

# **Marine Community Profile of ISO 19115**

**Version 1.4**

2008-10-30



## Table of Contents

<b>Revision History .....</b>	<b>iv</b>
<b>1. Overview .....</b>	<b>1</b>
<b>2. Marine Community Profile Extension to ISO 19115 .....</b>	<b>3</b>
2.1 Introduction .....	3
2.2 Metadata for geographic data .....	3
2.3 Metadata packages .....	4
2.4 Package descriptions .....	4
2.4.1 Metadata entity set information (MD_Metadata) .....	4
2.4.2 Identification information (MD_Identification) .....	5
2.4.3 Constraint information (MD_Constraints) .....	5
2.4.4 Data quality information (DQ_DataQuality).....	5
2.4.5 Maintenance information (MD_MaintenanceInformation).....	5
2.4.6 Reference system information (MD_ReferenceSystem).....	5
2.4.7 Distribution information (MD_Distribution) .....	5
2.4.8 Metadata extension information (MD_MetadataExtensionInformation) .....	6
2.5 Metadata datatypes .....	6
2.5.1 Extent information (EX_Extent) .....	6
2.5.2 Citation and responsible party information (CI_Citation and CI_ResponsibleParty) .....	6
2.6 Core metadata for geographic datasets .....	6
2.7 Unified Modelling Language (UML) diagrams .....	7
2.8 Data dictionary .....	8
2.9 Metadata extension information .....	8
<b>Annex A. Marine Community Profile – Metadata Schemas .....</b>	<b>12</b>
A.1 Metadata UML models.....	12
A.2 Metadata package UML diagrams.....	12
A.2.1 Metadata entity set information.....	12
A.2.2 Identification information.....	13
A.2.3 Constraint information .....	14
A.2.4 Data quality information .....	15
A.2.5 Maintenance information .....	16
A.2.6 Reference system information.....	17
A.2.7 Distribution information.....	18
A.2.8 Metadata extension information.....	19
A.3 Metadata data types .....	20
A.3.1 Extent information.....	20
A.3.2 Citation and responsible party information .....	21
<b>Annex B. Marine Community Profile – Data Dictionary .....</b>	<b>22</b>
B.1 Data dictionary overview .....	22
B.1.1 Introduction .....	22
B.1.2 Name/role name .....	22
B.1.3 Short name and ISO reference.....	22
B.1.4 Definition .....	22
B.1.5 Obligation/Condition.....	23
B.2 Metadata package data dictionaries.....	24
B.2.1 Metadata entity set information.....	24
B.2.2 Identification information.....	25
B.2.3 Constraint information .....	27

B.2.4	Data quality information .....	27
B.2.5	Maintenance information .....	28
B.2.6	Reference system information.....	28
B.2.7	Distribution information.....	29
B.2.8	Metadata extension information .....	29
B.3	Data type information.....	30
B.3.1	Extent information.....	30
B.3.2	Citation and responsible party information .....	32
B.4	CodeLists and Enumerations.....	35
B.4.1	ISO 19115 CodeLists and enumerations .....	35
B.4.2	Marine Profile Defined CodeLists.....	41
<b>Annex C. Marine Community Profile – Vocabularies .....</b>		<b>42</b>
C.1	Marine Community Profile Controlled Vocabularies .....	42
C.1.1	Descriptive Keywords .....	42
C.1.2	Geographic Extent Names .....	42
C.1.3	Collection Methods .....	47

## Revision History

Date	Version	Description	Author
2006-03-28	1.0	First release	Greg Reed
2006-05-01	1.1	Include changes from ISO Technical Corrigendum 1 (ISO 19115:2003 Cor. 1)	Greg Reed
2006-10-13	1.2	Correct UMLs (A.2.2, A.3.1, A.3.2). Correct name of elements (35.1, 66.1). Removed specialisations.	Greg Reed
2007-08-10	1.3	Included additional elements 398, 399, 400, 401. Minor typos corrected.	Greg Reed
2008-10-30	1.4	Add <i>description</i> element to UML at Annex A.3.1	Greg Reed

## 1. Overview

The purpose of this document is to define a marine community metadata profile and to identify the metadata required to accurately describe marine data. The Marine Community Profile is designed to support the documentation and discovery of marine geospatial datasets, recognising the data management and sharing requirements within the community.

