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WMO Core Metadata Profile version 1.3

Specification

Part 2 – Abstract Test Suite, Data Dictionary and Code Lists

Appendix C.1.3-Part 2 to the Manual on the WMO Information System (WMO No. 1060)

Document version: 1.0: extracted from WMO-No. 1060 *The Manual on WIS*

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12. WMO CORE METADATA PROFILE UML MODEL

Metadata records compliant with the WMO Core Metadata Profile shall contain as a minimum the information defined in Figure 1. These are the "mandatory" elements of the record.

The WMO Core Metadata Profile specification defines a further set of elements that shall be included in a WIS discovery metadata record under certain conditions. These are illustrated in Figure 2.

Details of the UML classes and attributes are provided in Part 2, 3.

Note: For reference, the normative UML model for ISO 19115:2003/Cor. 1:2006 is published by ISO/TC 211 at: http://www.isotc211.org/hmmg/HTML/index.htm.

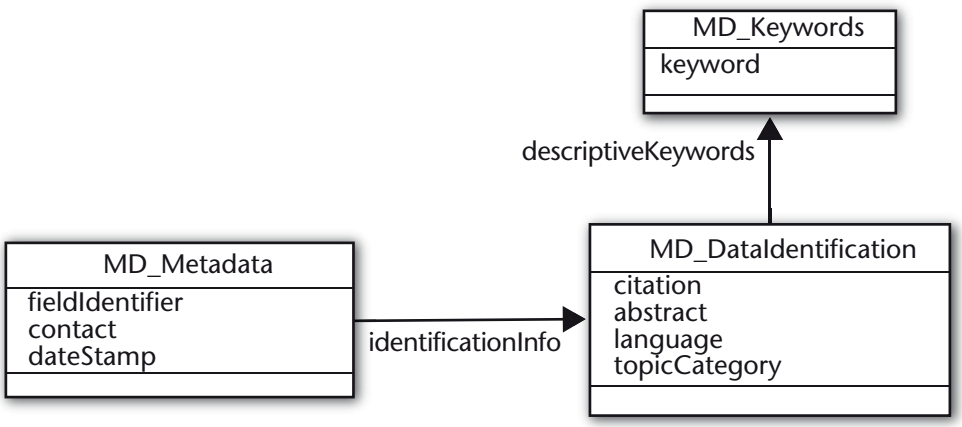

Figure 1. Mandatory contents of a WIS discovery metadata record

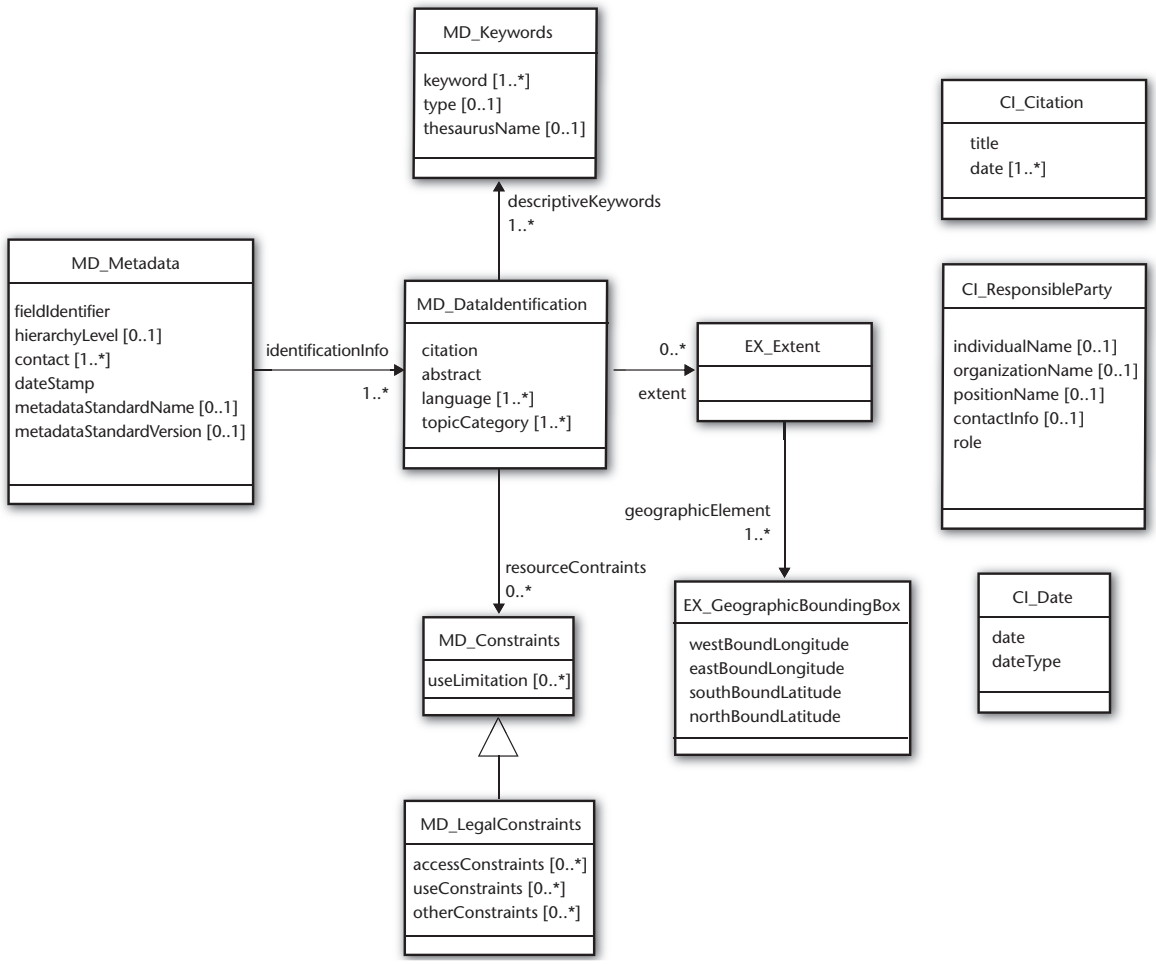

Figure 2. Full specification of the WMO Core Metadata Profile, including both optional and mandatory items

PART 2. WMO CORE METADATA PROFILE VERSION 1.3 SPECIFICATION: ABSTRACT TEST SUITE, DATA DICTIONARY AND CODE LISTS

1. SCOPE

The specification defines the content, structure and encoding of discovery metadata published within the WIS DAR catalogue.

The metadata standard defined herein is an informal category-1 profile[4] of the International Standard ISO 19115:2003 'Geographic information – Metadata'. This metadata standard shall be referred to as the WMO Core Metadata Profile.

WIS discovery metadata records shall be encoded in XML as defined by ISO/TS 19139:2007.

Part 1 of this specification defines the conformance requirements for the WMO Core Metadata Profile. Part 2 defines the abstract test suite, data dictionary and code lists. Unless otherwise stated, references to Part 1 and Part 2 are to the relevant parts of this specification.

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[4] A category-1 profile places additional restrictions on the use of an International Standard to meet the more specific requirements of a given community. Profiles of International Standards may be formally registered. The WMO profile of ISO 19115 has not been registered and thus remains an "informal" profile.

2. ABSTRACT TEST SUITE (NORMATIVE)

Notes:

(1) Automated test suites for validating XML metadata records against both formal requirements and guidance can be found from the WIS wiki: http://wis.wmo.int/MD_Conform.

