

MEaSURES gridded sea ice products

Product format specification

ASF Satellite Facility

ABSTRACT

This product format specification defines the MEaSURES gridded sea ice products generated at the Alaska Satellite Facility. It contains the definition for the ISO compliant XML metadata.



Document Preparation

The document was prepared with contributions from
Rudi Gens

Document Change Log

Revision	Date	Page	Change Description	Reason for change
1.0 Draft	09/01/2014	all	Initial Draft	



Table of Contents

Document Preparation	2
Document Change Log.....	2
1 Document structure	4
2 Product packaging.....	5
3 ISO XML metadata.....	6
3.1 fileIdentifier	10
3.2 language.....	10
3.3 characterSet.....	10
3.4 hierarchyLevel.....	11
3.5 contact	12
3.6 dateStamp.....	17
3.7 metadataStandardName	17
3.8 metadataStandardVersion.....	17
3.9 spatialRepresentationInfo	17
3.10 identificationInfo	25
3.11 contentInfo	46
3.12 distributionInfo	52
3.13 dataQualityInfo	59
3.14 metadataMaintenance	63



1 Document structure

The document is structured as follows:

Chapter 1 introduces the structure and scope of the document.

Chapter 2 summarizes the product packaging.

Chapter 3 defines the elements of the ISO compliant XML metadata.

2 Product packaging

The naming convention for the gridded sea ice products follows as base name of this pattern:
PnpppSYYDDDDdd.TF (e.g. R1001a06337181.DP)

Component	Definition	Example
Pn	platform and number ("R1", "E1", "E2")	R1
ppp	product ID	1
S	data stream ID (a-z, A-Z)	a
YY	start year of the product	[20]06
DDD	start Julian day of the product	337
ddd	duration (in days) that the product spans	181
T	product type, according to the code described in the following table	D
F	file type ("P" for product, "M" for metadata)	P

This table summarizes the various product type and corresponding codes

Product type	Code
Lagrangian ice motion	L
Backscatter histogram	B
Ice age/thickness histogram	T
Ice deformation	D
Eulerian ice motion	E
Area/open water fraction	C

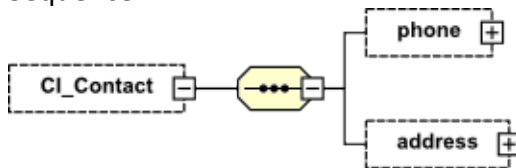
3 ISO XML metadata

The metadata is stored in an ISO metadata compliant XML format.

```
<?xml version="1.0" encoding="utf-8"?>
<gmd:DS_Series
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:gmd="http://www.isotc211.org/2005/gmd"
  xmlns:gco="http://www.isotc211.org/2005/gco"
  xmlns:xs="http://www.w3.org/2001/XMLSchema"
  xmlns:eos="http://earthdata.nasa.gov/schema/eos"
  xmlns:echo="http://www.echo.nasa.gov/ingest/schemas/operations"
  xmlns:xlink="http://www.w3.org/1999/xlink"
  xmlns:gml="http://www.opengis.net/gml/3.2"
  xmlns:gmi="http://www.isotc211.org/2005/gmi"
  xmlns:gmxml="http://www.isotc211.org/2005/gmxml">
  <gmd:composedOf>
    <gmd:DS_DataSet>
      <gmd:has>
        <gmi:MI_Metadata>
          <gmd:fileIdentifier>
            <gco:CharacterString>R1001a06337181_DP.iso.xml</gco:CharacterString>
          </gmd:fileIdentifier>
          <gmd:language>
            <gco:CharacterString>eng</gco:CharacterString>
          </gmd:language>
          <gmd:characterSet>
            <gmd:MD_CharacterSetCode
              codeList="http://www.isotc211.org/2005/resources/Codelist/gmxCodelists.xml#
              MD_CharacterSetCode" codeListValue="utf8">utf8</gmd:MD_CharacterSetCode>
            </gmd:characterSet>
            <gmd:hierarchyLevel>
              <gmd:MD_ScopeCode
                codeList="http://www.isotc211.org/2005/resources/Codelist/gmxCodelists.xml#
                MD_ScopeCode" codeListValue="dataset">dataset</gmd:MD_ScopeCode>
              </gmd:hierarchyLevel>
```

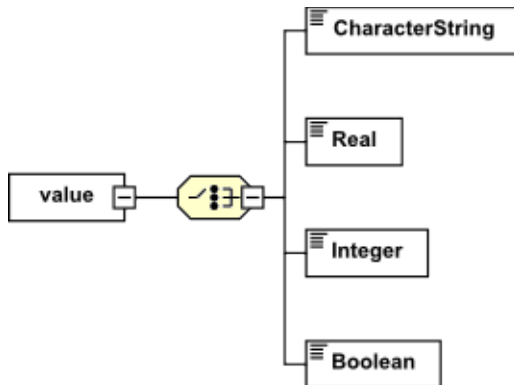
The graphical representation contains a number of compositors and components:

- Sequence



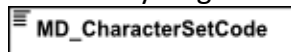
A sequence requires all child elements to be present in the given order, i.e. in this case the **phone** component needs to be in XML file before the **address** component.

- Choice



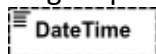
A choice allows only one of the child elements to be present, i.e. value can be a character string, floating point number, integer number or Boolean.

- Mandatory single element



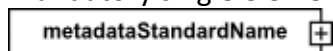
An element with solid border indicates that the element is required. The absence of a number range implies a minimum and maximum occurrence of the element of 1.

- Single optional element



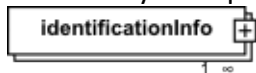
An element with dashed border indicates that the element is optional. The absence of a number range implies a minimum occurrence of 0 and a maximum occurrence of 1.

- Mandatory single element containing children



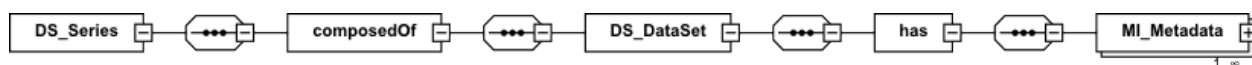
The solid border indicates a mandatory element. The plus sign means complex content, i.e. it contains at least one child element.

- Mandatory multiple element containing child elements

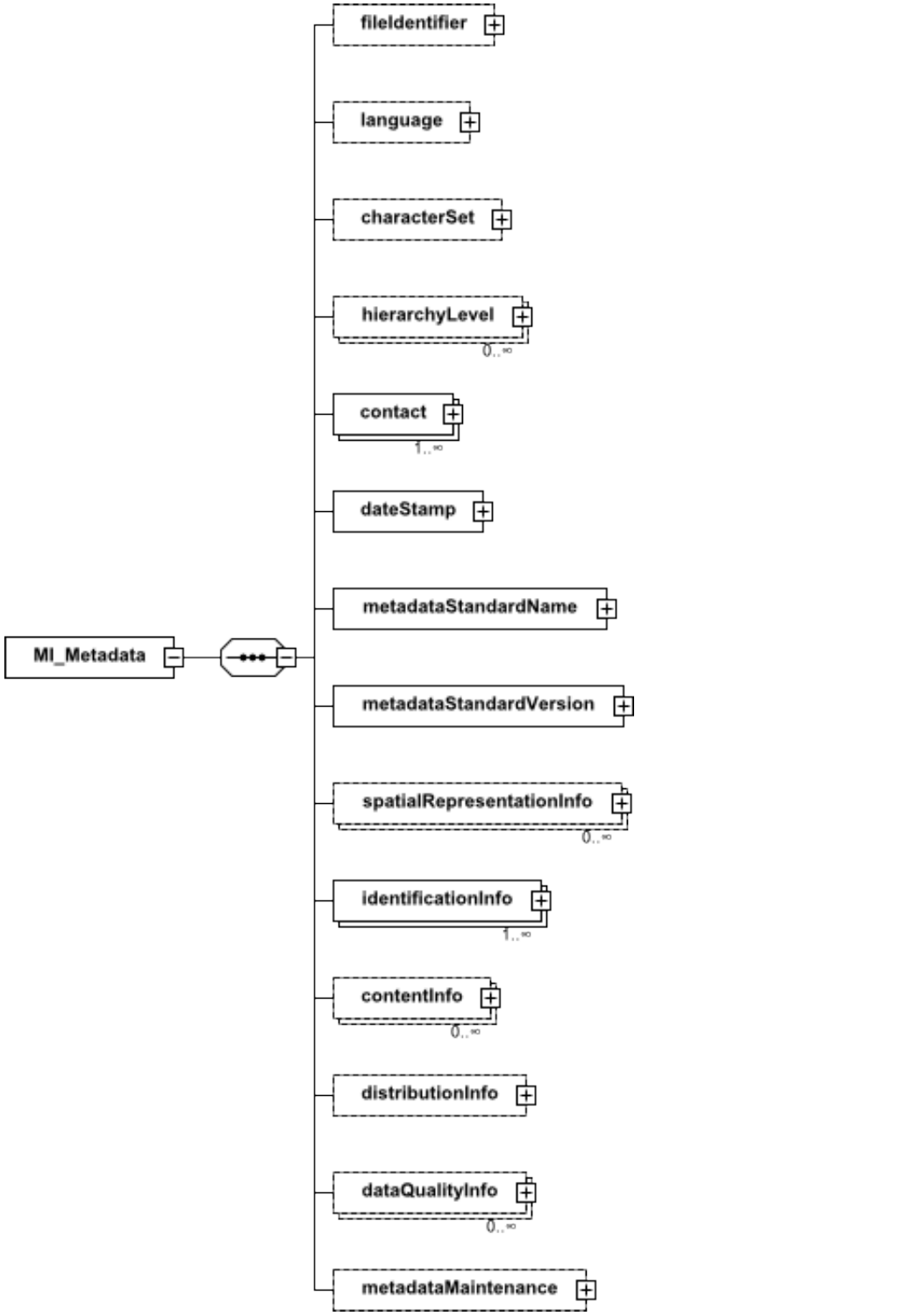


The solid border indicates a mandatory element. The plus sign means complex content, i.e. it contains at least one child element. The number range 1.. ∞ indicates a minimum occurrence of 1 and an unbounded maximum occurrence.

The structure is outlined in more detail below.

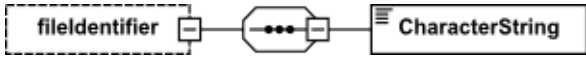


element **MI_Metadata**

diagram	
annotation	documentation contains the metadata for the sea ice product

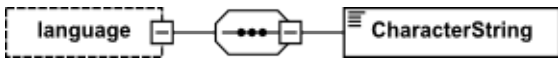
3.1 fileIdentifier

element **MI_Metadata/fileIdentifier**

diagram	
type	xs:string
annotation	documentation file name of the sea ice product XML file

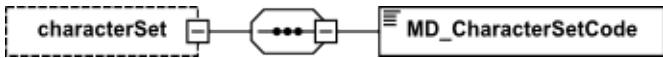
3.2 language

element **MI_Metadata/language**

diagram	
type	xs:string
annotation	documentation language of the metadata record

3.3 characterSet

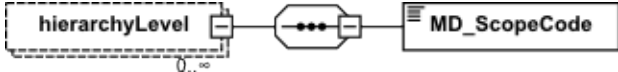
element **MI_Metadata/characterSet**

diagram																											
type	characterSetCode																										
facets	<table> <tr><td>enumeration</td><td>ucs2</td></tr> <tr><td>enumeration</td><td>ucs4</td></tr> <tr><td>enumeration</td><td>utf7</td></tr> <tr><td>enumeration</td><td>utf8</td></tr> <tr><td>enumeration</td><td>utf16</td></tr> <tr><td>enumeration</td><td>8859part1</td></tr> <tr><td>enumeration</td><td>8859part2</td></tr> <tr><td>enumeration</td><td>8859part3</td></tr> <tr><td>enumeration</td><td>8859part4</td></tr> <tr><td>enumeration</td><td>8859part5</td></tr> <tr><td>enumeration</td><td>8859part6</td></tr> <tr><td>enumeration</td><td>8859part7</td></tr> <tr><td>enumeration</td><td>8859part8</td></tr> </table>	enumeration	ucs2	enumeration	ucs4	enumeration	utf7	enumeration	utf8	enumeration	utf16	enumeration	8859part1	enumeration	8859part2	enumeration	8859part3	enumeration	8859part4	enumeration	8859part5	enumeration	8859part6	enumeration	8859part7	enumeration	8859part8
enumeration	ucs2																										
enumeration	ucs4																										
enumeration	utf7																										
enumeration	utf8																										
enumeration	utf16																										
enumeration	8859part1																										
enumeration	8859part2																										
enumeration	8859part3																										
enumeration	8859part4																										
enumeration	8859part5																										
enumeration	8859part6																										
enumeration	8859part7																										
enumeration	8859part8																										

	enumeration	8859part9		
	enumeration	8859part10		
	enumeration	8859part11		
	enumeration	8859part12		
	enumeration	8859part13		
	enumeration	8859part14		
	enumeration	8859part15		
	enumeration	8859part16		
	enumeration	jis		
	enumeration	shiftJIS		
	enumeration	eucJP		
	enumeration	usAscii		
	enumeration	ebcdic		
	enumeration	eucKR		
	enumeration	big6		
	enumeration	GB2312		
attribute	Name	Type	Use	Annotation
	codeList	xs:string	required	MD_CharacterSetCode
	codeListValue	characterSetCode	required	value from code list
annotation	documentation	name of the character coding standard used in the resource		

3.4 hierarchyLevel

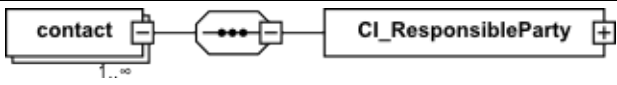
element **MI_Metadata/hierarchyLevel**

diagram			
type	scopeCode		
facets	enumeration	attribute	
	enumeration	attributeType	
	enumeration	collectionHardware	
	enumeration	collectionSession	
	enumeration	dataset	
	enumeration	series	
	enumeration	nonGeographicDataset	