The Marine Community Profile has been developed in accordance with the rules established by the international standard under the authority of the Australian Ocean Data Centre Joint Facility (AODCJF). The Marine Community Profile is a subset of the international standard and includes all ISO 19115 core metadata elements. In addition, the Marine Community Profile has defined supplementary elements, codelists and vocabularies to assist in the description of marine resources.

The Marine Community Profile will facilitate interoperability between the marine agencies and make it easier to find, use and share marine data.

## Contact Details

The Marine Community Profile is maintained by the AODCJF. Any comments or feedback should be directed to:

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## References

The following normative documents contain important requisite references for the application of this profile.

ISO 639-2, *Codes for the representation of names of languages — Part 2: Alpha-3 code*

ISO 3166-1, *Codes for the representation of names of countries and their subdivisions — Part 1: Country Codes*

ISO 8601:2000, *Data elements and interchange formats — Information interchange — Representation of dates and times*

ISO 8879, *Information processing — Text and office systems — Standard Generalized Markup Language (SGML)*

ISO/IEC 10646-1, *Information technology — Universal Multiple-Octet Coded Character Set (UCS) — Part 1: Architecture and Basic Multilingual Plane*

ISO 19103:2005, *Geographic information — Conceptual schema language*

ISO 19106:2004, *Geographic information — Profiles*

ISO 19107:2003, *Geographic information — Spatial schema*

ISO 19108:2002, *Geographic information — Temporal schema*

ISO 19109:2005, *Geographic information — Rules for application schema*

ISO 19110:2005, *Geographic information — Methodology for feature cataloguing*

ISO 19111:2003, Geographic information — Spatial referencing by coordinates  
ISO 19113:2002, Geographic information — Quality principles  
ISO 19115:2003, Geographic information — Metadata  
ISO 19118:2005, Geographic information — Encoding  
ISO/CD 19130. Geographic information — Sensor and data models for imagery and gridded data  
ISO/CD TS 19139, Geographic information — Metadata — XML schema implementation  
ISO/IEC 19501:2005, Information technology – Open Distributed Processing – Unified Modeling Language (UML) Version 1.4.2

## 2. Marine Community Profile Extension to ISO 19115

### 2.1 Introduction

The International Standard ISO 19115 (Geographic information – Metadata) defines almost 300 metadata elements, with most of these being listed as “optional”. The ISO standard states that individual communities may develop a “community profile” of the International Standard. A select set of metadata elements may be established as mandatory for a community of users. A community may also want to establish additional metadata elements that are not in the International Standard. A community profile should establish field sizes and domains for all metadata elements. The rules for creating a community profile are described in the International Standard Geographic Information — Profiles (ISO 19106:2004).

Marine Community Profile has extended ISO 19115 to include new elements and customised codelists to meet the need of the marine community. Figure 1 illustrates the relationship between the Core metadata components, the comprehensive metadata profile and the Marine Community Profile (adapted from ISO 19115:2003).

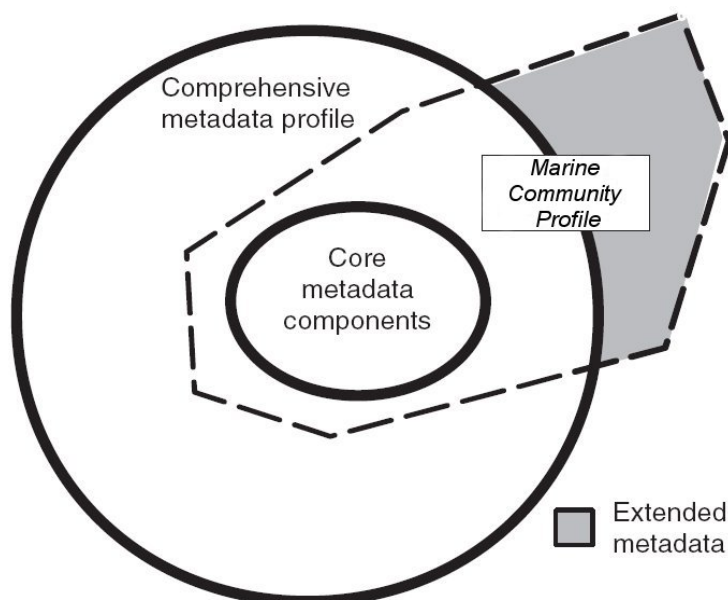


Figure 1. Metadata community profile

The inner circle contains the core metadata components. The comprehensive metadata includes the core metadata components. The Marine Community Profile contains the core metadata components, but not all the other metadata components. In addition, the Marine Community Profile contains metadata extensions (shaded area) which are defined following the metadata extension rules in ISO 19115.