(2) An authoritative copy of the automated test suite for validating against the formal requirements described in this specification can be found at: http://wis.wmo.int/2012/metadata/validationTestSuite/.

2.1 Abstract tests for XML encoding

2.1.1 *ISO/TS 19139:2007 compliance*

Test id: http://wis.wmo.int/2012/metadata/conf/ISO-TS-19139-2007-xml-schema-validation

Test purpose: **Requirement 6.1.1:** Each WIS discovery metadata record shall validate without error against the XML schemas defined in ISO/TS 19139:2007.

Test method: Using a tool with strict interpretation of XML schema and full support for the W3C XML schema, validate the instance document under test against the XML schemas created from the UML model of ISO 19115:2003/Cor. 1:2006 using the encoding rules defined in ISO/TS 19139:2007 'Geographic information – Metadata – XML schema implementation' Clause 9. The normative location for these XML schemas are hosted by ISO at: http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO_19139_Schemas/.
A reference copy of these XML schemas is hosted by WMO at: http://wis.wmo.int/2011/schemata/iso19139_2007/schema/.

Test id: http://wis.wmo.int/2012/metadata/conf/ISO-TS-19139-2007-rule-based-validation

Test purpose: **Requirement 6.1.2:** Each WIS discovery metadata record shall validate without error against the rule-based constraints listed in ISO/TS 19139:2007 Annex A (Table A.1).

Test method: Using a tool that supports Schematron (ISO/IEC 19757-3:2006 'Information technology – Document Schema Definition Language (DSDL) – Part 3: Rule-based validation – Schematron'), validate the instance document under test against the rule-based constraints listed in ISO/TS 19139:2007 Annex A (Table A.1). A reference set of Schematron rules for this purpose is hosted by WMO at: http://wis.wmo.int/2012/metadata/validationTestSuite/.

2.1.2 *Explicit identification of namespaces in XML*

Test id: http://wis.wmo.int/2012/metadata/conf/explicit-xml-namespace-identification

Test purpose: **Requirement 6.2.1:** Each WIS discovery metadata record shall explicitly name all namespaces used within the record; use of default namespaces is prohibited.

Test method: In the instance document under test inspect all "xmlns" declarations to ensure that an XML namespace is provided, for example:
<gmd:MD_Metadata xmlns:gmd="http://www.isotc211.org/2005/gmd" … >

The following "xmlns" declaration is not permitted:
<MD_Metadata xmlns:="http://www.isotc211.org/2005/gmd" … >

2.1.3 *Specification of GML namespace*

Test id: http://wis.wmo.int/2012/metadata/conf/gml-namespace-specification

Test purpose: **Requirement 6.3.1:** Each WIS discovery metadata record shall declare the following XML namespace for GML: http://www.opengis.net/gml/3.2.