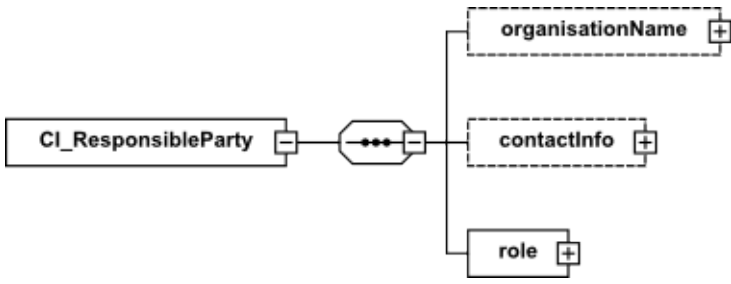
	enumeration	dimensionGroup		
	enumeration	feature		
	enumeration	featureType		
	enumeration	propertyType		
	enumeration	fieldSession		
	enumeration	software		
	enumeration	service		
	enumeration	model		
	enumeration	tile		
attribute	Name	Type	Use	Annotation
	codeList	xs:string	required	MD_ScopeCode
	codeListValue	scopeCode	required	value from code list
annotation	documentation	class of information to which the referencing entity applies		

3.5 contact

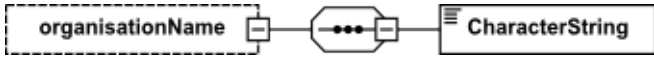
element **MI_Metadata/contact**

diagram				
annotation	documentation	contact information		

element **MI_Metadata/contact/CI_ResponsibleParty**

diagram				
annotation	documentation	responsible party details		

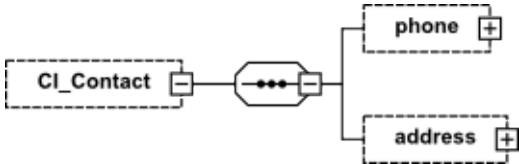
element **MI_Metadata/contact/CI_ResponsibleParty/organisationName**

diagram	
type	xs:string
annotation	documentation name of the responsible organization

element **MI_Metadata/contact/CI_ResponsibleParty/contactInfo**

diagram	
annotation	documentation contact information

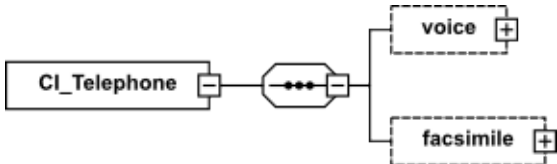
element **MI_Metadata/contact/CI_ResponsibleParty/contactInfo/CI_Contact**

diagram				
attribute	Name	Type	Use	Annotation
	id	xs:string	required	ID for ASF contact information
annotation	documentation	contact information details		

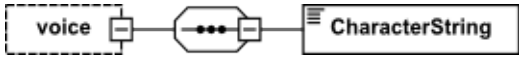
element **MI_Metadata/contact/CI_ResponsibleParty/contactInfo/CI_Contact/phone**

diagram	
annotation	documentation contact phone information

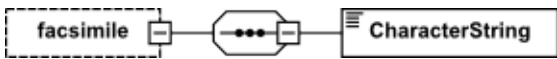
element **MI_Metadata/contact/CI_ResponsibleParty/contactInfo/CI_Contact/phone/CI_Telephone**

diagram				
annotation	documentation	contact telephone information details		

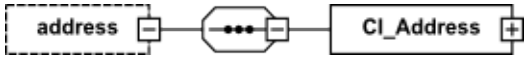
element **MI_Metadata/contact/CI_ResponsibleParty/contactInfo/CI_Contact/phone/CI_Telephone/voice**

diagram	
type	xs:string
annotation	documentation contact phone number

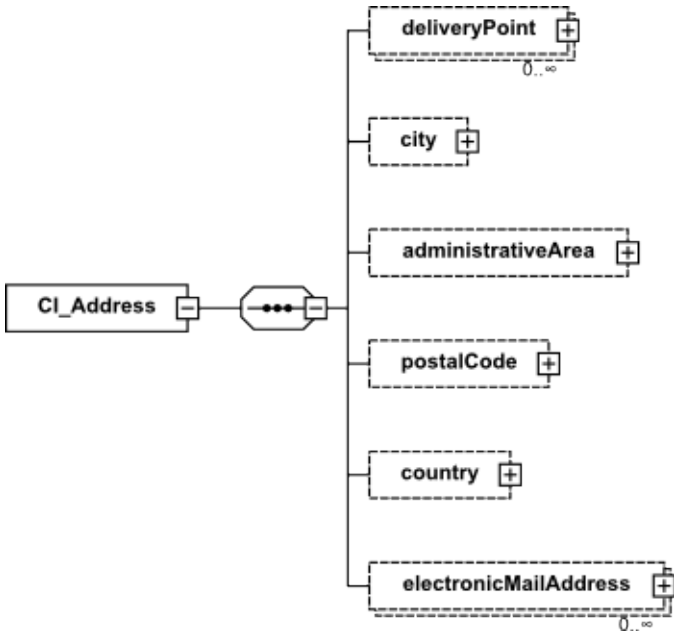
element **MI_Metadata/contact/CI_ResponsibleParty/contactInfo/CI_Contact/phone/CI_Telephone/facsimile**

diagram	
type	xs:string
annotation	documentation contact fax number

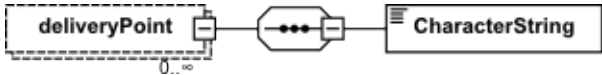
element **MI_Metadata/contact/CI_ResponsibleParty/contactInfo/CI_Contact/address**

diagram	
annotation	documentation contract address

element **MI_Metadata/contact/CI_ResponsibleParty/contactInfo/CI_Contact/address/CI_Address**

diagram	
annotation	documentation contact address details

element **MI_Metadata/contact/CI_ResponsibleParty/contactInfo/CI_Contact/address/CI_Address/deliveryPoint**

diagram	
type	xs:string
annotation	documentation contact address: street

element **MI_Metadata/contact/CI_ResponsibleParty/contactInfo/CI_Contact/address/CI_Address/city**

diagram	
type	xs:string
annotation	documentation contact address: city

element **MI_Metadata/contact/CI_ResponsibleParty/contactInfo/CI_Contact/address/CI_Address/administrativeArea**

diagram	
type	xs:string
annotation	documentation contact address: administrative area

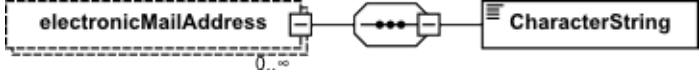
element **MI_Metadata/contact/CI_ResponsibleParty/contactInfo/CI_Contact/address/CI_Address/postalCode**

diagram	
type	xs:string
annotation	documentation contact address: postal code

element **MI_Metadata/contact/CI_ResponsibleParty/contactInfo/CI_Contact/address/CI_Address/country**

diagram	
type	xs:string
annotation	documentation contact address: country

element **MI_Metadata/contact/CI_ResponsibleParty/contactInfo/CI_Contact/address/CI_Address/electronicMailAddress**

diagram	
type	xs:string
annotation	documentation contact address: email address

element **MI_Metadata/contact/CI_ResponsibleParty/role**

diagram				
type	roleCode			
facets	enumeration	resourceProvider		
	enumeration	custodian		
	enumeration	owner		
	enumeration	sponsor		
	enumeration	user		
	enumeration	distributor		
	enumeration	originator		
	enumeration	pointOfContact		
	enumeration	principalInvestigator		
	enumeration	processor		
	enumeration	publisher		
	enumeration	author		
	enumeration	collaborator		
attribute	Name	Type	Use	Annotation
	codeList	xs:string	required	CI_RoleCode
	codeListValue	roleCode	required	value from code list
annotation	documentation	function performed by the responsible party		

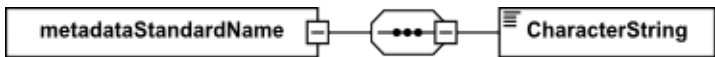
3.6 dateStamp

element **MI_Metadata/dateStamp**

diagram	
type	xs:date
annotation	documentation date that the metadata was last updated

3.7 metadataStandardName

element **MI_Metadata/metadataStandardName**

diagram	
type	xs:string
annotation	documentation name of the metadata standard

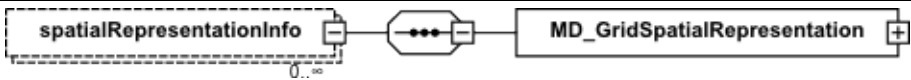
3.8 metadataStandardVersion

element **MI_Metadata/metadataStandardVersion**

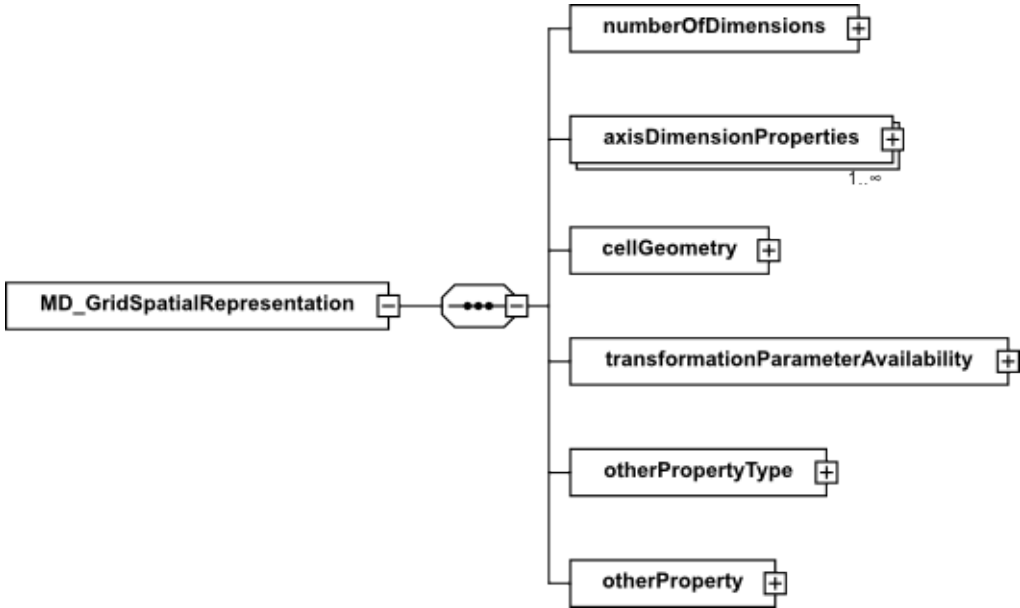
diagram	
type	xs:string
annotation	documentation version of the metadata standard

3.9 spatialRepresentationInfo

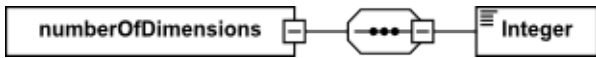
element **MI_Metadata/spatialRepresentationInfo**

diagram	
annotation	documentation spatial representation information

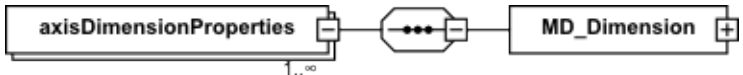
element **MI_Metadata/spatialRepresentationInfo/MD_GridSpatialRepresentation**

diagram	 The diagram shows the structure of the MD_GridSpatialRepresentation element. It is a container element (rectangle with a small square in the top-left corner) that contains a sequence of child elements. The children are: numberOfDimensions (rectangle with a small square in the top-left corner), axisDimensionProperties (rectangle with a small square in the top-left corner and a multiplicity of 1..∞), cellGeometry (rectangle with a small square in the top-left corner), transformationParameterAvailability (rectangle with a small square in the top-left corner), otherPropertyType (rectangle with a small square in the top-left corner), and otherProperty (rectangle with a small square in the top-left corner). The children are connected by a sequence connector (octagon with three dots).
annotation	documentation grid spatial representation details

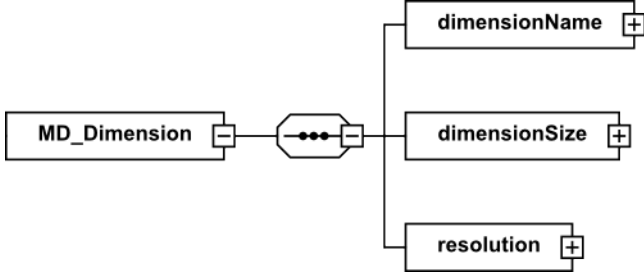
element **MI_Metadata/spatialRepresentationInfo/MD_GridSpatialRepresentation/numberOfDimensions**

diagram	 The diagram shows the structure of the numberOfDimensions element. It is a container element (rectangle with a small square in the top-left corner) that contains a sequence connector (octagon with three dots) followed by an Integer element (rectangle with a small square in the top-left corner).
type	xs:int
annotation	documentation number of dimensions

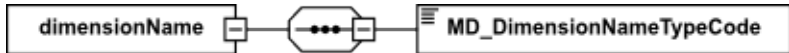
element **MI_Metadata/spatialRepresentationInfo/MD_GridSpatialRepresentation/axisDimensionProperties**

diagram	 The diagram shows the structure of the axisDimensionProperties element. It is a container element (rectangle with a small square in the top-left corner) that contains a sequence connector (octagon with three dots) followed by an MD_Dimension element (rectangle with a small square in the top-left corner and a multiplicity of 1..∞).
annotation	documentation axis dimension properties

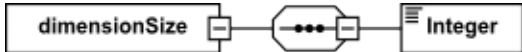
element **MI_Metadata/spatialRepresentationInfo/MD_GridSpatialRepresentation/axisDimensionProperties/MD_Dimension**

diagram	 The diagram shows a box labeled 'MD_Dimension' connected to a container box. Inside the container box are three sub-elements: 'dimensionName', 'dimensionSize', and 'resolution'. Each sub-element has a '+' sign in its top right corner, indicating it is optional.
annotation	documentation dimension details