### 2.2 Metadata for geographic data

ISO 19115 identifies the metadata required to describe digital geographic data. Metadata is applicable to independent datasets, aggregations of datasets, individual geographic features, and the various classes of objects that compose a feature. Metadata shall be provided for geographic datasets and may, optionally, be provided for aggregations of datasets, features,

and attributes of features. Metadata is composed of one or more Metadata Sections (UML Packages) containing one or more Metadata Entities (UML classes).

## 2.3 Metadata packages

ISO 19115 presents metadata for geographic data in UML Packages. Each package contains one or more entities (UML Classes), which can be specified (subclassed) or generalized (superclassed). Entities contain elements (UML class attributes) which identify the discrete units of metadata. Entities may be related to one or more other entities. Entities can be aggregated and repeated as necessary to meet: (1) the mandatory requirements stated in this International Standard; (2) additional user requirements.

The Marine Community Profile metadata is fully specified in the UML model diagrams and data dictionary for each package, which can be found in Annexes A and B respectively. If a discrepancy between the two annexes exists, Annex A shall be considered authoritative. The relationship between the metadata packages and the metadata entities is shown in the following table.

**Marine Community Profile:  
Relationship between packages of metadata and metadata entities**

Package	Entity	UML Diagram	Data Dictionary
Metadata entity set information	MD_Metadatas	A.2.1	B.2.1
Identification information	MD_Identification	A.2.2	B.2.2
Constraint information	MD_Constraints	A.2.3	B.2.3
Data quality information	DQ_DataQuality	A.2.4	B.2.4
Maintenance information	MD_MaintenanceInformation	A.2.5	B.2.5
Reference system information	MD_ReferenceSystem	A.2.6	B.2.6
Distribution information	MD_Distribution	A.2.7	B.2.7
Metadata extension information	MD_MetadataExtensionInformation	A.2.8	B.2.8
Extent information	EX_Extent	A.3.1	B.3.1
Citation and responsible party information	CI_Citation CI_ResponsibleParty	A.3.2	B.3.2

## 2.4 Package descriptions

### 2.4.1 Metadata entity set information (MD\_Metadatas)

Metadata entity set information consists of the entity (UML class) MD\_Metadatas, which is mandatory. The MD\_Metadatas entity contains both mandatory and optional metadata elements (UML attributes). The MD\_Metadatas entity is an aggregate of the following entities:

- MD\_Identification
- MD\_Constraints
- DQ\_DataQuality
- MD\_MaintenanceInformation
- MD\_ReferenceSystem
- MD\_Distribution
- MD\_MetadataExtensionInformation

#### **2.4.2 Identification information (MD\_Identification)**

Identification information contains information to uniquely identify the data. Identification information includes information about the citation for the resource, an abstract, the purpose, credit, the status and points of contact. The MD\_Identification entity is mandatory.

The extent element of MD\_DataIdentification is conditional; either the EX\_GeographicBoundingBox or the EX\_GeographicDescription subclass of extent's geographicElement Role shall be included if the resource is a dataset. If necessary both may be used.

The characterSet element of MD\_DataIdentification is conditional; it is documented if ISO/IEC 10646-1 is not used.

The Marine Community Profile extension contains a statement about sampling frequency.

#### **2.4.3 Constraint information (MD\_Constraints)**

Constraint information contains information concerning the restrictions placed on data. The MD\_Constraints entity is optional and may be specified as MD\_LegalConstraints and/or MD\_SecurityConstraints.

The otherConstraint element of MD\_LegalConstraints shall be used only if accessConstraints and/or useConstraints elements have a value of "otherRestrictions", which is found in the MD\_RestrictionCode codelist.

#### **2.4.4 Data quality information (DQ\_DataQuality)**

The data quality package contains a general assessment of the quality of the dataset. The DQ\_DataQuality entity is optional and contains the scope of the quality assessment. DQ\_DataQuality is an aggregate of LI\_Lineage.

