtent.EX_Extent.description
C116	MD_Metadata.referenceSystemInfo.MD_ReferenceSystem.referenceSystemIde ntifier.RS_Identifier.code
C133	---
C134	MD_Metadata.referenceSystemInfo.MD_ReferenceSystem.referenceSystemIde ntifier.RS_Identifier.code (= FGDC Geographic)
C140	MD_Metadata.referenceSystemInfo.MD_CRS.projection.RS_Identifier.code
C185	MD_Metadata.referenceSystemInfo.MD_ReferenceSystem.referenceSystemIde ntifier.RS_Identifier.code
C186	<blank>
C187	MD_Metadata.referenceSystemInfo.MD_ReferenceSystem.referenceSystemIde ntifier.RS_Identifier.code
C191	MD_Metadata.referenceSystemInfo.MD_CRS.projectionParameters.MD_Projecti onParameters.
C191	MD_Metadata.referenceSystemInfo.MD_CRS.projectionParameters.MD_Projecti onParameters.zone
C194	MD_Metadata.referenceSystemInfo.MD_CRS.projectionParameters.MD_Projecti onParameters.
C194	MD_Metadata.referenceSystemInfo.MD_CRS.projectionParameters.MD_Projecti onParameters.zone
C197	MD_Metadata.referenceSystemInfo.MD_CRS.projectionParameters.MD_Projecti onParameters.
C197	MD_Metadata.referenceSystemInfo.MD_CRS.projectionParameters.MD_Projecti onParameters.zone
C200	MD_Metadata.referenceSystemInfo.MD_CRS.projectionParameters.MD_Projecti onParameters.
C203	MD_Metadata.referenceSystemInfo.MD_ReferenceSystem.referenceSystemIde ntifier.RS_Identifier.code
C204	MD_Metadata.referenceSystemInfo.MD_ReferenceSystem.referenceSystemIde ntifier.RS_Identifier.code

C208 MD_Metadata.spatialRepresentationInfo.MD_GridSpatailRepresentation.axisDimensionProperties.MD_Dimension.resolution.Measure (dimension=column code (002))

C209 MD_Metadata.spatialRepresentationInfo.MD_GridSpatailRepresentation.axisDimensionProperties.MD_Dimension.resolution.Measure (dimension=row code (001))

C211 NO MATCH

C218 MD_Metadata.referenceSystemInfo.MD_ReferenceSystem.referenceSystemIdentifier.RS_Identifier.code

C219 MD_Metadata.referenceSystemInfo.MD_ReferenceSystem.referenceSystemIdentifier.RS_Identifier.code

C221 MD_Metadata.referenceSystemInfo.MD_CRS.datum.RS_Identifier.code

C222 MD_Metadata.referenceSystemInfo.MD_CRS.ellipsoid.RS_Identifier.code

C225 <blank>

C226 <blank>

C227 MD_Metadata.identificationInfo.MD_DataIdentification.extent.EX_Extent.verticalElement.EX_VerticalExtent.verticalDatum.SC_VerticalDatum.datumID.RS_Identifier.code

C228 NO MATCH

C228 MD_Metadata.spatialRepresentationInfo.MD_GridSpatailRepresentation.axisDimensionProperties.MD_Dimension.resolution.Measure (dimension=vertical code (003))

C229 MD_Metadata.identificationInfo.MD_DataIdentification.extent.EX_Extent.vertical

C229 MD_Metadata.spatialRepresentationInfo.MD_GridSpatailRepresentation.axisDimensionProperties.MD_Dimension.resolution.Measure (dimension=vertical code (003))

C232 MD_Metadata.identificationInfo.MD_DataIdentification.extent.EX_Extent.verticalElement.EX_VerticalExtent.verticalDatum.SC_VerticalDatum.datumID.RS_Identifier.code

C233 NO MATCH

C233 MD_Metadata.spatialRepresentationInfo.MD_GridSpatailRepresentation.axisDimensionProperties.MD_Dimension.resolution.Measure (dimension=vertical code (003))

C234 MD_Metadata.identificationInfo.MD_DataIdentification.extent.EX_Extent.verticalElement.EX_VerticalExtent.unitsOfMeasure

C234 MD_Metadata.spatialRepresentationInfo.MD_GridSpatailRepresentation.axisDimensionProperties.MD_Dimension.resolution.Measure (dimension=vertical code (003))

C263 <blank>

C264 MD_Metadata.dataQualityInfo.DQ_DataQuality.report.DQ_QuantitativeAttributeAccuracy.result.DQ_QuantitativeResult.value