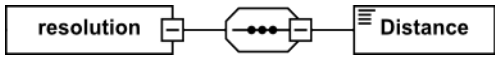
element **MI_Metadata/spatialRepresentationInfo/MD_GridSpatialRepresentation/axisDimensionProperties/MD_Dimension/dimensionName**

diagram				
type	dimensionNameTypeCode			
facets	enumeration	row		
	enumeration	column		
	enumeration	vertical		
	enumeration	track		
	enumeration	crossTrack		
	enumeration	line		
	enumeration	sample		
	enumeration	time		
attribute	Name	Type	Use	Annotation
	codeList	xs:string	required	MD_DimensionNameTypeCode
	codeListValue	dimensionName TypeCode	required	value of code list
annotation	documentation	name of the dimension		

element **MI_Metadata/spatialRepresentationInfo/MD_GridSpatialRepresentation/axisProperties/MD_Dimension/dimensionSize**

diagram	 The diagram shows a box labeled 'dimensionSize' connected to a container box, which is then connected to a box labeled 'Integer'.
type	xs:int
annotation	documentation size of the dimension

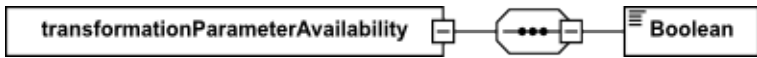
element **MI_Metadata/spatialRepresentationInfo/MD_GridSpatialRepresentation/axisProperties/MD_Dimension/resolution**

diagram	
type	xs:float
annotation	documentation resolution

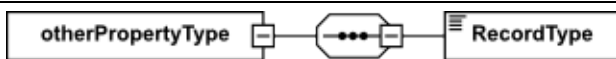
element **MI_Metadata/spatialRepresentationInfo/MD_GridSpatialRepresentation/cellGeometry**

diagram				
type	cellGeometryCode			
facets	enumeration	point		
	enumeration	area		
attribute	Name	Type	Use	Annotation
	codeList	xs:string	required	MD_CellGeometryCode
	codeListValue	cellGeometryCode	required	value of code list
annotation	documentation	cell geometry		

element **MI_Metadata/spatialRepresentationInfo/MD_GridSpatialRepresentation/transformationParameterAvailability**

diagram	
type	xs:Boolean
annotation	documentation transformation parameter availability

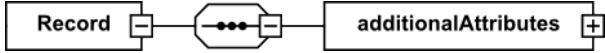
element **MI_Metadata/spatialRepresentationInfo/MD_GridSpatialRepresentation/otherPropertyType**

diagram				
type	xs:string			
attribute	Name	Type	Use	Annotation
	href	xlink:href	required	EOS Additional Attributes
annotation	documentation	other property type – EOS additional attributes		

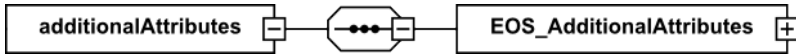
element **MI_Metadata/spatialRepresentationInfo/MD_GridSpatialRepresentation/
otherProperty**

diagram	
annotation	documentation other property – additional attributes

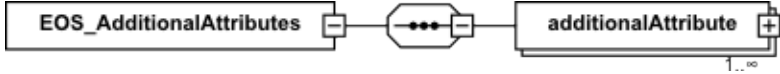
element **MI_Metadata/spatialRepresentationInfo/MD_GridSpatialRepresentation/
otherProperty/Record**

diagram	
annotation	documentation other property record

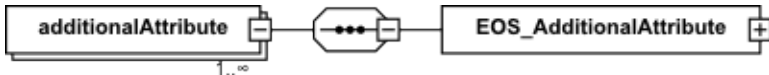
element **MI_Metadata/spatialRepresentationInfo/MD_GridSpatialRepresentation/
otherProperty/Record/additionalAttributes**

diagram	
annotation	documentation additional attributes

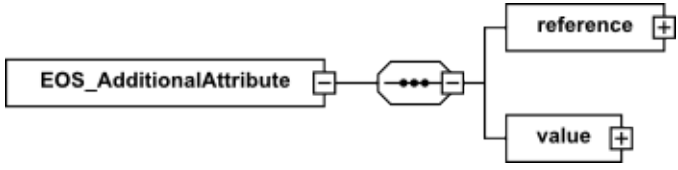
element **MI_Metadata/spatialRepresentationInfo/MD_GridSpatialRepresentation/
otherProperty/Record/additionalAttributes/EOS_AdditionalAttributes**

diagram	
annotation	documentation EOS additional attributes

element **MI_Metadata/spatialRepresentationInfo/MD_GridSpatialRepresentation/
otherProperty/Record/additionalAttributes/EOS_AdditionalAttributes/
additionalAttribute**

diagram	
annotation	documentation additionalAttribute

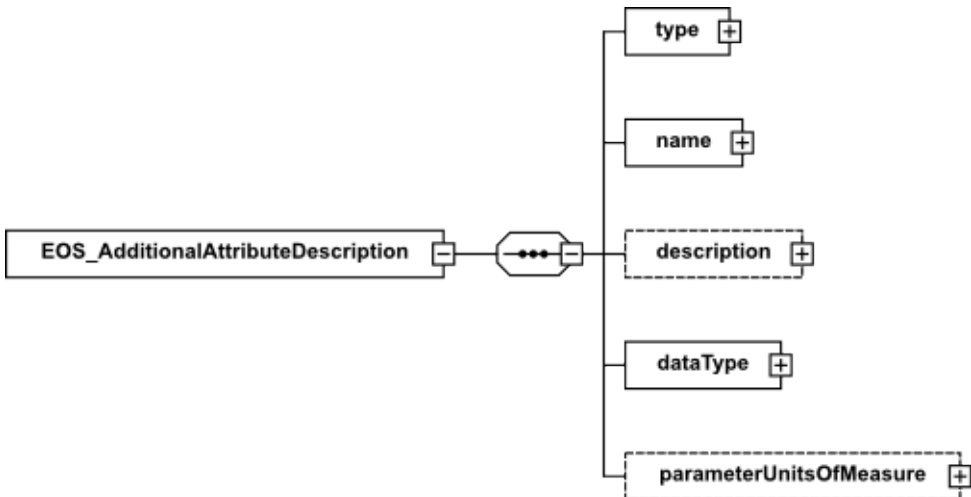
element **MI_Metadata/spatialRepresentationInfo/MD_GridSpatialRepresentation/
otherProperty/Record/additionalAttributes/EOS_AdditionalAttributes/
additionalAttribute/EOS_AdditionalAttribute**

diagram	 <pre> graph LR EOS_AdditionalAttribute[EOS_AdditionalAttribute] --- Ellipsis[...] Ellipsis --- reference[reference+] Ellipsis --- value[value+] </pre>
annotation	documentation EOS_AdditionalAttribute

element **MI_Metadata/spatialRepresentationInfo/MD_GridSpatialRepresentation/
otherProperty/Record/additionalAttributes/EOS_AdditionalAttributes/
additionalAttribute/EOS_AdditionalAttribute/reference**

diagram	 <pre> graph LR reference[reference] --- Ellipsis[...] Ellipsis --- EOS_AdditionalAttributeDescription[EOS_AdditionalAttributeDescription+] </pre>
annotation	documentation additional attribute reference

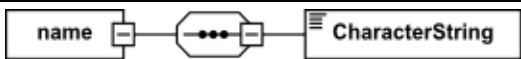
element **MI_Metadata/spatialRepresentationInfo/MD_GridSpatialRepresentation/
otherProperty/Record/additionalAttributes/EOS_AdditionalAttributes/
additionalAttribute/EOS_AdditionalAttribute/reference/
EOS_AdditionalAttributeDescription**

diagram	 <pre> graph LR EOS_AdditionalAttributeDescription[EOS_AdditionalAttributeDescription] --- Ellipsis[...] Ellipsis --- type[type+] Ellipsis --- name[name+] Ellipsis --- description[description+] Ellipsis --- dataType[dataType+] Ellipsis --- parameterUnitsOfMeasure[parameterUnitsOfMeasure+] </pre>
annotation	documentation cell geometry

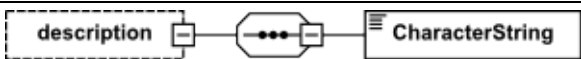
element **MI_Metadata/spatialRepresentationInfo/MD_GridSpatialRepresentation/otherProperty/Record/additionalAttributes/EOS_AdditionalAttributes/additionalAttribute/EOS_AdditionalAttribute/reference/EOS_AdditionalAttributeDescription/type**

diagram				
type	additionalAttributeTypeCode			
facets	enumeration	spatialInformation		
	enumeration	acquisitionInformation		
attribute	Name	Type	Use	Annotation
	codeList	xs:string	required	EOS_AdditionalAttributeTypeCode
	codeListValue	EOS_AdditionalAttributeTypeCode	required	value of code list
annotation	documentation	additional attribute: type		

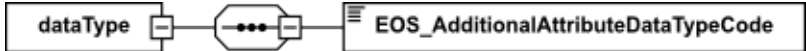
element **MI_Metadata/spatialRepresentationInfo/MD_GridSpatialRepresentation/otherProperty/Record/additionalAttributes/EOS_AdditionalAttributes/additionalAttribute/EOS_AdditionalAttribute/reference/EOS_AdditionalAttributeDescription/name**

diagram				
type	xs:string			
annotation	documentation	additional attribute: name		

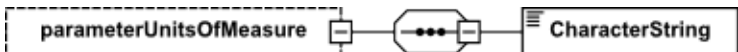
element **MI_Metadata/spatialRepresentationInfo/MD_GridSpatialRepresentation/otherProperty/Record/additionalAttributes/EOS_AdditionalAttributes/additionalAttribute/EOS_AdditionalAttribute/reference/EOS_AdditionalAttributeDescription/description**

diagram				
type	xs:string			
annotation	documentation	additional attribute: description		

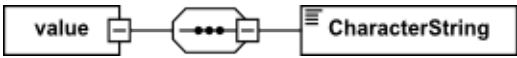
element **MI_Metadata/spatialRepresentationInfo/MD_GridSpatialRepresentation/
otherProperty/Record/additionalAttributes/EOS_AdditionalAttributes/
additionalAttribute/EOS_AdditionalAttribute/reference/
EOS_AdditionalAttributeDescription/dataType**

diagram				
type	additionalAttributeDataTypeCode			
facets	enumeration	STRING		
	enumeration	FLOAT		
	enumeration	INT		
	enumeration	BOOLEAN		
	enumeration	DATE		
	enumeration	TIME		
	enumeration	DATETIME		
	enumeration	DATE_STRING		
	enumeration	TIME_STRING		
	enumeration	DATETIME_STRING		
attribute	Name	Type	Use	Annotation
	codeList	xs:string	required	EOS_AdditionalAttribute
		additionalAttribute		DataTypeCode
	codeListValue	DataTypeCode	required	value of code list
annotation	documentation	additional attribute: data type		

element **MI_Metadata/spatialRepresentationInfo/MD_GridSpatialRepresentation/
otherProperty/Record/additionalAttributes/EOS_AdditionalAttributes/
additionalAttribute/EOS_AdditionalAttribute/reference/
EOS_AdditionalAttributeDescription/parameterUnitsOfMeasure**

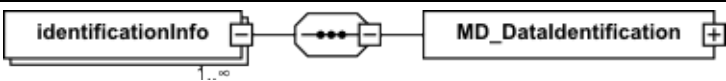
diagram				
type	xs:string			
annotation	documentation	additional attribute: parameter units of measure		

element **MI_Metadata/spatialRepresentationInfo/MD_GridSpatialRepresentation/
otherProperty/Record/additionalAttributes/EOS_AdditionalAttributes/
additionalAttribute/EOS_AdditionalAttribute/value**

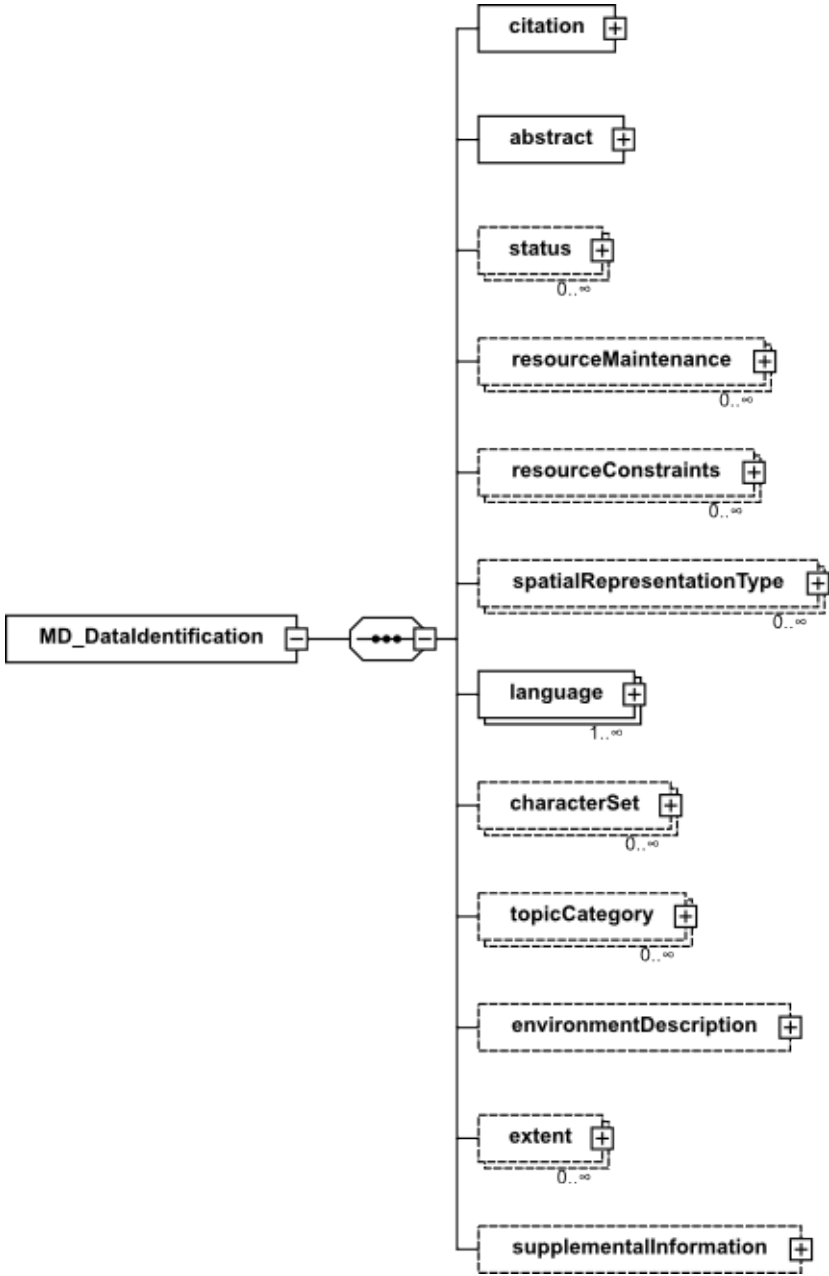
diagram	
type	xs:string, xs:float, xs:int or xs:Boolean
annotation	documentation additional attribute: value