The LI\_Lineage entity is optional and contains a statement about the lineage. The "statement" element is mandatory if DQ\_DataQuality.scope.DQ\_Scope.level has a value of "dataset" or "series".

#### **2.4.5 Maintenance information (MD\_MaintenanceInformation)**

The maintenance package contains information about the frequency of updating data. The MD\_MaintenanceInformation entity is optional and contains one mandatory metadata element.

#### **2.4.6 Reference system information (MD\_ReferenceSystem)**

The reference system package contains the identification of the spatial and temporal reference system(s) used in a dataset.

#### **2.4.7 Distribution information (MD\_Distribution)**

The distribution information package contains the distributor of, and options for obtaining, a resource. It contains the optional MD\_Distribution entity. MD\_Distribution is an aggregate of the options for the digital distribution of a dataset (MD\_DigitalTransferOptions), identification of the distributor (MD\_Distributor) and the format of the distribution (MD\_Format).

The “distributionFormat” role of MD\_Distribution is mandatory if the “distributorFormat” role of MD\_Distributor is not documented. The “distributorFormat” role of MD\_Distributor is mandatory if the “distributionFormat” role of MD\_Distribution is not documented.

#### **2.4.8 Metadata extension information (MD\_MetadataExtensionInformation)**

The metadata extension information package contains the specified community extensions. It contains the optional MD\_MetadataExtensionInformation entity.

MD\_MetadataExtensionInformation is an aggregate of information describing the extended metadata elements (MD\_ExtendedElementInformation).

If the “dataType” element of MD\_ExtendedElementInformation does not have a value of ‘codelist’, ‘enumeration’ or ‘codelistElement’; then the “obligation”, “maximumOccurrence” and “domainValue” elements are mandatory.

If the “dataType” element of MD\_ExtendedElementInformation does not have a value of ‘codelistElement’, then the “shortName” element is mandatory.

If the “obligation” element of MD\_ExtendedElementInformation has a value of ‘conditional’, then the “condition” element is mandatory.

### **2.5 Metadata datatypes**

#### **2.5.1 Extent information (EX\_Extent)**

The datatype in this package is an aggregate of the metadata elements that describe the spatial and temporal extent of the referring entity. The EX\_Extent entity contains information about the vertical (EX\_VerticalExtent) extent of the referring entity. The The Marine Community Profile extension, has two conditional roles, “geographicElement” and “temporalElement”, which are required for datasets. EX\_GeographicExtent can be subclassed as EX\_BoundingPolygon, EX\_GeographicBoundingBox or EX\_GeographicDescription.

#### **2.5.2 Citation and responsible party information (CI\_Citation and CI\_ResponsibleParty)**

This package of datatypes provides a standardized method (CI\_Citation) for citing a resource (dataset, feature, source, publication, etc.), as well as information about the party responsible (CI\_ResponsibleParty) for a resource. The CI\_ResponsibleParty datatype contains the identity of person(s), and/or position, and/or organization(s) associated with the resource. The location (CI\_Address) of the responsible person or organization is also defined here.

Note: DataType is a descriptor of a set of values that lack identity and whose operations do not have side effects. Datatypes include primitive pre-defined types and user-definable types. Pre-defined types include numbers, string, and time. User-definable types include enumerations.

### **2.6 Core metadata for geographic datasets**

ISO 19115 defines an extensive set of metadata elements. The Marine Community Profile uses only a subset of the full number of these elements and has defined the minimum number of metadata elements required to describe a marine dataset. These core metadata elements are required to identify a dataset, typically for catalogue purposes and contains

metadata elements answering the following questions: “Does a dataset on a specific topic exist (‘what’)?”, “For a specific place (‘where’)?”, “For a specific date or period (‘when’)?” and “A point of contact to learn more about or order the dataset (‘who’)?”. Using the recommended optional elements in addition to the mandatory elements will increase interoperability, allowing users to understand without ambiguity the data and the related metadata provided by either the producer or the distributor. The Marine Community Profile includes the core metadata elements defined in ISO 19115.

Listed below are the core metadata elements required for describing a dataset using the Marine Community Profile. “M” indicates that the element is mandatory; “O” indicates that the element is optional; “C” indicates that the element is mandatory under certain conditions.