Test method: In the instance document under test inspect all "xmlns" declarations to ensure that the GML namespace is specified as http://www.opengis.net/gml/3.2, for example:
xmlns:gml="http://www.opengis.net/gmd/3.2"

2.2 Abstract tests for metadata uniqueness and discovery within the WIS DAR catalogue

2.2.1 *Unique gmd:fileIdentifier attribute*

Test id: http://wis.wmo.int/2012/metadata/conf/fileIdentifier-cardinality
Test purpose: **Requirement 8.1.1:** Each WIS discovery metadata record shall include one gmd:MD_Metadata/gmd:fileIdentifier attribute.
Test method: In the instance document under test, validate that there is one and only one instance of the element identified by the following XPath:
/gmd:MD_Metadata/gmd:fileIdentifier

Note: There is no abstract test for **Requirement 8.1.2:** The gmd:MD_Metadata/gmd:fileIdentifier attribute for each WIS discovery metadata record shall be unique within WIS.

2.2.2 *Mandatory WMO_CategoryCode keyword*

Test id: http://wis.wmo.int/2012/metadata/conf/WMO_CategoryCode-keyword-cardinality
Test purpose: **Requirement 8.2.1:** Each WIS discovery metadata record shall include at least one keyword from the WMO_CategoryCode code list.
Test method: (i) Inspect the instance document under test to assess whether the WMO_CategoryCode code list is specified as a keyword thesaurus within an instance of gmd:MD_Keywords using the following XPath:
/gmd:MD_Metadata/gmd:identificationInfo//gmd:descriptiveKeywords/
↘gmd:MD_Keywords/gmd:thesaurusName/gmd:CI_Citation/gmd:title// = "WMO_CategoryCode"
A gmx:Anchor element may be used to specify the location of the code list, e.g.
/gmd:MD_Metadata/gmd:identificationInfo//gmd:descriptiveKeywords/
↘gmd:MD_Keywords/gmd:thesaurusName/gmd:CI_Citation/gmd:title/
↘gmx:Anchor/@xlink:href = "http://wis.wmo.int/2012/codelists/WMOCodeLists.xml#WMO_CategoryCode"
(ii) Inspect the associated gmd:MD_Keywords element to ensure that at least one instance of a keyword from the WMO_CategoryCode code list is present. A normative version of the WMO_CategoryCode code list is published by WMO at: http://wis.wmo.int/2012/codelists/WMOCodeLists.xml. Instances of keyword are identified by the following XPath:
/gmd:MD_Metadata/gmd:identificationInfo//gmd:descriptiveKeywords/
↘gmd:MD_Keywords/gmd:keyword

Test id: http://wis.wmo.int/2012/metadata/conf/WMO_CategoryCode-keyword-theme
Test purpose: **Requirement 8.2.2:** Keywords from WMO_CategoryCode code list shall be defined as keyword type "theme".
Test method: (i) Inspect the instance document under test to assess whether the WMO_CategoryCode code list is specified as a keyword thesaurus within an instance of gmd:MD_Keywords using the following XPath:
/gmd:MD_Metadata/gmd:identificationInfo//gmd:descriptiveKeywords/
↘gmd:MD_Keywords/gmd:thesaurusName/gmd:CI_Citation/gmd:title// = "WMO_CategoryCode"
A gmx:Anchor element may be used to specify the location of the code list, e.g.

/gmd:MD_Metadata/gmd:identificationInfo//gmd:descriptiveKeywords/
↘gmd:MD_Keywords/gmd:thesaurusName/gmd:CI_Citation/gmd:title/
↘gmx:Anchor/@xlink:href = "http://wis.wmo.int/2012/codelists/WMOCodeLists.xml#WMO_CategoryCode"
(ii) Inspect the associated gmd:MD_Keywords element to ensure that the keyword type is specified as "theme" from the MD_KeywordTypeCode code list, e.g.
/gmd:MD_Metadata/gmd:identificationInfo//gmd:descriptiveKeywords/
↘gmd:MD_Keywords/gmd:type/gmd:MD_KeywordTypeCode = "theme"

Test id: http://wis.wmo.int/2012/metadata/conf/keyword-grouping
Test purpose: **Requirement 8.2.3:** All keywords sourced from a particular keyword thesaurus shall be grouped into a single instance of the MD_Keywords class.
Test method: Inspect the instance document under test to assess whether each keyword thesaurus is specified once and once only. Keyword thesaurus title is specified using the following XPath:
/gmd:MD_Metadata/gmd:identificationInfo//gmd:descriptiveKeywords/
↘gmd:MD_Keywords/gmd:thesaurusName/gmd:CI_Citation/gmd:title//

2.2.3 *Geographic data extent specification with bounding box*

Test id: http://wis.wmo.int/2012/metadata/conf/geographic-bounding-box

Test purpose: **Requirement 8.2.4:** Each WIS discovery metadata record describing geographic data shall include the description of at least one geographic bounding box defining the spatial extent of the data.
Test method: (i) Inspect the instance document under test to assess whether the metadata record is describing geographic data, e.g.
/gmd:MD_Metadata/gmd:hierarchyLevel/gmd:MD_ScopeCode != "nonGeographicDataset"
(ii) Inspect the instance document under test to assess whether the geographic extent is specified using a bounding box. Abstract test http://wis.wmo.int/2012/metadata/conf/ISO-TS-19139-2007-rule-based-validation shall ensure that the bounding box is correctly specified. Geographic extent bounding box is specified using the following XPath:
/gmd:MD_Metadata/gmd:identificationInfo/gmd:MD_DataIdentification/
gmd:extent/
↘gmd:EX_Extent/gmd:geographicExtent/gmd:EX_GeographicBoundingBox

Note: There is no abstract test for **Requirement 8.2.5:** All information within a metadata record shall, as a minimum, be provided in English within the metadata record.