3.10 identificationInfo

element **MI_Metadata/identificationInfo**

diagram	
annotation	documentation dataset identification information

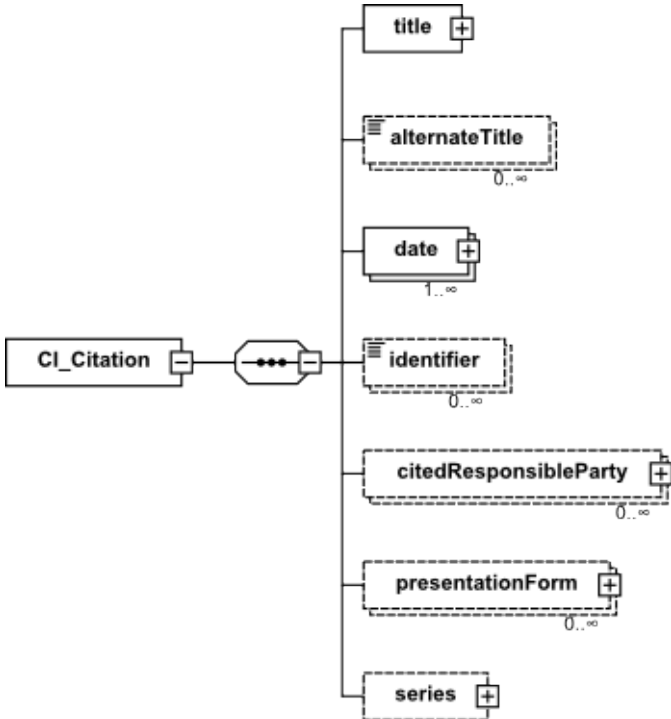
element **MI_Metadata/identificationInfo/MD_DataIdentification**

diagram		
annotation	documentation	data identification details

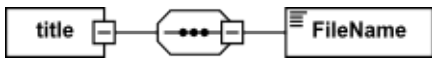
element **MI_Metadata/identificationInfo/MD_DataIdentification/citation**

diagram		
annotation	documentation	data citation

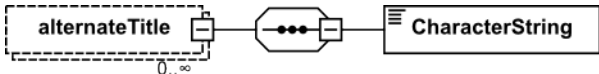
element **MI_Metadata/identificationInfo/MD_DataIdentification/citation/CI_Citation**

diagram	 The diagram shows the structure of the CI_Citation element. It is a container element (rectangle with a small square on the left) that contains several child elements. The children are: title (rectangle with a small square on the left), alternateTitle (dashed rectangle with a small square on the left), date (rectangle with a small square on the left), identifier (dashed rectangle with a small square on the left), citedResponsibleParty (dashed rectangle with a small square on the left), presentationForm (dashed rectangle with a small square on the left), and series (rectangle with a small square on the left). The CI_Citation element is connected to the identifier element via a line with three dots in the middle, indicating a one-to-many relationship. The cardinalities are: title (1..1), alternateTitle (0..1), date (1..1), identifier (0..1), citedResponsibleParty (0..1), presentationForm (0..1), and series (1..1).
annotation	documentation data citation details

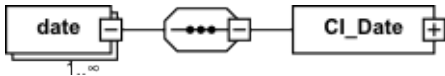
element **MI_Metadata/identificationInfo/MD_DataIdentification/citation/CI_Citation/title**

diagram	 The diagram shows the structure of the CI_Citation/title element. It is a container element (rectangle with a small square on the left) that contains a child element, FileName (rectangle with a small square on the left). The cardinality is 1..1.
type	xs:string
annotation	documentation data citation: title

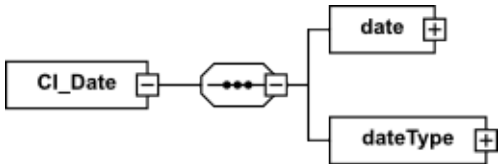
element **MI_Metadata/identificationInfo/MD_DataIdentification/citation/CI_Citation/alternateTitle**

diagram	 The diagram shows the structure of the CI_Citation/alternateTitle element. It is a container element (rectangle with a small square on the left) that contains a child element, CharacterString (rectangle with a small square on the left). The cardinality is 0..1.
type	xs:string
annotation	documentation data citation: alternateTitle

element **MI_Metadata/identificationInfo/MD_DataIdentification/citation/CI_Citation/date**

diagram	 The diagram shows the structure of the CI_Citation/date element. It is a container element (rectangle with a small square on the left) that contains a child element, CI_Date (rectangle with a small square on the left). The cardinality is 1..1.
annotation	documentation data citation: date

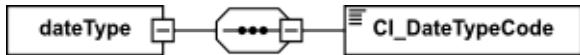
element **MI_Metadata/identificationInfo/MD_DataIdentification/citation/CI_Citation/date/CI_Date**

diagram	
annotation	documentation data citation: date details

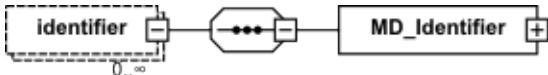
element **MI_Metadata/identificationInfo/MD_DataIdentification/citation/CI_Citation/date/CI_Date/date**

diagram	
type	xs:date
annotation	documentation date time stamp – e.g. 2014-01-29T23:47:03.000000Z

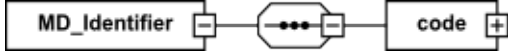
element **MI_Metadata/identificationInfo/MD_DataIdentification/citation/CI_Citation/date/CI_Date/dateType**

diagram				
type	dateTypeCode			
facets	enumeration	creation		
	enumeration	publication		
	enumeration	revision		
attribute	Name	Type	Use	Annotation
	codeList	xs:string	required	CI_DateTypeCode
	codeListValue	dataTypeCode	required	value of code list
annotation	documentation	type of date stamp		

element **MI_Metadata/identificationInfo/MD_DataIdentification/citation/CI_Citation/identifier**

diagram	
annotation	documentation data set identifier

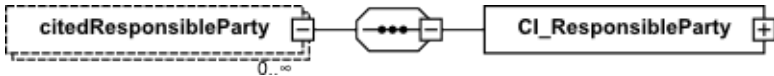
element **MI_Metadata/identificationInfo/MD_DataIdentification/citation/CI_Citation/identifier/MD_Identifier**

diagram	
annotation	documentation data set identifier: details

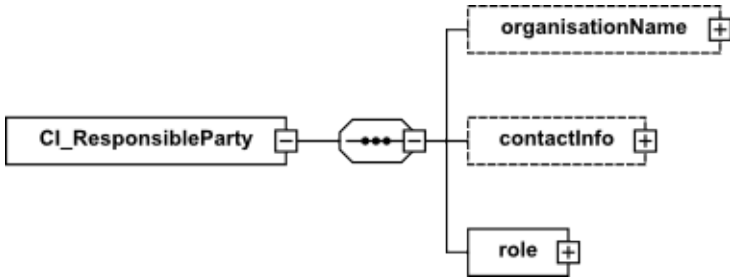
element **MI_Metadata/identificationInfo/MD_DataIdentification/citation/CI_Citation/identifier/MD_Identifier/code**

diagram				
attribute	Name	Type	Use	Annotation
	href	xlink	required	URL
	title	xlink	required	DOI
	actuate	xlink	required	on request
annotation	documentation data identification code: DOI			

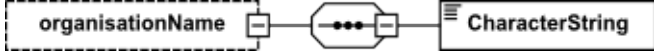
element **MI_Metadata/identificationInfo/MD_DataIdentification/citation/CI_Citation/citedResponsibleParty**

diagram	
annotation	documentation data citation: cited responsible party

element **MI_Metadata/identificationInfo/MD_DataIdentification/citation/CI_Citation/citedResponsibleParty/CI_ResponsibleParty**

diagram	
annotation	documentation data citation: cited responsible party details

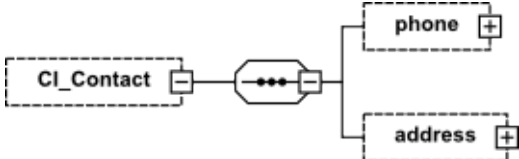
element **MI_Metadata/identificationInfo/MD_DataIdentification/citation/CI_Citation/
citedResponsibleParty/CI_ResponsibleParty/organisationName**

diagram	
type	xs:string
annotation	documentation name of the responsible organization

element **MI_Metadata/identificationInfo/MD_DataIdentification/citation/CI_Citation/
citedResponsibleParty/CI_ResponsibleParty/contactInfo**

diagram	
annotation	documentation contact information

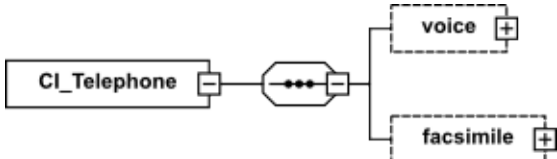
element **MI_Metadata/identificationInfo/MD_DataIdentification/citation/CI_Citation/
citedResponsibleParty/CI_ResponsibleParty/contactInfo/CI_Contact**

diagram	
annotation	documentation contact information details

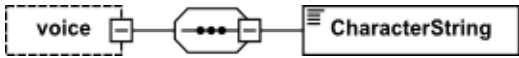
element **MI_Metadata/identificationInfo/MD_DataIdentification/citation/CI_Citation/
citedResponsibleParty/CI_ResponsibleParty/contactInfo/CI_Contact/phone**

diagram	
annotation	documentation contact phone information

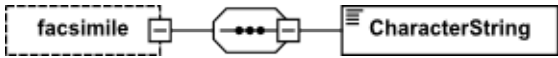
element **MI_Metadata/identificationInfo/MD_DataIdentification/citation/CI_Citation/
citedResponsibleParty/CI_ResponsibleParty/contactInfo/CI_Contact/phone/
CI_Telephone**

diagram	
annotation	documentation contact telephone information details

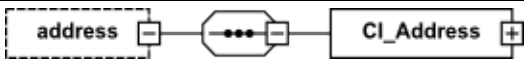
element **MI_Metadata/identificationInfo/MD_DataIdentification/citation/CI_Citation/
citedResponsibleParty/CI_ResponsibleParty/contactInfo/CI_Contact/phone/
CI_Telephone/voice**

diagram	
type	xs:string
annotation	documentation contact phone number

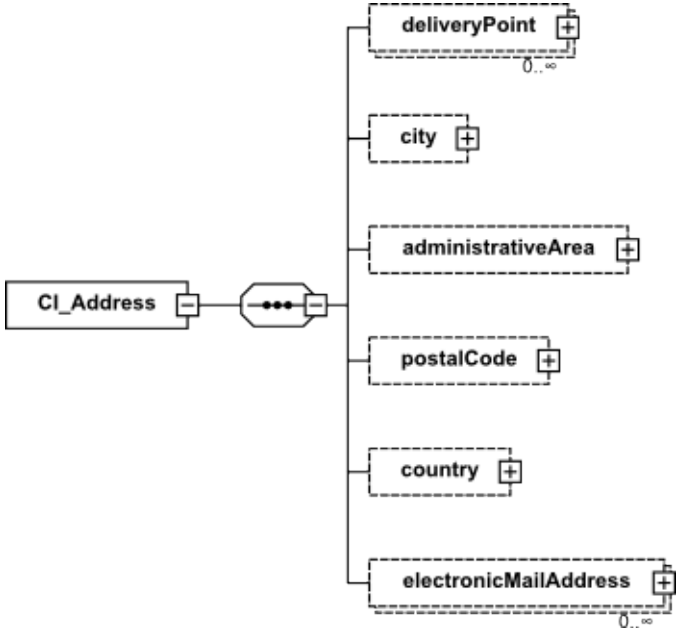
element **MI_Metadata/identificationInfo/MD_DataIdentification/citation/CI_Citation/
citedResponsibleParty/CI_ResponsibleParty/contactInfo/CI_Contact/phone/
CI_Telephone/facsimile**

diagram	
type	xs:string
annotation	documentation contact fax number

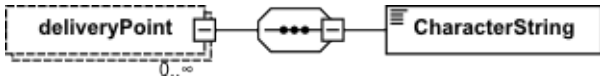
element **MI_Metadata/identificationInfo/MD_DataIdentification/citation/CI_Citation/
citedResponsibleParty/CI_ResponsibleParty/contactInfo/CI_Contact/address**

diagram	
annotation	documentation contact address information

element **MI_Metadata/identificationInfo/MD_DataIdentification/citation/CI_Citation/
citedResponsibleParty/CI_ResponsibleParty/contactInfo/CI_Contact/address/
CI_Address**

diagram	 The diagram shows the structure of the CI_Address element. It is a container element (rectangle with a small square in the top-left corner) that contains a sequence of six optional elements (dashed rectangles with a '+' in the top-right corner). The elements are: deliveryPoint (with a multiplicity of 0..∞), city, administrativeArea, postalCode, country, and electronicMailAddress (with a multiplicity of 0..∞). The elements are connected by a sequence connector (a circle with three dots).
annotation	documentation contact address information details