### Core metadata for marine geographic datasets

<b>Dataset title (M)</b> (MD_Metadata > MD_Identification.citation > CI_Citation.title)	<b>Spatial representation type (O)</b> (MD_Metadata > MD_DataIdentification.spatialRepresentationType)
<b>Dataset reference date (M)</b> (MD_Metadata > MD_Identification.citation > CI_Citation.date)	<b>Reference system (O)</b> (MD_Metadata > MD_ReferenceSystem)
<b>Dataset responsible party (O)</b> (MD_Metadata > MD_Identification.pointOfContact > CI_ResponsibleParty)	<b>Lineage (O)</b> (MD_Metadata > DQ_DataQuality.lineage > LI_Lineage)
<b>Geographic location of the dataset (by four coordinates) (M)</b> (MD_Metadata > MD_DataIdentification.extent > EX_Extent > EX_GeographicExtent > EX_GeographicBoundingBox)	<b>Additional extent information for the dataset (temporal) (C)</b> (MD_Metadata > MD_DataIdentification.extent > EX_Extent > EX_TemporalExtent)
<b>Spatial resolution (O)</b> (MD_Metadata > MD_DataIdentification.spatialResolution > MD_Resolution.equivalentScale)	<b>On-line resource (O)</b> (MD_Metadata > MD_Distribution > MD_DigitalTransferOption.onLine > CI_OnlineResource)
<b>Dataset language (M)</b> (MD_Metadata > MD_DataIdentification.language)	<b>Metadata file identifier (M)</b> (MD_Metadata.fileIdentifier)
<b>Dataset character set (C)</b> (MD_Metadata > MD_DataIdentification.characterSet)	<b>Metadata standard name (O)</b> (MD_Metadata.metadataStandardName)
<b>Dataset topic category (C)</b> (MD_Metadata > MD_DataIdentification.topicCategory)	<b>Metadata standard version (O)</b> (MD_Metadata.metadataStandardVersion)
<b>Metadata language (C)</b> (MD_Metadata.language)	<b>Metadata character set (C)</b> (MD_Metadata.characterSet)
<b>Metadata date stamp (M)</b> (MD_Metadata.dateStamp)	<b>Abstract describing the dataset (M)</b> (MD_Metadata > MD_Identification.abstract)
<b>Distribution format (M)</b> (MD_Metadata > MD_Distribution > MD_Format.name and MD_Format.version)	<b>Metadata point of contact (M)</b> (MD_Metadata.contact > CI_ResponsibleParty)

## 2.7 Unified Modelling Language (UML) diagrams

Annex A provides the metadata schemas in the form of Unified Modelling Language (UML) diagrams. These diagrams, in conjunction with the data dictionary presented in Annex B, serve to fully define the total abstract model for metadata.

## 2.8 Data dictionary

Annex B contains the element and entity definitions for the metadata schemas. This dictionary, in conjunction with the diagrams presented in Annex A, serve to fully define the total abstract model for metadata.

## 2.9 Metadata extension information

The following tables describe the Marine Community Profile extension to ISO 19115. The tables include the ISO 19115 element name and contain values for each metadata element defining the extensions.

MD_MetadataExtensionInformation		
MD_MetadataElementInformation		
<b>name</b>	fileIdentifier	
<b>shortName</b>	mdFileId	
<b>definition</b>	Existing ISO 19115 element (2)	
<b>obligation</b>	mandatory	
<b>condition</b>		
<b>dataType</b>	characterString	
<b>maximumOccurrence</b>	1	
<b>domainValue</b>	free text	
<b>parentEntity</b>	MD_Metadata	
<b>rule</b>	Change obligation to mandatory	
<b>rationale</b>	To ensure a file identifier is always entered	
<b>source</b>	<b>organisationName</b>	Australian Ocean Data Centre Joint Facility
	<b>role</b>	owner

MD_MetadataExtensionInformation		
MD_MetadataElementInformation		
<b>name</b>	revisionDate	
<b>shortName</b>	revDate	
<b>definition</b>	Date the metadata was last revised.	
<b>obligation</b>	optional	
<b>condition</b>		
<b>dataType</b>	class	
<b>maximumOccurrence</b>	1	
<b>domainValue</b>	date	
<b>parentEntity</b>	MD_Metadata	
<b>rule</b>	New element	
<b>rationale</b>	To describe the date when the metadata was revised. This element will default to dateStamp.	
<b>source</b>	<b>organisationName</b>	Australian Ocean Data Centre Joint Facility
	<b>role</b>	owner