2.3 Description of data for global exchange via WIS

2.3.1 *Identification of data for global exchange via WIS*

Test id: http://wis.wmo.int/2012/metadata/conf/identification-of-globally-exchanged-data
Test purpose: **Requirement 9.1.1:** A WIS discovery metadata record describing data for global exchange via the WIS shall indicate the scope of distribution using the keyword "GlobalExchange"
of type "dataCenter" from thesaurus WMO_DistributionScopeCode.
Test method: (i) Inspect the instance document under test to assess whether the WMO_DistributionScopeCode code list is specified as a keyword thesaurus within an instance of gmd:MD_Keywords using the following XPath:

/gmd:MD_Metadata/gmd:identificationInfo//gmd:descriptiveKeywords/
↘gmd:MD_Keywords/gmd:thesaurusName/gmd:CI_Citation/gmd:title// =
"WMO_DistributionScopeCode"
A gmx:Anchor element may be used to specify the location of the Code List; e.g.
/gmd:MD_Metadata/gmd:identificationInfo//gmd:descriptiveKeywords/
↘gmd:MD_Keywords/gmd:thesaurusName/gmd:CI_Citation/gmd:title/
↘gmx:Anchor/@xlink:href = "http://wis.wmo.int/2012/codelists/WMOCodeLists.
xml#WMO_DistributionScopeCode"
(ii) Inspect the associated gmd:MD_Keywords element to ensure that the keyword type is specified as "dataCentre" from the (amended) MD_KeywordTypeCode code list, e.g.
/gmd:MD_Metadata/gmd:identificationInfo//gmd:descriptiveKeywords/
↘gmd:MD_Keywords/gmd:type/gmd:MD_KeywordTypeCode = "dataCentre"
(iii) Inspect the associated gmd:MD_Keywords element to assess whether the keyword "GlobalExchange" from the WMO_DistributionScopeCode code list is present; e.g.
/gmd:MD_Metadata/gmd:identificationInfo//gmd:descriptiveKeywords/
↘gmd:MD_Keywords/gmd:keyword = "GlobalExchange"

Test id: http://wis.wmo.int/2012/metadata/conf/fileIdentifier-for-globally-exchanged-data
Test purpose: **Requirement 9.2.1:** A WIS discovery metadata record describing data for global exchange via the WIS shall have a gmd:MD_Metadata/gmd:fileIdentifier attribute formatted as follows: urn:x-wmo:md:int.wmo.wis::{uid} (where {uid} is a unique identifier derived from the GTS bulletin or file name).
Test method: In the instance document under test, validate that the gmd:fileIdentifier element conforms to the following regular expression:
/gmd:MD_Metadata/gmd:fileIdentifier// = "urn:x-wmo:md:int.wmo.wis::"

2.3.2 *Specification of WMO data policy for globally exchanged data*

Test id: http://wis.wmo.int/2012/metadata/conf/WMO-data-policy-for-globally-exchanged-data
Test purpose: **Requirement 9.3.1:** A WIS discovery metadata record describing data for global exchange via the WIS shall indicate the WMO data license as legal constraint (type: "otherConstraints") using one and only one term from the WMO_DataLicenseCode code list.
Test method: Inspect the instance document under test to assess whether one and only one instance of a term from the WMO_DataLicenseCode code list is specified using the following XPath:
/gmd:MD_Metadata/gmd:identificationInfo//gmd:resourceConstraints/
↘gmd:MD_LegalConstaints/gmd:otherConstraints//
A normative version of the WMO_DataLicenseCode code list is published by WMO at: http://wis.wmo.int/2012/codelists/WMOCodeLists.xml.
A gmx:Anchor element may be used to specify the location of the code list, e.g.
/gmd:MD_Metadata/gmd:identificationInfo//gmd:resourceConstraints/
↘gmd:MD_LegalConstaints/gmd:otherConstraints/gmx:Anchor/@xlink:href =
"http://wis.wmo.int/2012/codelists/WMOCodeLists.xml#WMO_DataLicenseCode"

2.3.3 *Specification of GTS product category (GTS priority) for globally exchanged data*

Test id: http://wis.wmo.int/2012/metadata/conf/GTS-priority-for-globally-exchanged-data
Test purpose: **Requirement 9.3.2:** A WIS discovery metadata record describing data for global exchange via the WIS shall indicate the GTS priority as legal constraint (type: "otherConstraints") using one and only one term from the WMO_GTSProductCategoryCode code list.

Test method: Inspect the instance document under test to assess whether one and only one instance of a term from the WMO_GTSProductCategoryCode code list is specified using the following XPath:
/gmd:MD_Metadata/gmd:identificationInfo//gmd:resourceConstraints/
↘gmd:MD_LegalConstaints/gmd:otherConstraints//
A normative version of the WMO_GTSProductCategoryCode code list is published by WMO at: http://wis.wmo.int/2012/codelists/WMOCodeLists.xml.
A gmx:Anchor element may be used to specify the location of the code list, for example:
/gmd:MD_Metadata/gmd:identificationInfo//gmd:resourceConstraints/
↘gmd:MD_LegalConstaints/gmd:otherConstraints/gmx:Anchor/@xlink:href =
"http://wis.wmo.int/2012/codelists/WMOCodeLists.xml#WMO_GTSProductCategoryCode"

3. WMO CORE METADATA PROFILE DATA DICTIONARY

This data dictionary includes only mandatory elements from ISO 19115:2003 and associated corrigendum and elements explicitly mentioned within this specification. Other elements are omitted. Please refer to ISO 19115:2003 and ISO 19115:2003/Cor. 1:2006 for further information. Note that additional guidance for metadata authors is provided at http://wis.wmo.int/MD_Index.