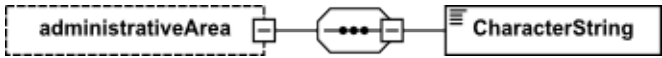
element **MI_Metadata/identificationInfo/MD_DataIdentification/citation/CI_Citation/
citedResponsibleParty/CI_ResponsibleParty/contactInfo/CI_Contact/address/
CI_Address/deliveryPoint**

diagram	 The diagram shows the structure of the deliveryPoint element. It is a container element (rectangle with a small square in the top-left corner) that contains a sequence connector (a circle with three dots) followed by a CharacterString element (rectangle with a small square in the top-left corner). The multiplicity of the deliveryPoint element is 0..∞.
type	xs:string
annotation	documentation contact address: street

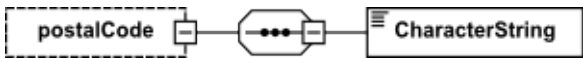
element **MI_Metadata/identificationInfo/MD_DataIdentification/citation/CI_Citation/
citedResponsibleParty/CI_ResponsibleParty/contactInfo/CI_Contact/address/
CI_Address/city**

diagram	 The diagram shows the structure of the city element. It is a container element (rectangle with a small square in the top-left corner) that contains a sequence connector (a circle with three dots) followed by a CharacterString element (rectangle with a small square in the top-left corner).
type	xs:string
annotation	documentation contact address: city

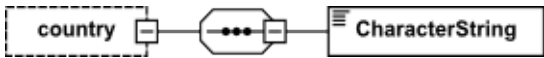
element **MI_Metadata/identificationInfo/MD_DataIdentification/citation/CI_Citation/
citedResponsibleParty/CI_ResponsibleParty/contactInfo/CI_Contact/address/
CI_Address/administrativeArea**

diagram	
type	xs:string
annotation	documentation contact address: administrative area

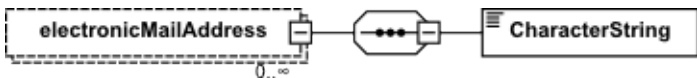
element **MI_Metadata/identificationInfo/MD_DataIdentification/citation/CI_Citation/
citedResponsibleParty/CI_ResponsibleParty/contactInfo/CI_Contact/address/
CI_Address/postalCode**

diagram	
type	xs:string
annotation	documentation contact address: postal code

element **MI_Metadata/identificationInfo/MD_DataIdentification/citation/CI_Citation/
citedResponsibleParty/CI_ResponsibleParty/contactInfo/CI_Contact/address/
CI_Address/country**

diagram	
type	xs:string
annotation	documentation contact address: country

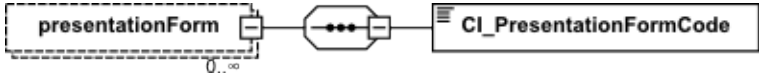
element **MI_Metadata/identificationInfo/MD_DataIdentification/citation/CI_Citation/
citedResponsibleParty/CI_ResponsibleParty/contactInfo/CI_Contact/address/
CI_Address/electronicMailAddress**

diagram	
type	xs:string
annotation	documentation contact address: email address

element **MI_Metadata/identificationInfo/MD_DataIdentification/citation/CI_Citation/
citedResponsibleParty/CI_ResponsibleParty/role**

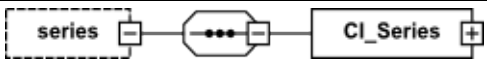
diagram				
type	roleCode			
facets	enumeration	resourceProvider		
	enumeration	custodian		
	enumeration	owner		
	enumeration	sponsor		
	enumeration	user		
	enumeration	distributor		
	enumeration	originator		
	enumeration	pointOfContact		
	enumeration	principalInvestigator		
	enumeration	processor		
	enumeration	publisher		
	enumeration	author		
	enumeration	collaborator		
attribute	Name	Type	Use	Annotation
	codeList	xs:string	required	CI_RoleCode
	codeListValue	roleCode	required	value from code list
annotation	documentation	function performed by the responsible party		

element **MI_Metadata/identificationInfo/MD_DataIdentification/citation/CI_Citation/
presentationForm**

diagram				
type	presentationFormCode			
facets	enumeration	documentDigital		
	enumeration	documentHardcopy		
	enumeration	imageDigital		
	enumeration	imageHardcopy		
	enumeration	mapDigital		
	enumeration	mapHardcopy		
	enumeration	modelDigital		

	enumeration	modelHardcopy		
	enumeration	profileDigital		
	enumeration	profileHardcopy		
	enumeration	tableDigital		
	enumeration	tableHardcopy		
	enumeration	videoDigital		
	enumeration	videoHardcopy		
attribute	Name	Type	Use	Annotation
	codeList	xs:string	require	CI_PresentationFormCode
	codeListValue	presentationFormCode	require	value of code list
annotation	documentation	presentation form		

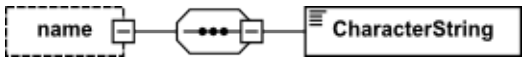
element **MI_Metadata/identificationInfo/MD_DataIdentification/citation/CI_Citation/series**

diagram	
annotation	documentation series the dataset belongs to

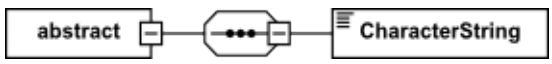
element **MI_Metadata/identificationInfo/MD_DataIdentification/citation/CI_Citation/series/CI_Series**

diagram	
annotation	documentation series details

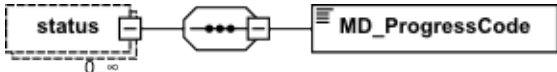
element **MI_Metadata/identificationInfo/MD_DataIdentification/citation/CI_Citation/series/CI_Series/name**

diagram	
type	xs:string
annotation	documentation name of the data series

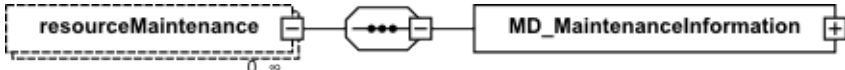
element **MI_Metadata/identificationInfo/MD_DataIdentification/abstract**

diagram	
type	xs:string
annotation	documentation abstract describing the data

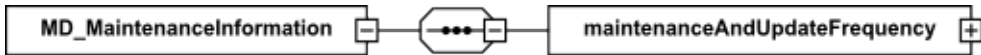
element **MI_Metadata/identificationInfo/MD_DataIdentification/status**

diagram				
type	progressCode			
facets	enumeration completed enumeration historicalArchive enumeration obsolete enumeration onGoing enumeration planned enumeration required enumeration underDevelopment			
attribute	Name	Type	Use	Annotation
	codeList	xs:string	required	MD_ProgressCode
	codeListValue	progressCode	required	value of code list
annotation	documentation	status of the dataset or progress of a review		

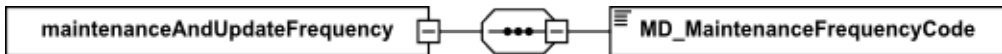
element **MI_Metadata/identificationInfo/MD_DataIdentification/resourceMaintenance**

diagram				
annotation	documentation	resource maintenance information		

element **MI_Metadata/identificationInfo/MD_DataIdentification/resourceMaintenance/MD_MaintenanceInformation**

diagram				
annotation	documentation	metadata maintenance details		

element **MI_Metadata/identificationInfo/MD_DataIdentification/resourceMaintenance/MD_MaintenanceInformation/maintenanceAndUpdateFrequency**

diagram				
type	maintenanceFrequencyCode			
facets	enumeration continual enumeration daily enumeration weekly			



	enumeration	fortnightly		
	enumeration	monthly		
	enumeration	quarterly		
	enumeration	biannually		
	enumeration	annually		
	enumeration	asNeeded		
	enumeration	irregular		
	enumeration	notPlanned		
	enumeration	unknown		
attribute	Name	Type	Use	Annotation
	codeList	xs:string	required	MD_MaintenanceFrequencyCode
	codeListValue	maintenance FrequencyCode	required	value of code list
annotation	documentation	frequency with which modifications and deletions are made to the data after it is first produced		

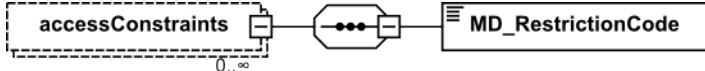
element **MI_Metadata/identificationInfo/MD_DataIdentification/resourceConstraints**

diagram			
annotation	documentation	resource constraints	

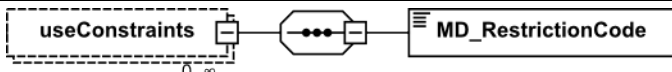
element **MI_Metadata/identificationInfo/MD_DataIdentification/resourceConstraints/
MD_LegalConstraints**

diagram			
annotation	documentation	resource constraints details	

element **MI_Metadata/identificationInfo/MD_DataIdentification/resourceConstraints/MD_LegalConstraints/accessConstraints**

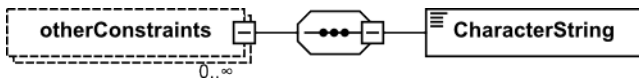
diagram				
type	restrictionCode			
facets	enumeration	copyright		
	enumeration	patent		
	enumeration	patentPending		
	enumeration	trademark		
	enumeration	license		
	enumeration	intellectualPropertyRights		
	enumeration	restricted		
	enumeration	otherRestrictions		
attribute	Name	Type	Use	Annotation
	codeList	xs:string	required	MD_RestrictionCode
	codeListValue	restrictionCode	required	value of code list
annotation	documentation	limitation(s) placed upon the access or use of the data		

element **MI_Metadata/identificationInfo/MD_DataIdentification/resourceConstraints/MD_LegalConstraints/useConstraints**

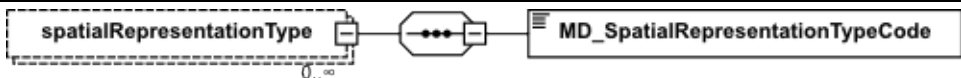
diagram				
type	MD_RestrictionCode			
facets	enumeration	copyright		
	enumeration	patent		
	enumeration	patentPending		
	enumeration	trademark		
	enumeration	license		
	enumeration	intellectualPropertyRights		
	enumeration	restricted		
	enumeration	otherRestrictions		
attribute	Name	Type	Use	Annotation
	codeList	xs:string	required	MD_RestrictionCode
	codeListValue	restrictionCode	required	value of code list

annotation	documentation	limitation(s) placed upon the access or use of the data
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element **MI_Metadata/identificationInfo/MD_DataIdentification/resourceConstraints/MD_LegalConstraints/otherConstraints**

diagram	
type	xs:string
annotation	documentation resource constraints: other constraints

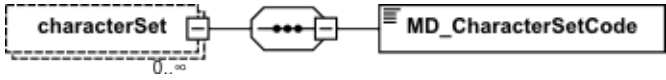
element **MI_Metadata/identificationInfo/MD_DataIdentification/spatialRepresentationType**

diagram				
type	spatialRepresentationTypeCode			
facets	enumeration	vector		
	enumeration	grid		
	enumeration	textTable		
	enumeration	tin		
	enumeration	stereoModel		
	enumeration	video		
attribute	Name	Type	Use	Annotation
	codeList	xs:string	required	MD_SpatialRepresentationTypeCode
	codeListValue	spatialRepresentationTypeCode	required	value of code list
annotation	documentation	method used to represent geographic information in the dataset		

element **MI_Metadata/identificationInfo/MD_DataIdentification/language**

diagram	
type	xs:language
annotation	documentation language

element **MI_Metadata/identificationInfo/MD_DataIdentification/characterSet**

diagram		
type	characterSetCode	
facets	enumeration	ucs2
	enumeration	ucs4
	enumeration	utf7
	enumeration	utf8
	enumeration	utf16
	enumeration	8859part1
	enumeration	8859part2
	enumeration	8859part3
	enumeration	8859part4
	enumeration	8859part5
	enumeration	8859part6
	enumeration	8859part7
	enumeration	8859part8
	enumeration	8859part9
	enumeration	8859part10
	enumeration	8859part11
	enumeration	8859part12
	enumeration	8859part13
	enumeration	8859part14
	enumeration	8859part15
	enumeration	8859part16
	enumeration	jis
	enumeration	shiftJIS
	enumeration	eucJP
	enumeration	usAscii
	enumeration	ebcdic
	enumeration	eucKR
	enumeration	big6
	enumeration	GB2312