C265 MD_Metadata.dataQualityInfo.DQ_DataQuality.report.DQ_QuantitativeAttributeAccuracy.measureDescription

C268 MD_Metadata.contentInfo.MD_FeatureCatalogueDescription.featureCatalogueCitation.CI_Citation.otherCitationDetails

C269 Append to
MD_Metadata.contentInfo.MD_FeatureCatalogueDescription.featureCatalogueCitation.CI_Citation.otherCitationDetails

C272 MD_Metadata.identificationInfo.MD_Identification.citation.CI_Citation.identifier

C273 MD_Metadata.identificationInfo.MD_Identification.resourceConstraints.MD_LegalConstraints.otherConstraints

C275 MD_Metadata.distributionInfo.MD_Distribution.distributor.MD_Distributor.distributionOrderProcess.MD_StandardOrderProcess.orderingInstructions

C282 APPEND to
MD_Metadata.distributionInfo.MD_Distribution.distributionFormat.MD_Format.specification

C289 MD_Metadata.distributionInfo.MD_Distribution.transferOptions.MD_DigitalTransferOption.online.CI_OnlineResource.name

C290 <blank>

C311 Append to 6.4.4

C316 MD_Metadata.metadataMaintenance.MD_MaintenanceInformation.maintenanceNote

C329 MD_Metadata.metadataExtensionInfo.MD_MetadataExtensionInformation.extensionOnLineResource.CI_OnlineResource.linkage

C337 CI_Citation.date.CI_Date.date

C349 MD_Metadata.distributionInfo.MD_Distribution.transferOptions.MD_DigitalTransferOptions.onLine.CI_OnlineResource.linkage (function=download, code 001)

C352 EX_Extent.temporalElement.EX_TemporalExtent.extent

C353 EX_Extent.temporalElement.EX_TemporalExtent.extent

C354 EX_Extent.temporalElement.EX_TemporalExtent.extent

C355 EX_Extent.temporalElement.EX_TemporalExtent.extent

C356 EX_Extent.temporalElement.EX_TemporalExtent.extent

C357 EX_Extent.temporalElement.EX_TemporalExtent.extent

C358 EX_Extent.temporalElement.EX_TemporalExtent.extent

C359 EX_Extent.temporalElement.EX_TemporalExtent.extent

C360 EX_Extent.temporalElement.EX_TemporalExtent.extent

D103 Compound element, no mapping necessary

D103 Compound element, map to subordinate fields

D104 Compound element, map to subordinate fields

D107 Compound element, no mapping necessary

D113 Compound element, map to subordinate fields

D117 When data is point, then in ISO = vector (001)

D118 Compound element, no mapping necessary

D133 Compound element, no mapping necessary

D182 Content held in "Other"

D183 Content held in "Other"

D184 Content held in "Other"

D186 Compound Element

D189 Compound Element
D192 Compound Element
D194 ISO datatype to be changed to alphanumeric
D195 Compound Element
D198 Compound Element
D208 Mapping applies to grid data
D208 Mapping applies to grid data only, data type determined by FGDC 3.2. If vector fuzzy tolerance, then ISO 19111?
D209 Mapping applies to grid data
D209 Mapping applies to grid data only, data type determined by FGDC 3.2. If vector fuzzy tolerance, then ISO 19111?
D210 Compound element, no mapping necessary
D225 Compound element, no mapping necessary
D228 Mapping applies to grid data only, data type determined by FGDC 3.2. If vector fuzzy tolerance, then ISO 19111?
D229 "Measure" from ISO 19103, includes type and units of measure
D230 Move content to other
D233 Mapping applies to grid data only, data type determined by FGDC 3.2. If vector fuzzy tolerance, then ISO 19111?

D234 "Measure" from ISO 19103, includes type and units of measure

D235 Move content to other

D236 Compound element, no mapping necessary

D237 When FGDC Section 5.1 exists then create MD_Metadata.contentInfo.MD_FeatureCatalogueDescription. Create FC_FeatureCatalogue as packet following MD_Metadata.

D239 Compound element, no mapping necessary

D243 Compound element, no mapping necessary

D256 Move content to other

D261 Contact coordinator for ISO 19110?

D262 Contact coordinator for ISO 19110?