Table 1 to Table 7 are tabular representations of the UML diagrams for the section of the UML diagrams for the WMO Core Metadata Profile. Items marked with "M" in the "Obligation/ Condition" column shall be present in a valid WMO Core Metadata Profile record. Those entries marked with "O" should be present if they are applicable. Entries marked "C" shall be present if the associated condition is met.

Line numbers match those defined in ISO 19115:2003 and the associated corrigendum.

Table 1. Metadata entity set information

	Name/role name	*Definition*	*Obligation/ Condition*	*Maximum occurrence*	*Data type*	*Domain*
1	MD_Metadata	root entity which defines metadata about a resource or resources	M	1	Class	Lines 2-22
2	fileIdentifier	unique identifier for this metadata file	M	1	CharacterString	Free text See Part 1, 8.1 and 9.2.
6	hierarchyLevel	scope to which the metadata applies	O	1	Class	MD_ScopeCode «CodeList» See Table 12.
8	contact	party responsible for the metadata	M	N	Class	CI_ResponsibleParty «DataType» See Table 6.
9	dateStamp	date that the metadata was created or revised	M	1	Class	Date
10	metadataStandardName	name of the metadata standard (including profile name) used	O	1	CharacterString	Free text
11	metadataStandardVersion	version of the metadata standard (version of the profile) used	O	1	CharacterString	Free text See Part 1, 7.
15	Role name: identificationInfo	basic information about the resource(s) to which the metadata applies	M	N	Association	MD_DataIdentification See Table 2.

Table 2. Identification information (includes data identification)

	Name/role name	*Definition*	*Obligation/Condition*	*Maximum occurrence*	*Data type*	*Domain*
23	MD_Identification	basic information required to uniquely identify a resource or resources	Use obligation from referencing object	Use maximum occurrence from referencing object	Aggregated class (MD_ Metadata) «Abstract»	Lines 24-35.1
24	citation	information about citing the resource(s)	M	1	Class	CI_Citation«DataType» See Table 6.
25	abstract	brief narrative summary of the content of the resource(s)	M	1	CharacterString	Free text
33	Role name: descriptiveKeywords	provides category keywords, their type, and reference source	M	N	Association	MD_Keywords See Table 3 See Part 1, 8.2 and 9.1.
35	Role name: resourceConstraints	provides information about constraints which apply to the resource(s)	O	N	Association	MD_Constraints See Table 4. See Part 1, 9.3.
36	MD_DataIdentification	basic information required to uniquely identify a dataset	Use obligation from referencing object	Use maximum occurrence from referencing object	Specified Class (MD_ Identification)	Lines 37-46 and 24-35.1
39	language	language(s) used within the dataset	M	N	CharacterString	ISO 639-2 recommended
41	topicCategory	main theme(s) of the dataset	M	N	Class	MD_TopicCategoryCode«Enumeration» See Table 13.
45	extent	extent information including the bounding box, bounding polygon, vertical and temporal extent of the dataset	C	N	Association	EX_Extent«DataType» See Table 5 See Part 1, 8.2.

Table 3. Keyword information

	Name/role name	*Definition*	*Obligation/Condition*	*Maximum occurrence*	*Data type*	*Domain*
52	MD_Keywords	Keywords, their type and source	Use obligation from referencing object	Use maximum occurrence from referencing object	Aggregated class (MD_Identification)	Lines 53-55
53	keyword	commonly used word(s) or formalized word(s) or phrase(s) used to describe the subject	M	N	CharacterString	Free text See Part 1, 8.2 and Part 1, 9.1.
54	type	subject matter used to group similar keywords	O	1	Class	MD_KeywordTypeCode «CodeList» See Table 10. See Part 1, 8.2 and Part 1, 9.1.
55	thesaurusName	name of a formally registered thesaurus or a similar authoritative source of keywords	O	1	Class	CI_Citation «DataType» See Table 6 See Part 1, 8.2 and Part 1, 9.1.

Table 4. Constraint information (includes legal)

	Name/Role name	*Definition*	*Obligation/Condition*	*Maximum occurrence*	*Data type*	*Domain*
67	MD_Constraints	restrictions on the access and use of a resource or metadata	Use obligation from referencing object	Use maximum occurrence from referencing object	Aggregated class (MD_Metadata and MD_Identification)	Line 68
68	useLimitation	limitation affecting the fitness for use of the resource or metadata. Example, “not to be used for navigation”	O	N	CharacterString	Free text
69	MD_LegalConstraints	restrictions and legal prerequisites for accessing and using the resource or metadata	Use obligation from referencing object	N	Specialized class (MD_Constraints)	Lines 70-72 and 68
70	accessConstraints	access constraints applied to assure the protection of privacy or intellectual property, and any special restrictions or limitations or warnings on obtaining the resource or metadata	O	N	Class	MD_RestrictionCode «CodeList» See Table 11.