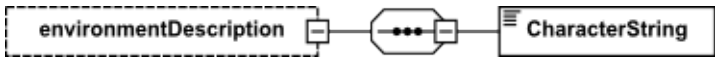
attribute	Name	Type	attribute	Name
	codeList	xs:string	required	MD_CharacterSetCode
	codeListValue	characterSetCode	required	value of code list
annotation	documentation	name of the character coding standard used in the resource		

element **MI_Metadata/identificationInfo/MD_DataIdentification/topicCategory**

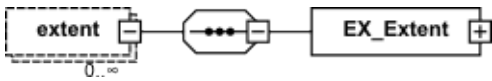
diagram				
type	topicCategoryCode			
facets	enumeration	farming		
	enumeration	biota		
	enumeration	boundaries		
	enumeration	climatologyMeteorologyAtmosphere		
	enumeration	economy		
	enumeration	elevation		
	enumeration	environment		
	enumeration	geoscientificInformation		
	enumeration	health		
	enumeration	imageBaseMapsEarthCover		
	enumeration	intelligenceMilitary		
	enumeration	inlandWaters		
	enumeration	location		
	enumeration	oceans		
	enumeration	planningCadastre		
	enumeration	society		
	enumeration	structure		
	enumeration	transportation		
	enumeration	utilitiesCommunication		
attribute	Name	Type	Use	Annotation
	codeList	xs:string	required	MD_TopicCategoryCode
	codeListValue	topicCategoryCode	required	value of code list

annotation	documentation	high-level geographic data thematic classification to assist in the grouping and search of available geographic data sets. Can be used to group keywords as well. Listed examples are not exhaustive
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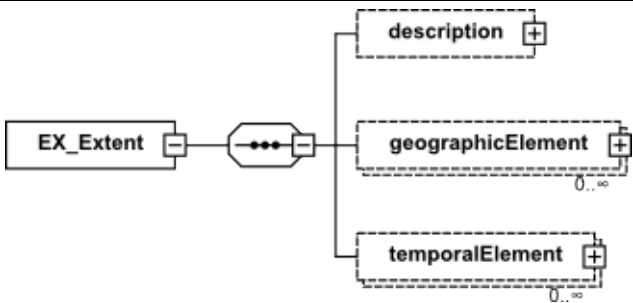
element **MI_Metadata/identificationInfo/MD_DataIdentification/environmentDescription**

diagram		
type	xs:string	
annotation	documentation	description of the environment

element **MI_Metadata/identificationInfo/MD_DataIdentification/extent**

diagram		
annotation	documentation	geographic extent of dataset

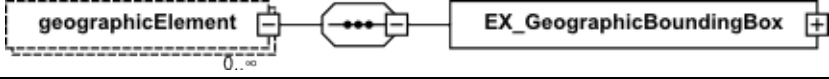
element **MI_Metadata/identificationInfo/MD_DataIdentification/extent/EX_Extent**

diagram		
annotation	documentation	geographic extent details

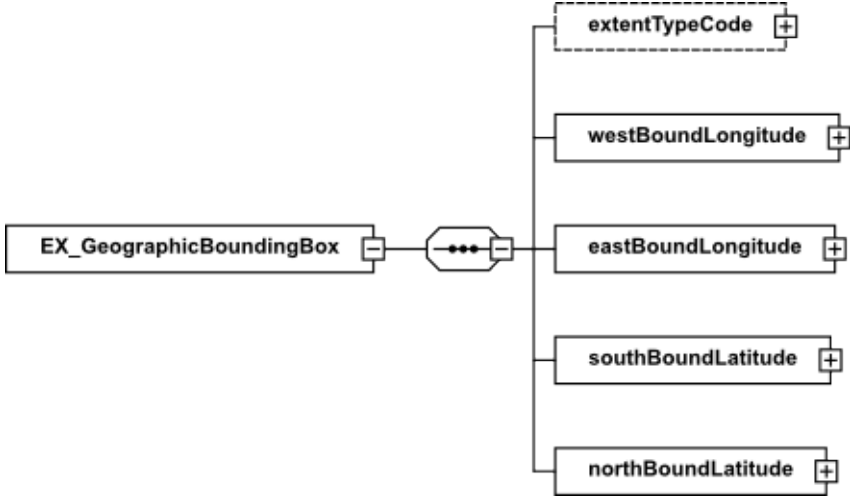
element **MI_Metadata/identificationInfo/MD_DataIdentification/extent/EX_Extent/description**

diagram		
type	xs:string	
annotation	documentation	geographic extent: description

element **MI_Metadata/identificationInfo/MD_DataIdentification/extent/EX_Extent/**
geographicElement

diagram	
annotation	documentation geographic extent: geographic elements

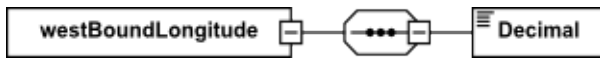
element **MI_Metadata/identificationInfo/MD_DataIdentification/extent/EX_Extent/**
geographicElement/EX_GeographicBoundingBox

diagram				
attribute	Name	Type	Use	Annotation
	id	xs:string	required	identifier
annotation	documentation	geographic extent: bounding box		

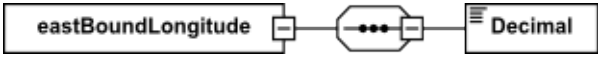
element **MI_Metadata/identificationInfo/MD_DataIdentification/extent/EX_Extent/**
geographicElement/EX_GeographicBoundingBox/extentTypeCode

diagram			
type	xs:Boolean		
annotation	documentation	geographic bounding box: extent type code	

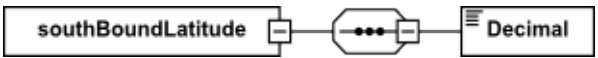
element **MI_Metadata/identificationInfo/MD_DataIdentification/extent/EX_Extent/**
geographicElement/EX_GeographicBoundingBox/westBoundLongitude

diagram			
type	xs:decimal		
annotation	documentation	geographic bounding box: west bound longitude	

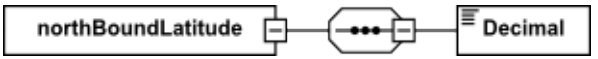
element **MI_Metadata/identificationInfo/MD_DataIdentification/extent/EX_Extent/
geographicElement/EX_GeographicBoundingBox/eastBoundLongitude**

diagram	
type	xs:decimal
annotation	documentation geographic bounding box: east bound longitude

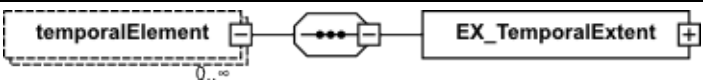
element **MI_Metadata/identificationInfo/MD_DataIdentification/extent/EX_Extent/
geographicElement/EX_GeographicBoundingBox/southBoundLatitude**

diagram	
type	xs:decimal
annotation	documentation geographic bounding box: south bound latitude

element **MI_Metadata/identificationInfo/MD_DataIdentification/extent/EX_Extent/
geographicElement/EX_GeographicBoundingBox/northBoundLatitude**

diagram	
type	xs:decimal
annotation	documentation geographic bounding box: north bound latitude

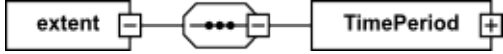
element **MI_Metadata/identificationInfo/MD_DataIdentification/extent/EX_Extent/
temporalElement**

diagram	
annotation	documentation geographic extent: temporal element

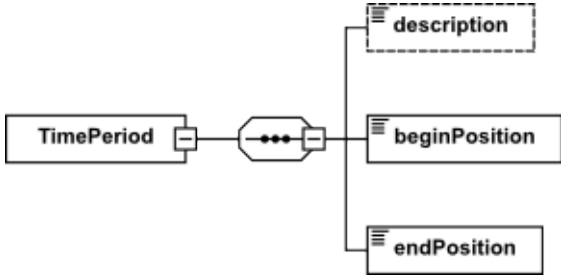
element **MI_Metadata/identificationInfo/MD_DataIdentification/extent/EX_Extent/
temporalElement/EX_TemporalExtent**

diagram	
annotation	documentation temporal extent details

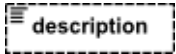
element **MI_Metadata/identificationInfo/MD_DataIdentification/extent/EX_Extent/**
temporalElement/EX_TemporalExtent/extent

diagram	
annotation	documentation temporal extent

element **MI_Metadata/identificationInfo/MD_DataIdentification/extent/EX_Extent/**
temporalElement/EX_TemporalExtent/extent/TimePeriod

diagram	
type	xs:string
annotation	documentation time period details

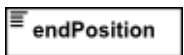
element **MI_Metadata/identificationInfo/MD_DataIdentification/extent/EX_Extent/**
temporalElement/EX_TemporalExtent/extent/TimePeriod/description

diagram	
type	xs:string
annotation	documentation time period: description

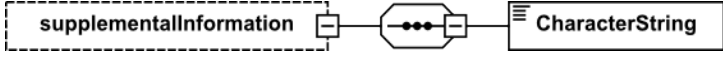
element **MI_Metadata/identificationInfo/MD_DataIdentification/extent/EX_Extent/**
temporalElement/EX_TemporalExtent/extent/TimePeriod/beginPosition

diagram	
type	xs:string
annotation	documentation time period: begin position

element **MI_Metadata/identificationInfo/MD_DataIdentification/extent/EX_Extent/**
temporalElement/EX_TemporalExtent/extent/TimePeriod/endPosition

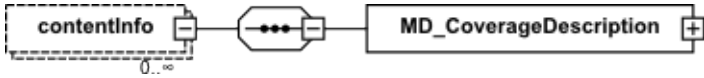
diagram	
type	xs:string
annotation	documentation time period: end position

element **MI_Metadata/identificationInfo/MD_DataIdentification/extent/supplementalInformation**

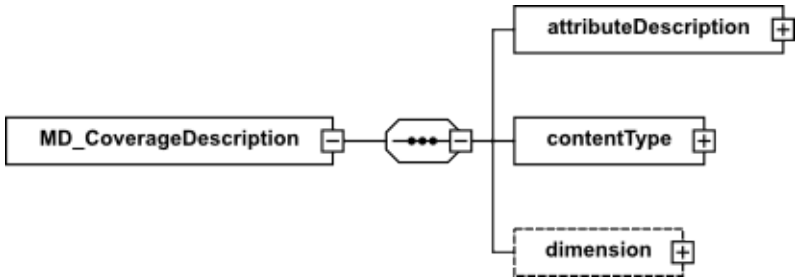
diagram	
annotation	documentation supplemental information

3.11 contentInfo

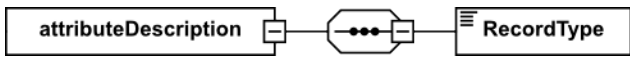
element **MI_Metadata/contentInfo**

diagram	
annotation	documentation content information

element **MI_Metadata/contentInfo/MD_CoverageDescription**

diagram	
annotation	documentation coverage description

element **MI_Metadata/contentInfo/MD_CoverageDescription/attributeDescription**

diagram	
type	xs:string
annotation	documentation attribute description

element **MI_Metadata/contentInfo/MD_CoverageDescription/contentType**

diagram	
type	coverageContentTypeCode
facets	enumeration image enumeration thematicClassification enumeration physicalMeasurement



	enumeration	referenceInformation		
	enumeration	auxiliaryData		
	enumeration	qualityInformation		
	enumeration	modelResult		
attribute	Name	Type	Use	Annotation
	codeList	xs:string	required	MD_CoverageContent TypeCode
	codeListValue	coverageContentTypeCode	required	value of code list
annotation	documentation	specific type of information represented in the cell		

element **MI_Metadata/contentInfo/MD_CoverageDescription/dimension**

diagram				
annotation	documentation	band information		

element **MI_Metadata/contentInfo/MD_CoverageDescription/dimension/MI_Band**

diagram				
annotation	documentation	band parameters		

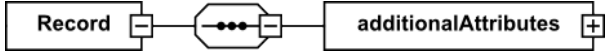
element **MI_Metadata/contentInfo/MD_CoverageDescription/dimension/MI_Band/
otherPropertyType**

diagram				
type	xs:string			
attribute	Name	Type	Use	Annotation
	href	xlink:href	required	EOS Additional Attributes
annotation	documentation	other property type – EOS additional attributes		

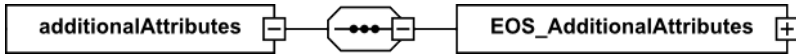
element **MI_Metadata/contentInfo/MD_CoverageDescription/dimension/MI_Band/
otherProperty**

diagram	
annotation	documentation other property – additional attributes

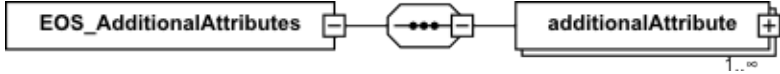
element **MI_Metadata/contentInfo/MD_CoverageDescription/dimension/MI_Band/
otherProperty/Record**

diagram	
annotation	documentation other property record

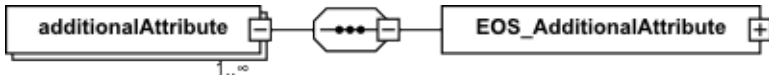
element **MI_Metadata/contentInfo/MD_CoverageDescription/dimension/MI_Band/
otherProperty/Record/additionalAttributes**

diagram	
annotation	documentation additional attributes

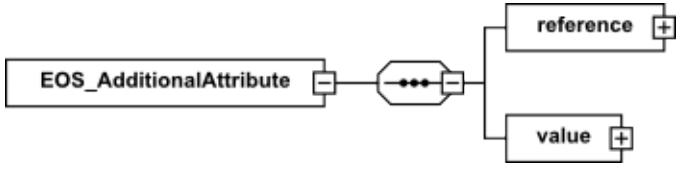
element **MI_Metadata/contentInfo/MD_CoverageDescription/dimension/MI_Band/
otherProperty/Record/additionalAttributes/EOS_AdditionalAttributes**

diagram	
annotation	documentation EOS additional attributes

element **MI_Metadata/contentInfo/MD_CoverageDescription/dimension/MI_Band/
otherProperty/Record/additionalAttributes/EOS_AdditionalAttributes/
additionalAttribute**

diagram	
annotation	documentation additionalAttribute

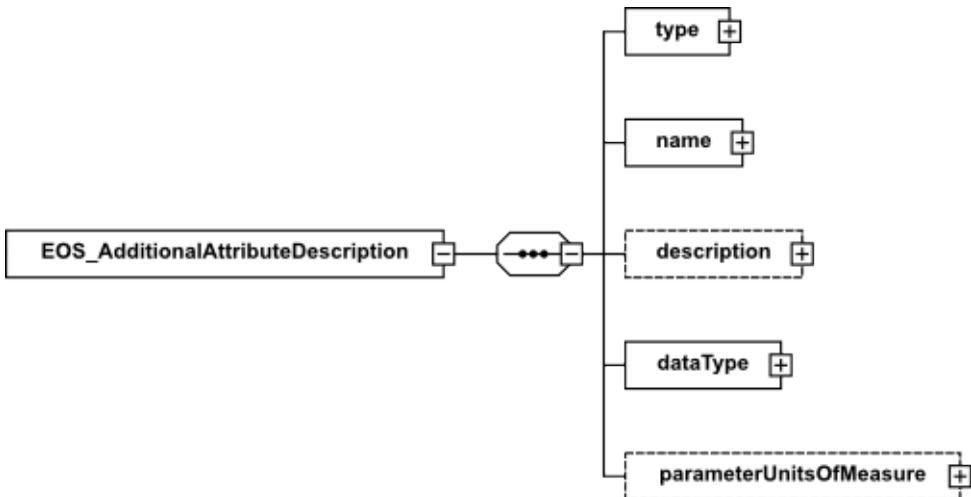
element **MI_Metadata/contentInfo/MD_CoverageDescription/dimension/MI_Band/
otherProperty/Record/additionalAttributes/EOS_AdditionalAttributes/
additionalAttribute/EOS_AdditionalAttribute**