D263 Compound element, no mapping necessary

D264 Move content to other. Content is repeated from FGDC 2.1.2.1

D264 Create additional instance(s) of FGDC 2.1.2.1

D265 Move content to other. Content is repeated from FGDC 2.1.2.2

D265 Create additional instance(s) of FGDC 2.1.2.2

D266 Move content to other

D273 highly dependent on user interpretation

D273 highly dependent on user FGDC interpretation

D275 A unique instance: see 6.4.4

D282 Deprecate

D290 Compound element, no mapping necessary

D291 Deprecated

D291 <blank>

D309 A unique instance: see 6.4.1

D311 Deprecate

D316 Note: reflects last review, last update reflected by MetadataDate-
MD_Metadata.dateStamp

D321 Deprecate

D337 ISO uses date or dateTime

D349 FGDC intent to download data

D370 Deprecated

D377 Extension candidate- ISO B.3.2.6

D80 Compound element, no mapping necessary

D82 Compound element, no mapping necessary

D87 Compound element, no mapping necessary

D89 A unique instance: See 2.4.2.1

D93 Compound element, no mapping necessary

D94 A unique instance: See 2.4.1.1

D98 Compound element, no mapping necessary

D99 Compound element, no mapping necessary

**Old
Value**

of V3.1 of this crosswalk. Some rows have been eliminated or combined in
iswalk.

MD_Metadata.dataQualityInfo.DQ_DataQuality.lineage.LI_Lineage.source.LI
_Source.sourceExtent

MD_Metadata.dataQualityInfo.DQ_DataQuality.lineage.LI_Lineage.source.LI
_Source.sourceExtent

MD_Metadata.identificationInfo.MD_Identification.spatialRepresentationType
as textTable (003)

MD_Metadata.referenceSystemInfo.MD_ReferenceSystem.referenceSystem
Identifier.RS_Identifier.authority and code
MD_Metadata.spatialRepresentationInfo.MD_GridSpatialRepresentation.axis
DimensionProperties.MD_Dimension.resolution

MD_Metadata.referenceSystemInfo.MD_CRS.projection.RS_Identifier.author
ity and name

NO MATCH

MD_Metadata.referenceSystemInfo
MD_Metadata.referenceSystemInfo.MD_ReferenceSystem.referenceSystem
Identifier.RS_Identifier.authority and code
NO MATCH

MD_Metadata.referenceSystemInfo.MD_CRS.projectionParameters.MD_Pro
jectionParameters.
NO MATCH

MD_Metadata.referenceSystemInfo.MD_CRS.projectionParameters.MD_Pro
jectionParameters.
MD_Metadata.referenceSystemInfo.MD_CRS.projectionParameters.MD_Pro
jectionParameters.
NO MATCH

MD_Metadata.referenceSystemInfo.MD_CRS.projectionParameters.MD_Pro
jectionParameters.
NO MATCH

NO MATCH

NO MATCH

NO MATCH

NO MATCH

MD_Metadata.identificationInfo.MD_DataIdentification.spatialResolution.MD_Resolution.distance

NO MATCH

NO MATCH

MD_Metadata.referenceSystemInfo.MD_CRS.datum.RS_Identifier.authority and code
MD_Metadata.referenceSystemInfo.MD_CRS.ellipsoid.RS_Identifier.authority and code
MD_Metadata.referenceSystemInfo.MD_ReferenceSystem.referenceSystemIdentifier.RS_Identifier.authority and code

MD_Metadata.identificationInfo.MD_DataIdentification.extent.EX_Extent.verticalElement.EX_VerticalElement.verticalDatum

MD_Metadata.identificationInfo.MD_DataIdentification.spatialResolution

NO MATCH

MD_Metadata.identificationInfo.MD_DataIdentification.extent.EX_Extent.verticalElement.EX_VerticalElement.unitsOfMeasure
MD_Metadata.identificationInfo.MD_DataIdentification.extent.EX_Extent.verticalElement.EX_VerticalExtent.unitsOfMeasure

MD_Metadata.identificationInfo.MD_DataIdentification.extent.EX_Extent.verticalElement.EX_VerticalElement.verticalDatum

MD_Metadata.identificationInfo.MD_DataIdentification.spatialResolution
NO MATCH

MD_Metadata.identificationInfo.MD_DataIdentification.extent.EX_Extent.verticalElement.EX_VerticalElement.unitsOfMeasure
MD_Metadata.identificationInfo.MD_DataIdentification.extent.EX_Extent.verticalElement.EX_VerticalExtent.unitsOfMeasure

NO MATCH

NO MATCH

NO MATCH

NO MATCH

NO MATCH

MD_Metadata.distributionInfo.MD_Distribution.transferOptions.MD_DigitalTransferOptions.onLine.CI_OnlineResource.description