	Name/Role name	*Definition*	*Obligation/Condition*	*Maximum occurrence*	*Data type*	*Domain*
71	useConstraints	constraints applied to assure the protection of privacy or intellectual property, and any special restrictions or limitations or warnings on using the resource or metadata	O	N	Class	MD_RestrictionCode «CodeList» See Table 11.
72	otherConstraints	other restrictions and legal prerequisites for accessing and using the resource or metadata	C /accessConstraints or useConstraints equal "otherRestrictions"	N	CharacterString	Free text or code table See Part 1, 9.3.

Table 5. Extent information

	Name/role name	*Definition*	*Obligation/ Condition*	*Maximum occurrence*	*Data type*	*Domain*
334	EX_Extent	information about horizontal,vertical and temporal extent	Use obligation from referencing object	Use maximum occurrence from referencing object	Class «DataType»	Lines 335-338
336	Role name: geographicElement	provides geographic component of the extent of the referring object	C	N	Association	EX_GeographicExtent «Abstract» See Table 5. See Part 1, 8.2.
339	EX_GeographicExtent	geographic area of the dataset	Use obligation from referencing object	Use maximum occurrence from referencing object	Aggregated Class (EX_ Extent and EX_ SpatialTemporalExtent) «Abstract»	Line 340
343	EX_GeographicBoundingBox	geographic position of the dataset NOTE This is only an approximate reference so specifying the coordinate reference system is unnecessary	C See Subclause 8.2 (Part 1)	Use maximum occurrence from referencing object	Specialized class (EX_ GeographicExtent)	Lines 344-347 and 340
344	westBoundLongitude	westernmost coordinate of the limit of the dataset extent, expressed in longitude in decimal degrees (positive east)	M	1	Class	Angle -180,0 ≤ West Bounding Longitude Value ≤180,0 See Part 1, 8.2.

	Name/role name	Definition	Obligation/ Condition	Maximum occurrence	Data type	Domain
345	eastBoundLongitude	easternmost coordinate of the limit of the dataset extent, expressed in longitude in decimal degrees (positive east)	M	1	Class	Angle -180,0 ≤ East Bounding Longitude Value ≤180,0 See Part 1, 8.2.
346	southBoundLatitude	southernmost coordinate of the limit of the dataset extent, expressed in latitude in decimal degrees (positive north)	M	1	Class	-90,0 ≤ South Bounding Latitude Value ≤ 90,0; South Bounding Latitude Value ≤ North bounding Latitude Value See Part 1, 8.2.
347	northBoundLatitude	northernmost, coordinate of the limit of the dataset extent expressed in latitude in decimal degrees (positive north)	M	1	Class	-90,0 ≤ North Bounding Latitude Value ≤ 90,0; North Bounding Latitude Value ≥ South Bounding Latitude Value See Part 1, 8.2.

Table 6. Citation and responsible party information

	Name/role name	Definition	Obligation/ Condition	Maximum occurrence	Data type	Domain
359	CI_Citation	standardized resource reference object	Use obligation/condition from referencing object	Use maximum occurrence from referencing	Class «DataType»	Lines 360-373
360	title	name by which the cited resource is known	M	1	CharacterString	Free text
362	date	reference date for the cited resource	M	N	Class	CI_Date «DataType» SeeTable 7.
374	CI_ResponsibleParty	identification of, and means of communication with, person(s) and organizations associated with the dataset	Use obligation/condition from referencing object	Use maximum occurrence from referencing object	Class «DataType»	Lines 375-379

	Name/role name	*Definition*	*Obligation/ Condition*	*Maximum occurrence*	*Data type*	*Domain*
375	individualName	name of the responsible person surname, given name, title separated by a delimiter	C /organisationName and positionName not documented?	1	CharacterString	Free text
376	organisationName	name of the responsible organization	C /individualName and positionName not documented?	1	CharacterString	Free text
377	positionName	role or position of the responsible person	C /individualName and organisationName not documented?	1	CharacterString	Free text
378	contactInfo	contact information for the responsible party	O	1	Class	CI_Contact «DataType»
379	role	function performed by the responsible party	M	1	Class	CI_RoleCode «CodeList» See Table 9.

Table 7. Date information

	Name/role name	*Definition*	*Obligation/ Condition*	*Maximum occurrence*	*Data type*	*Domain*
393	CI_Date	reference date and event used to describe it	Use obligation/condition from referencing object	Use maximum occurrence from referencing object	Class «DataType»	Lines 119-120
394	date	reference date for the cited resource	M	1	Class	Date
395	dateType	event used for the reference date	M	1	Class	CI_DateTypeCode «CodeList» See Table 8.

4. CODE LISTS AND ENUMERATIONS

Table 8 to Table 13 describe the code lists defined in ISO 19115:2003 and ISO 19115:2003/Cor. 1:2006 that are referenced in the WMO Core Metadata Profile Specification – including amendments for WMO Core Metadata Profile in bold.

Table 14 to Table 17 describe the new code lists defined in WMO Core Metadata Profile. A GML code-list dictionary implementation of the new and amended code lists is published at: http://wis.wmo.int/2012/codelists/WMOCodeLists.xml.