diagram	
annotation	documentation EOS_AdditionalAttribute

element **MI_Metadata/contentInfo/MD_CoverageDescription/dimension/MI_Band/
otherProperty/Record/additionalAttributes/EOS_AdditionalAttributes/
additionalAttribute/EOS_AdditionalAttribute/reference**

diagram	
annotation	documentation additional attribute reference

element **MI_Metadata/contentInfo/MD_CoverageDescription/dimension/MI_Band/
otherProperty/Record/additionalAttributes/EOS_AdditionalAttributes/
additionalAttribute/EOS_AdditionalAttribute/reference/
EOS_AdditionalAttributeDescription**

diagram	
annotation	documentation cell geometry

element **MI_Metadata/contentInfo/MD_CoverageDescription/dimension/MI_Band/
otherProperty/Record/additionalAttributes/EOS_AdditionalAttributes/
additionalAttribute/EOS_AdditionalAttribute/reference/
EOS_AdditionalAttributeDescription/type**

diagram				
type	additionalAttributeTypeCode			
facets	enumeration	spatialInformation		
	enumeration	acquisitionInformation		
attribute	Name	Type	Use	Annotation
	codeList	xs:string	required	EOS_AdditionalAttribute TypeCode
	codeListValue	EOS_Additional AttributeTypeCode	required	value of code list
annotation	documentation	additional attribute: type		

element **MI_Metadata/contentInfo/MD_CoverageDescription/dimension/MI_Band/
otherProperty/Record/additionalAttributes/EOS_AdditionalAttributes/
additionalAttribute/EOS_AdditionalAttribute/reference/
EOS_AdditionalAttributeDescription/name**

diagram				
type	xs:string			
annotation	documentation	additional attribute: name		

element **MI_Metadata/contentInfo/MD_CoverageDescription/dimension/MI_Band/
otherProperty/Record/additionalAttributes/EOS_AdditionalAttributes/
additionalAttribute/EOS_AdditionalAttribute/reference/
EOS_AdditionalAttributeDescription/description**

diagram				
type	xs:string			
annotation	documentation	additional attribute: description		

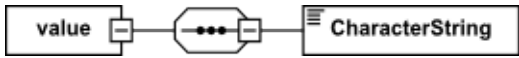
element **MI_Metadata/contentInfo/MD_CoverageDescription/dimension/MI_Band/
otherProperty/Record/additionalAttributes/EOS_AdditionalAttributes/
additionalAttribute/EOS_AdditionalAttribute/reference/
EOS_AdditionalAttributeDescription/dataType**

diagram				
type	additionalAttributeDataTypeCode			
facets	enumeration	STRING		
	enumeration	FLOAT		
	enumeration	INT		
	enumeration	BOOLEAN		
	enumeration	DATE		
	enumeration	TIME		
	enumeration	DATETIME		
	enumeration	DATE_STRING		
	enumeration	TIME_STRING		
	enumeration	DATETIME_STRING		
attribute	Name	Type	Use	Annotation
	codeList	xs:string	required	EOS_AdditionalAttribute DataTypeCode
	codeListValue	DataTypeCode	required	value of code list
annotation	documentation	additional attribute: data type		

element **MI_Metadata/contentInfo/MD_CoverageDescription/dimension/MI_Band/
otherProperty/Record/additionalAttributes/EOS_AdditionalAttributes/
additionalAttribute/EOS_AdditionalAttribute/reference/
EOS_AdditionalAttributeDescription/parameterUnitsOfMeasure**

diagram				
type	xs:string			
annotation	documentation	additional attribute: parameter units of measure		

element **MI_Metadata/contentInfo/MD_CoverageDescription/dimension/MI_Band/otherProperty/Record/additionalAttributes/EOS_AdditionalAttributes/additionalAttribute/EOS_AdditionalAttribute/value**

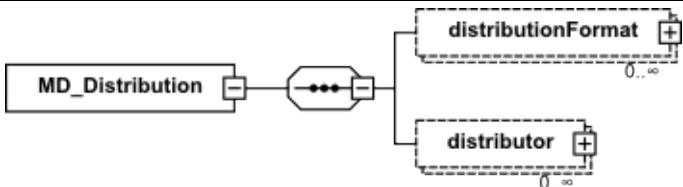
diagram	
type	xs:string
annotation	documentation additional attribute: value

3.12 distributionInfo

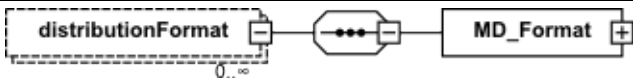
element **MI_Metadata/distributionInfo**

diagram	
annotation	documentation distribution information

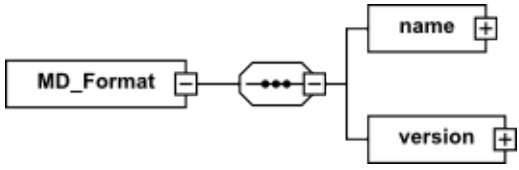
element **MI_Metadata/distributionInfo/MD_Distribution**

diagram	
annotation	documentation distribution information details

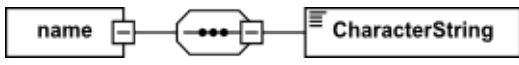
element **MI_Metadata/distributionInfo/MD_Distribution/distributionFormat**

diagram	
annotation	documentation distribution format

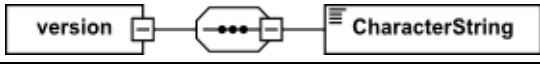
element **MI_Metadata/distributionInfo/MD_Distribution/distributionFormat/MD_Format**

diagram	
annotation	documentation distribution format details

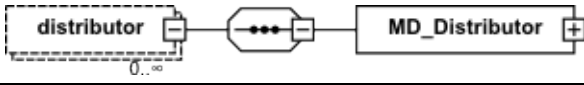
element **MI_Metadata/distributionInfo/MD_Distribution/distributionFormat/MD_Format/name**

diagram	
type	xs:string
annotation	documentation name of the data format

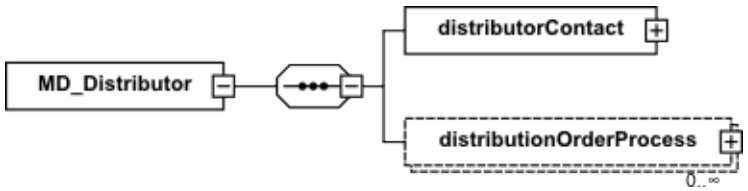
element **MI_Metadata/distributionInfo/MD_Distribution/distributionFormat/MD_Format/version**

diagram	
type	xs:string
annotation	documentation version of the data format

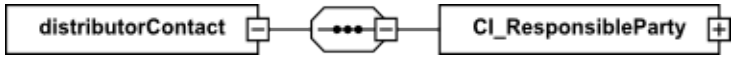
element **MI_Metadata/distributionInfo/MD_Distribution/distributor**

diagram	
annotation	documentation distributor information

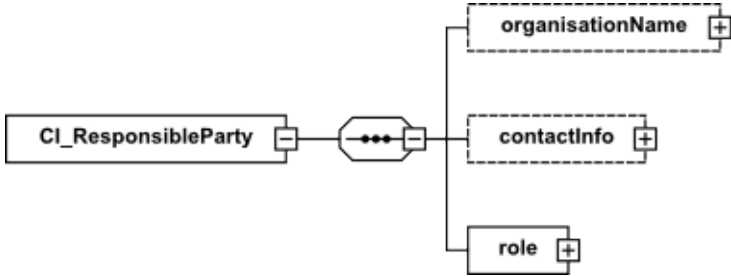
element **MI_Metadata/distributionInfo/MD_Distribution/distributor/MD_Distributor**

diagram	
annotation	documentation distributor information details

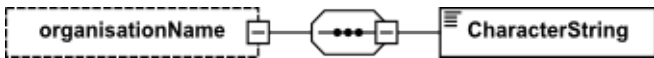
element **MI_Metadata/distributionInfo/MD_Distribution/distributor/MD_Distributor/
distributorContact**

diagram	
annotation	documentation distribution contact information

element **MI_Metadata/distributionInfo/MD_Distribution/distributor/MD_Distributor/
distributorContact/CI_ResponsibleParty**

diagram	
annotation	documentation distribution: responsible party

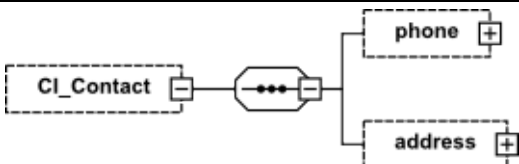
element **MI_Metadata/distributionInfo/MD_Distribution/distributor/MD_Distributor/
distributorContact/CI_ResponsibleParty/organisationName**

diagram	
type	xs:string
annotation	documentation distribution: name of organization

element **MI_Metadata/distributionInfo/MD_Distribution/distributor/MD_Distributor/
distributorContact/CI_ResponsibleParty/contactInfo**

diagram	
annotation	documentation distribution contact information

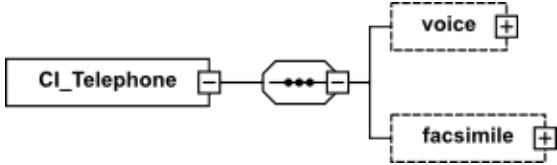
element **MI_Metadata/distributionInfo/MD_Distribution/distributor/MD_Distributor/
distributorContact/CI_ResponsibleParty/contactInfo/CI_Contact**

diagram	
annotation	documentation distribution contact information details

element **MI_Metadata/distributionInfo/MD_Distribution/distributor/MD_Distributor/distributorContact/CI_ResponsibleParty/contactInfo/CI_Contact/phone**

diagram	
annotation	documentation distribution contact: phone information

element **MI_Metadata/distributionInfo/MD_Distribution/distributor/MD_Distributor/distributorContact/CI_ResponsibleParty/contactInfo/CI_Contact/phone/CI_Telephone**

diagram	
annotation	documentation distribution contact: telephone information details

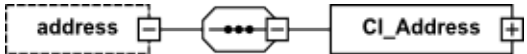
element **MI_Metadata/distributionInfo/MD_Distribution/distributor/MD_Distributor/distributorContact/CI_ResponsibleParty/contactInfo/CI_Contact/phone/CI_Telephone/voice**

diagram	
type	xs:string
annotation	documentation distribution contact: phone number

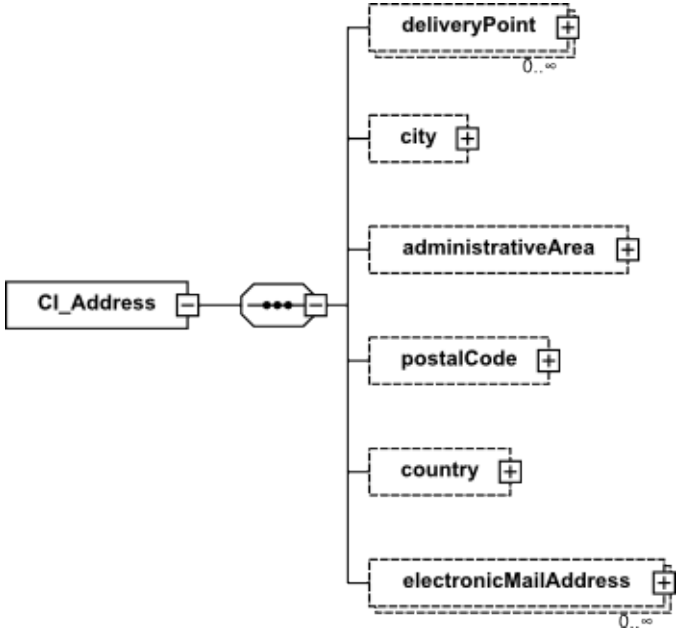
element **MI_Metadata/distributionInfo/MD_Distribution/distributor/MD_Distributor/distributorContact/CI_ResponsibleParty/contactInfo/CI_Contact/phone/CI_Telephone/facsimile**

diagram	
type	xs:string
annotation	documentation distribution contact: fax number

element **MI_Metadata/distributionInfo/MD_Distribution/distributor/MD_Distributor/distributorContact/CI_ResponsibleParty/contactInfo/CI_Contact/address**

diagram	
annotation	documentation distribution contact: address information

element **MI_Metadata/distributionInfo/MD_Distribution/distributor/MD_Distributor/distributorContact/CI_ResponsibleParty/contactInfo/CI_Contact/address/CI_Address**

diagram	 The diagram shows the structure of the CI_Address element. It is a container element (rectangle with a small square on the left) that contains a sequence of six optional elements (dashed rectangles with a '+' in a small square on the right). The elements are: deliveryPoint, city, administrativeArea, postalCode, country, and electronicMailAddress. Each element has a cardinality of 0..∞. The elements are connected by a sequence connector (a rectangle with three dots inside).
annotation	documentation distribution contact: address information details

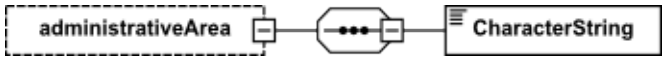
element **MI_Metadata/distributionInfo/MD_Distribution/distributor/MD_Distributor/distributorContact/CI_ResponsibleParty/contactInfo/CI_Contact/address/CI_Address/deliveryPoint**

diagram	 The diagram shows the structure of the deliveryPoint element. It is a container element (rectangle with a small square on the left) that contains a sequence connector (a rectangle with three dots inside) which points to a CharacterString element (rectangle with a small square on the left).
type	xs:string
annotation	documentation distribution contact: physical address

element **MI_Metadata/distributionInfo/MD_Distribution/distributor/MD_Distributor/distributorContact/CI_ResponsibleParty/contactInfo/CI_Contact/address/CI_Address/city**

diagram	 The diagram shows the structure of the city element. It is a container element (rectangle with a small square on the left) that contains a sequence connector (a rectangle with three dots inside) which points to a CharacterString element (rectangle with a small square on the left).
type	xs:string
annotation	documentation distribution contact: city