NO MATCH

MD_Metadata.distributionInfo.MD_Distribution.distribution.MD_Distributor.distributorTransferOptions.MD_DigitalTransferOptions.offLine

NO MATCH

MD_Metadata.distributionInfo.MD_Distribution.transferOptions.MD_DigitalTransferOptions.onLine.CI_OnlineResource.name

MD_Metadata.distributionInfo.MD_Distribution.transferOptions.MD_DigitalTransferOptions.onLine.CI_OnlineResource.protocol

NO MATCH

NO MATCH

MD_Metadata.metadataExtensionInfo.MD_MetadataExtensionInformation.extensionOnLineResource.CI_OnlineResource.linkage

NO MATCH

CI_Citation.citedResponsibleParty.CI_ResponsibleParty.contact.CI_Contact.onlineResource.CI_OnlineResource.linkage

NO MATCH

NO MATCH

NO MATCH

NO MATCH

NO MATCH

NO MATCH

NO MATCH

NO MATCH

NO MATCH

<blank>

Compound element, no mapping necessary

<blank>

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Mapping applies to grid data

<blank>

Mapping applies to grid data

Compound element, no mapping necessary

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<blank>

Move content to other. Content is repeated from FGDC 2.1.2.1

<blank>

Move content to other. Content is repeated from FGDC 2.1.2.2

<blank>

<blank>

highly dependent on user interpretation

<blank>

<blank>

The ISO element has a domain of CharacterString and could be used to specify the child elements of this FGDC element

Rick Pearsall recommends that this section be dropped in its entirety

Deprecated

<blank>

<blank>

<blank>

ISO 19108 contains information about temporal elements
The CI_Citation.date element refers to a “date” and not a “time”. Element
could possibly be extended in a Profile.

<blank>

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<blank>

ID	FGDC element number	FGDC element name	ISO element number	ISO element name	Type of comment	Comment
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[Please see instructions for preparing and submitting comments.](#)

Proposed change

Guidelines for Presentation of Comments

FGDC --> ISO Metadata Crosswalk -- Draft 4.0

The purpose of these guidelines is to make it easier to resolve comments on the registered review of the [The attached comment template will ensure a smoother and more efficient method of correlating, sorting, and evaluating](#) Crosswalk comments) or mail: Sharon Shin, FGDC Metadata Coordinator, USGS, 12201 Sunrise Valley Drive - MS 590, Reston, VA 20192. Please provide all comments no later than **September 1, 2003**.

Excel or Word, plain text (ASCII), or HTML. If you elect to provide printed comments, please also provide your comments on a 3.5" diskette in one of the specified electronic formats. Each set of comments should include the name, organizational affiliation (if any) and complete contact information

Each comment should be separated and structured as follows:

1. Organization/Submitter ID
2. Paragraph/Subparagraph/Page number
3. Figure/Table/Line number
4. Type of comment:
 - a. General G
 - b. Technical T
 - c. Editorial E
5. Comment
6. Proposed change

followed by a numerical identifier for the comment (example USGS- 1, USGS - 2, USGS.....); if comments are being sent by an individual or individuals rather than by an organization as a whole , the name of the reviewer preceded by organizational affiliation if any. (USGS-Pearsall-1).

the subject of the comment. FGDC element names and number, and ISO element names are contained on the tab of the spreadsheet named "XWalk." (Optional) ISO element numbers are contained in "Annex B -- Data dictionary" of the document [ISO 19115:2003\(E\)](#). Please indicate if you reference element numbers from a different version of the ISO-19115 metadata standard.

Type of Comment The reviewer should classify a comment in one of the three categories.

General (G) - comments normally address larger areas of the document being reviewed. They include paragraphs or sections so confusing that pointing out a specific sentence or issue is virtually impossible.

Technical (T) - comments that affect the technical accuracy of the document.

Editorial (E) - comments identify typographical errors, misspellings, improper sentence structure and

specific as possible, and pointers to specific references should be provided whenever possible. If the comment and proposed change do not provide sufficient information for the reviewer(s) to work with, the comment may be skipped over.

document. A proposed change such as “rewrite paragraph” is not very useful to the editor. Specific changes and or guidance is needed to ensure that the question /problem is correctly addressed and adjudicated.

[pluating comments.](#)

ID	FGDC element number	FGDC element name	ISO element number	ISO element name	Type of comment	Comment
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[Please see instructions for preparing and submitting comments.](#)

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