Table 8. CI_DateTypeCode «CodeList» (including amendment)

	Name	*Domain code*	*Definition*
1.	CI_DateTypeCode	DateTypCd	identification of when a given event occurred
2.	creation	001	date identifies when the resource was brought into existence
3.	publication	002	date identifies when the resource was issued
4.	revision	003	date identifies when the resource was examined and improved or amended
5.	**reference**	**004**	**date identifies when the resource was referenced or accessed**

Table 9. CI_RoleCode «CodeList»

	Name	*Domain code*	*Definition*
1.	CI_RoleCode	RoleCd	function performed by the responsible party
2.	resourceProvider	001	party that supplies the resource
3.	custodian	002	party that accepts accountability and responsibility for the data and ensures appropriate care and maintenance of the resource
4.	owner	003	party that owns the resource
5.	user	004	party who uses the resource
6.	distributor	005	party who distributes the resource
7.	originator	006	party who created the resource
8.	pointOfContact	007	party who can be contacted for acquiring knowledge about or acquisition of the resource
9.	principalInvestigator	008	key party responsible for gathering information and conducting research
10.	processor	009	party who has processed the data in a manner such that the resource has been modified
11.	publisher	010	party who published the resource
12.	author	011	party who authored the resource

Table 10. MD_KeywordTypeCode «CodeList» (including amendment)

	Name	*Domain code*	*Definition*
1.	MD_KeywordTypeCode	KeyTypCd	methods used to group similar keywords
2.	discipline	001	keyword identifies a branch of instruction or specialised learning
3.	place	002	keyword identifies a location
4.	stratum	003	keyword identifies layer(s) of any deposited substance
5.	temporal	004	keyword identifies a time period related to the dataset
6.	theme	005	keyword identifies a particular subject or topic
7.	**dataCentre**	**006**	**keyword identifies a repository or archive that manages and distributes data (from ISO/DIS 19115-1:2013)**

Table 11. MD_RestrictionCode «CodeList»

	Name	*Domain code*	*Definition*
1.	MD_RestrictionCode	RestrictCd	limitation(s) placed upon access or use of the data
2.	copyright	001	exclusive right to the publication, production, or sale of the rights to a literary, dramatic, musical or artistic work, or to the use of a commercial print or label, granted by law for a specified period of time to an author, composer, artist or distributor
3.	patent	002	government has granted exclusive right to make, sell, use or license an invention or discovery
4.	patentPending	003	produced or sold information awaiting a patent
5.	trademark	004	a name, symbol, or other device identifying a product, officially registered and legally restricted to the use of the owner or manufacturer
6.	license	005	formal permission to do something
7.	intellectualPropertyRights	006	Rights to financially benefit from and control of distribution of non-tangible property that is the result of creativity
8.	restricted	007	Withheld from general circulation or disclosure
9.	otherRestrictions	008	limitation not listed

Table 12. MD_ScopeCode «CodeList»

	Name	*Domain code*	*Definition*
1.	MD_ScopeCode	ScopeCd	class of information to which the referencing entity applies
2.	attribute	001	information applies to the attribute class
3.	attributeType	002	information applies to the characteristic of a feature
4.	collectionHardware	003	information applies to the collection hardware class
5.	collectionSession	004	information applies to the collection session
6.	dataset	005	information applies to the dataset
7.	series	006	information applies to the series
8.	nonGeographicDataset	007	information applies to non-geographic data
9.	dimensionGroup	008	information applies to a dimension group
10.	feature	009	information applies to a feature
11.	featureType	010	information applies to a feature type
12.	propertyType	011	information applies to a property type

	Name	*Domain code*	*Definition*
13.	fieldSession	012	information applies to a field session
14.	software	013	information applies to a computer programme or routine
15.	service	014	information applies to a capability which a service provider entity makes available to a service user entity through a set of interfaces that define a behaviour, such as a use case
16.	model	015	information applies to a copy or imitation of an existing or hypothetical object
17.	tile	016	information applies to a tile, a spatial subset of geographic data

Table 13. MD_TopicCategoryCode «Enumeration»

	Name	*Domain code*	*Definition*
1.	MD_TopicCategoryCode	TopicCatCd	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. NOTE It is understood there are overlaps between general categories and the user is encouraged to select the one most appropriate.
2.	farming	001	rearing of animals and/or cultivation of plants Examples: agriculture, plantations, herding, pests and diseases affecting crops and livestock
3.	biota	002	flora and/or fauna in natural environment Examples: wildlife, vegetation, biological sciences, ecology, sea-life, habitat
4.	boundaries	003	legal land descriptions Examples: political and administrative boundaries
5.	climatologyMeteorologyAtmosphere	004	processes and phenomena of the atmosphere Examples: weather, climate, atmospheric conditions, climate change, precipitation
6.	economy	005	economic activities, conditions and employment Examples: production, labour, revenue, commerce, industry, tourism and ecotourism, forestry, fisheries, commercial or subsistence hunting, exploration and exploitation of resources such as minerals, oil and gas
7.	elevation	006	height above or below sea level Examples: altitude, bathymetry, digital elevation models, slope, derived products
8.	environment	007	environmental resources, protection and conservation Examples: environmental pollution, waste storage and treatment, environmental impact assessment, monitoring environmental risk, nature reserves, landscape