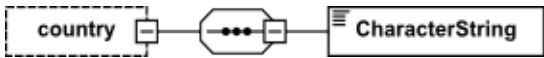
element **MI_Metadata/distributionInfo/MD_Distribution/distributor/MD_Distributor/distributorContact/CI_ResponsibleParty/contactInfo/CI_Contact/address/CI_Address/administrativeArea**

diagram	
type	xs:string
annotation	documentation distribution contact: administrative area

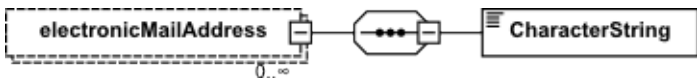
element **MI_Metadata/distributionInfo/MD_Distribution/distributor/MD_Distributor/distributorContact/CI_ResponsibleParty/contactInfo/CI_Contact/address/CI_Address/postalCode**

diagram	
type	xs:string
annotation	documentation distribution contact: postal code

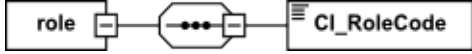
element **MI_Metadata/distributionInfo/MD_Distribution/distributor/MD_Distributor/distributorContact/CI_ResponsibleParty/contactInfo/CI_Contact/address/CI_Address/country**

diagram	
type	xs:string
annotation	documentation distribution contact: country

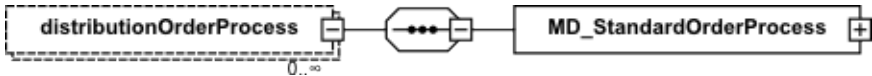
element **MI_Metadata/distributionInfo/MD_Distribution/distributor/MD_Distributor/distributorContact/CI_ResponsibleParty/contactInfo/CI_Contact/address/CI_Address/electronicMailAddress**

diagram	
type	xs:string
annotation	documentation distribution contact: email address

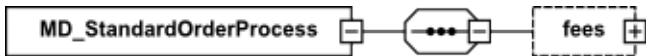
element **MI_Metadata/distributionInfo/MD_Distribution/distributor/MD_Distributor/distributorContact/CI_ResponsibleParty/role**

diagram				
type	roleCode			
facets	enumeration	resourceProvider		
	enumeration	custodian		
	enumeration	owner		
	enumeration	sponsor		
	enumeration	user		
	enumeration	distributor		
	enumeration	originator		
	enumeration	pointOfContact		
	enumeration	principalInvestigator		
	enumeration	processor		
	enumeration	publisher		
	enumeration	author		
	enumeration	collaborator		
attribute	Name	Type	Use	Annotation
	codeList	xs:string	required	CI_RoleCode
	codeListValue	roleCode	required	value from code list
annotation	documentation	function performed by the responsible party		

element **MI_Metadata/distributionInfo/MD_Distribution/distributor/MD_Distributor/distributionOrderProcess**

diagram				
annotation	documentation	distribution order process information		

element **MI_Metadata/distributionInfo/MD_Distribution/distributor/MD_Distributor/distributionOrderProcess/MD_StandardOrderProcess**

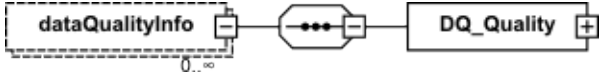
diagram				
annotation	documentation	distribution order process details		

element **MI_Metadata/distributionInfo/MD_Distribution/distributor/MD_Distributor/distributionOrderProcess/MD_StandardOrderProcess/fees**

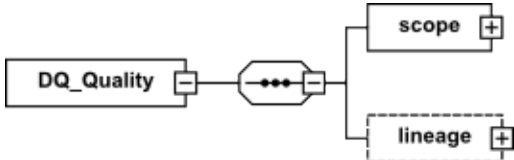
diagram	
type	xs:string
annotation	documentation distribution order process: fees

3.13 dataQualityInfo

element **MI_Metadata/dataQualityInfo**

diagram	
annotation	documentation data quality information

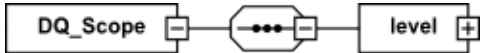
element **MI_Metadata/dataQualityInfo/DQ_Quality**

diagram	
annotation	documentation data quality information details

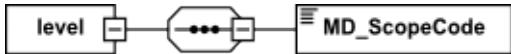
element **MI_Metadata/dataQualityInfo/DQ_Quality/scope**

diagram	
annotation	documentation data quality: scope

element **MI_Metadata/dataQualityInfo/DQ_Quality/scope/DQ_Scope**

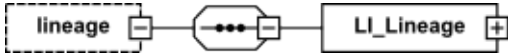
diagram	
annotation	documentation data quality: scope details

element **MI_Metadata/dataQualityInfo/DQ_Quality/scope/DQ_Scope/level**

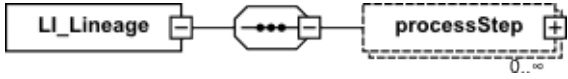
diagram	
type	scopeCode
facets	enumeration attribute enumeration attributeType

	enumeration	collectionHardware		
	enumeration	collectionSession		
	enumeration	dataset		
	enumeration	series		
	enumeration	nonGeographicDataset		
	enumeration	dimensionGroup		
	enumeration	feature		
	enumeration	featureType		
	enumeration	propertyType		
	enumeration	fieldSession		
	enumeration	software		
	enumeration	service		
	enumeration	model		
	enumeration	tile		
attribute	Name	Type	Use	Annotation
	codeList	xs:string	required	MD_ScopeCode
	codeListValue	scopeCode	required	value from code list
annotation	documentation	class of information to which the referencing entity applies		

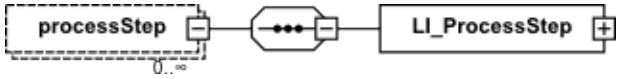
element **MI_Metadata/dataQualityInfo/DQ_Quality/lineage**

diagram				
annotation	documentation	lineage information		

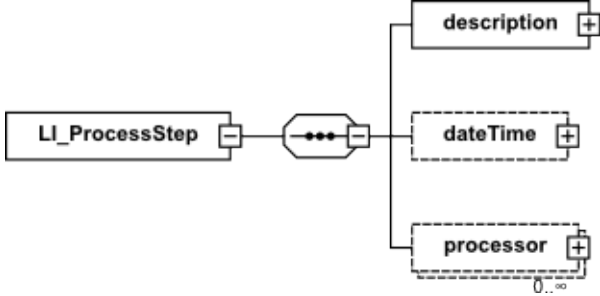
element **MI_Metadata/dataQualityInfo/DQ_Quality/lineage/LI_Lineage**

diagram				
annotation	documentation	lineage information details		

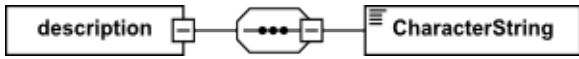
element **MI_Metadata/dataQualityInfo/DQ_Quality/lineage/LI_Lineage/processStep**

diagram				
annotation	documentation	lineage: processing step information		

element **MI_Metadata/dataQualityInfo/DQ_Quality/lineage/LI_Lineage/processStep/**
LI_ProcessStep

diagram	
annotation	documentation lineage: processing step information details

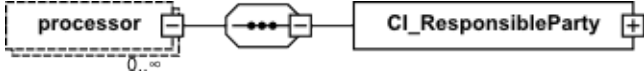
element **MI_Metadata/dataQualityInfo/DQ_Quality/lineage/LI_Lineage/processStep/**
LI_ProcessStep/description

diagram	
type	xs:string
annotation	documentation processing step: description

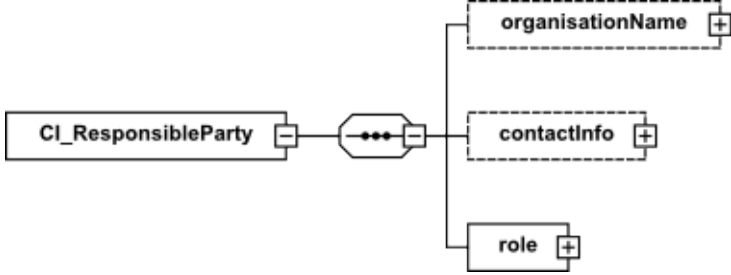
element **MI_Metadata/dataQualityInfo/DQ_Quality/lineage/LI_Lineage/processStep/**
LI_ProcessStep/dateTime

diagram	
type	xs:date
annotation	documentation processing step: time stamp

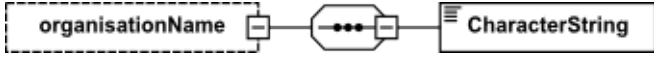
element **MI_Metadata/dataQualityInfo/DQ_Quality/lineage/LI_Lineage/processStep/**
LI_ProcessStep/processor

diagram	
annotation	documentation processing step: processor

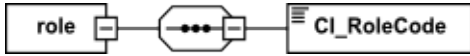
element **MI_Metadata/dataQualityInfo/DQ_Quality/lineage/LI_Lineage/processStep/**
LI_ProcessStep/processor/CI_ResponsibleParty

diagram	 The diagram shows the structure of the CI_ResponsibleParty element. It is a complex type containing three optional elements: organisationName, contactInfo, and role. The CI_ResponsibleParty element is represented by a rectangle with a small square on its left side. It is connected to a circle containing three dots, which is then connected to three separate rectangles representing the optional elements: organisationName, contactInfo, and role. Each of these three elements has a small square with a plus sign on its right side, indicating that they are optional.
annotation	documentation processing step: responsible party

element **MI_Metadata/dataQualityInfo/DQ_Quality/lineage/LI_Lineage/processStep/**
LI_ProcessStep/processor/CI_ResponsibleParty/organisationName

diagram	 The diagram shows the structure of the organisationName element. It is a simple type containing a CharacterString. The organisationName element is represented by a rectangle with a small square on its left side. It is connected to a circle containing three dots, which is then connected to a rectangle representing the CharacterString element. The CharacterString element has a small square with a plus sign on its right side, indicating that it is optional.
type	xs:string
annotation	documentation

element **MI_Metadata/dataQualityInfo/DQ_Quality/lineage/LI_Lineage/processStep/**
LI_ProcessStep/processor/CI_ResponsibleParty/role

diagram	 The diagram shows the structure of the role element. It is a simple type containing a CI_RoleCode. The role element is represented by a rectangle with a small square on its left side. It is connected to a circle containing three dots, which is then connected to a rectangle representing the CI_RoleCode element. The CI_RoleCode element has a small square with a plus sign on its right side, indicating that it is optional.																										
type	roleCode																										
facets	<table> <tr><td>enumeration</td><td>resourceProvider</td></tr> <tr><td>enumeration</td><td>custodian</td></tr> <tr><td>enumeration</td><td>owner</td></tr> <tr><td>enumeration</td><td>sponsor</td></tr> <tr><td>enumeration</td><td>user</td></tr> <tr><td>enumeration</td><td>distributor</td></tr> <tr><td>enumeration</td><td>originator</td></tr> <tr><td>enumeration</td><td>pointOfContact</td></tr> <tr><td>enumeration</td><td>principalInvestigator</td></tr> <tr><td>enumeration</td><td>processor</td></tr> <tr><td>enumeration</td><td>publisher</td></tr> <tr><td>enumeration</td><td>author</td></tr> <tr><td>enumeration</td><td>collaborator</td></tr> </table>	enumeration	resourceProvider	enumeration	custodian	enumeration	owner	enumeration	sponsor	enumeration	user	enumeration	distributor	enumeration	originator	enumeration	pointOfContact	enumeration	principalInvestigator	enumeration	processor	enumeration	publisher	enumeration	author	enumeration	collaborator
enumeration	resourceProvider																										
enumeration	custodian																										
enumeration	owner																										
enumeration	sponsor																										
enumeration	user																										
enumeration	distributor																										
enumeration	originator																										
enumeration	pointOfContact																										
enumeration	principalInvestigator																										
enumeration	processor																										
enumeration	publisher																										
enumeration	author																										
enumeration	collaborator																										

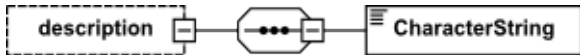
attribute	Name	Type	Use	Annotation
	codeList	xs:string	required	CI_RoleCode
	codeListValue	roleCode	required	value from code list
annotation	documentation	function performed by the responsible party		
diagram				
type	xs:string			
annotation	documentation	processing step: source description		

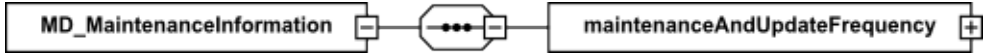
diagram				
type	xs:string			
annotation	documentation	software reference: title		

3.14 metadataMaintenance

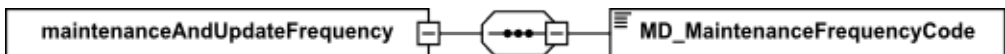
element **MI_Metadata/metadataMaintenance**

diagram				
annotation	documentation	metadata maintenance information		

element **MI_Metadata/metadataMaintenance/MD_MaintenanceInformation**

diagram				
annotation	documentation	metadata maintenance details		

element **MI_Metadata/metadataMaintenance/MD_MaintenanceInformation/maintenanceAndUpdateFrequency**

diagram				
type	maintenanceFrequencyCode			
facets	enumeration	continual		
	enumeration	daily		
	enumeration	weekly		
	enumeration	fortnightly		



	enumeration	monthly		
	enumeration	quarterly		
	enumeration	biannually		
	enumeration	annually		
	enumeration	asNeeded		
	enumeration	irregular		
	enumeration	notPlanned		
	enumeration	unknown		
attribute	Name	Type	Use	Annotation
	codeList	xs:string	required	MD_MaintenanceFrequencyCode
	codeListValue	maintenance FrequencyCode	required	value of code list
annotation	documentation	frequency with which modifications and deletions are made to the data after it is first produced		