	Name	*Domain code*	*Definition*
9.	geoscientificInformation	008	information pertaining to earth sciences Examples: geophysical features and processes, geology, minerals, sciences dealing with the composition, structure and origin of the earth's rocks, risks of earthquakes, volcanic activity, landslides, gravity information, soils, permafrost, hydrogeology, erosion
10.	health	009	health, health services, human ecology, and safety Examples: disease and illness, factors affecting health, hygiene, substance abuse, mental and physical health, health services
11.	imageryBaseMapsEarthCover	010	base maps Examples: land cover, topographic maps, imagery, unclassified images, annotations
12.	intelligenceMilitary	011	military bases, structures, activities Examples: barracks, training grounds, military transportation, information collection
13.	inlandWaters	012	inland water features, drainage systems and their characteristics Examples: rivers and glaciers, salt lakes, water utilization plans, dams, currents, floods, water quality, hydrographic charts
14.	location	013	positional information and services Examples: addresses, geodetic networks, control points, postal zones and services, place names
15.	oceans	014	features and characteristics of salt water bodies (excluding inland waters) Examples: tides, tidal waves, coastal information, reefs
16.	planningCadastre	015	information used for appropriate actions for future use of the land Examples: land use maps, zoning maps, cadastral surveys, land ownership
17.	society	016	characteristics of society and cultures Examples: settlements, anthropology, archaeology, education, traditional beliefs, manners and customs, demographic data, recreational areas and activities, social impact assessments, crime and justice, census information
18.	structure	017	man-made construction Examples: buildings, museums, churches, factories, housing, monuments, shops, towers
19.	transportation	018	means and aids for conveying persons and/or goods Examples: roads, airports/airstrips, shipping routes, tunnels, nautical charts, vehicle or vessel location, aeronautical charts, railways
20.	utilitiesCommunication	019	energy, water and waste systems and communications infrastructure and services Examples: hydroelectricity, geothermal, solar and nuclear sources of energy, water purification and distribution, sewage collection and disposal, electricity and gas distribution, data communication, telecommunication, radio, communication networks

Table 14. WMO_DataLicenseCode «CodeList»

	Name	*Domain code*	*Definition*
1.	WMO_DataLicenseCode	WMODatLicCd	WMO data license applied to the data resource – derived from WMO Resolution 40 (Cg-XII) and Resolution 25 (Cg-XIII) (http://www.wmo.int/pages/about/exchangingdata_en.html)
2.	WMOEssential	001	WMO Essential Data: free and unrestricted international exchange of basic meteorological data and products
3.	WMOAdditional	002	WMO Additional Data: free and unrestricted access to data and products exchanged under the auspices of WMO to the research and education communities for non-commercial activities. A more precise definition of the data policy may be additionally supplied within the metadata. In all cases it shall be the responsibility of the data consumer to ensure that they understand the data policy specified by the data provider – which may necessitate dialogue with the data publisher for confirmation of terms and conditions.
4.	WMOOther	003	Data identified for global distribution via WMO infrastructure (GTS/WIS) that is not covered by WMO Resolution 40 (Cg-XII) and Resolution 25 (Cg-XIII), e.g. aviation OPMET data. Data marked with "WMOOther" data policy shall be treated like "WMOAdditional" where a more precise definition of the data policy may be additionally supplied within the metadata. In all cases it shall be the responsibility of the data consumer to ensure that they understand the data policy specified by the data provider – which may necessitate dialogue with the data publisher for confirmation of terms and conditions.

Table 15. WMO_GTSProductCategoryCode «CodeList»

	Name	*Domain code*	*Definition*
1.	WMO_ GTSProductCategoryCode	WMOGTSCatCd	Product category used for prioritizing messages over the WMO GTS
2.	GTSPriority1	001	GTS Priority 1 – highest priority products
3.	GTSPriority2	002	GTS Priority 2
4.	GTSPriority3	003	GTS Priority 3
5.	GTSPriority4	004	GTS Priority 4

Table 16. WMO_CategoryCode «CodeList»

	Name	*Domain code*	*Definition*
1.	WMO_CategoryCode	WMOCatCd	additional topic categories for WMO community
2.	weatherObservations	001	weather observations
3.	weatherForecasts	002	weather forecasts
4.	meteorology	003	Meteorology
5.	hydrology	004	Hydrology
6.	climatology	005	Climatology
7.	landMeteorologyClimate	006	land meteorology and climate

	Name	*Domain code*	*Definition*
8.	synopticMeteorology	007	synoptic meteorology
9.	marineMeteorology	008	marine meteorology
10.	agriculturalMeteorology	009	agricultural meteorology
11.	aerology	010	Aerology
12.	marineAerology	011	marine aerology
13.	oceanography	012	Oceanography
14.	landHydrology	013	land hydrology
15.	rocketSounding	014	rocket sounding
16.	pollution	015	Pollution
17.	waterPollution	016	water pollution
18.	landWaterPollution	017	land water pollution
19.	seaPollution	018	sea pollution
20.	landPollution	019	land pollution
21.	airPollution	020	air pollution
22.	glaciology	021	Glaciology
23.	actinometry	022	Actinometry
24.	satelliteObservation	023	satellite observation
25.	airplaneObservation	024	airplane observation
26.	observationPlatform	025	observation platform

Table 17. WMO_DistributionScopeCode «CodeList»

	Name	*Domain code*	*Definition*
1.	WMO_DistributionScopeCode	WMODisScoCd	Scope of distribution for data published for exchange within WIS
2.	GlobalExchange	001	Data are published for global exchange via WIS. Data shall be incorporated into the GISC cache.
3.	RegionalExchange	002	Data are published for regional exchange via a GISC.
4.	OriginatingCentre	003	Data are published for exchange directly via the originating centre.