MD_MetadataExtensionInformation		
MD_MetadataElementInformation		
<b>name</b>	samplingFrequency	

<b>shortName</b>	sampFreq	
<b>definition</b>	Describes the frequency with which the resource is sampled	
<b>obligation</b>	optional	
<b>condition</b>		
<b>dataType</b>	characterString	
<b>maximumOccurrence</b>	1	
<b>domainValue</b>	MD_MaintenanceFrequencyCode	
<b>parentEntity</b>	MD_DataIdentification	
<b>rule</b>	New element	
<b>rationale</b>	To describe the frequency of the sampled resource.	
<b>source</b>	<b>organisationName</b>	Australian Ocean Data Centre Joint Facility
	<b>role</b>	owner

<b>MD_MetadataExtensionInformation</b>		
<b>MD_MetadataElementInformation</b>		
<b>name</b>	geographicElement	
<b>shortName</b>	geoEle	
<b>definition</b>	Existing ISO 19115 class (336)	
<b>obligation</b>	conditional	
<b>condition</b>	hierarchyLevel = 'dataset'	
<b>dataType</b>	association	
<b>maximumOccurrence</b>	1	
<b>domainValue</b>	EX_GeographicExtent	
<b>parentEntity</b>	MD_Extent	
<b>rule</b>	Change condition. If resource is a dataset then element is required.	
<b>rationale</b>	To ensure geographic extent is recorded for a dataset.	
<b>source</b>	<b>organisationName</b>	Australian Ocean Data Centre Joint Facility
	<b>role</b>	owner

<b>MD_MetadataExtensionInformation</b>		
<b>MD_MetadataElementInformation</b>		
<b>name</b>	temporalElement	
<b>shortName</b>	tempEle	
<b>definition</b>	Existing ISO 19115 class (337)	
<b>obligation</b>	conditional	
<b>condition</b>	hierarchyLevel = 'dataset'	
<b>dataType</b>	association	
<b>maximumOccurrence</b>	N	
<b>domainValue</b>	EX_TemporalExtent	
<b>parentEntity</b>	MD_Extent	
<b>rule</b>	Change condition. If resource is a dataset then element is required	
<b>rationale</b>	To ensure temporal extent is recorded for a dataset	
<b>source</b>	<b>organisationName</b>	Australian Ocean Data Centre Joint Facility
	<b>role</b>	owner

<b>MD_MetadataExtensionInformation</b>		
<b>MD_MetadataElementInformation</b>		
<b>name</b>	currency	

<b>shortName</b>	exCurr	
<b>definition</b>	Describes the temporal currency of the resource	
<b>obligation</b>	optional	
<b>condition</b>		
<b>dataType</b>	characterString	
<b>maximumOccurrence</b>	1	
<b>domainValue</b>	MD_CurrencyTypeCode	
<b>parentEntity</b>	MD_TemporalExtent	
<b>rule</b>	New element	
<b>rationale</b>	To describe the temporal currency of the resource.	
<b>source</b>	<b>organisationName</b>	Australian Ocean Data Centre Joint Facility
	<b>role</b>	owner

<b>MD_MetadataExtensionInformation</b>		
<b>MD_MetadataElementInformation</b>		
<b>name</b>	temporalAggregation	
<b>shortName</b>	exTempAggr	
<b>definition</b>	Describes the temporal aggregation of the resource	
<b>obligation</b>	optional	
<b>condition</b>		
<b>dataType</b>	characterString	
<b>maximumOccurrence</b>	1	
<b>domainValue</b>	MD_TemporalAggregationUnitCode	
<b>parentEntity</b>	MD_TemporalExtent	
<b>rule</b>	New element	
<b>rationale</b>	To describe the temporal aggregation of the resource, for example, day, week, month.	
<b>source</b>	<b>organisationName</b>	Australian Ocean Data Centre Joint Facility
	<b>role</b>	owner

<b>MD_MetadataExtensionInformation</b>		
<b>MD_MetadataElementInformation</b>		
<b>name</b>	MD_CurrencyTypeCode	
<b>shortName</b>		
<b>definition</b>	Defines the temporal currency of the resource	
<b>obligation</b>		
<b>condition</b>		
<b>dataType</b>	codelist	
<b>maximumOccurrence</b>		
<b>domainValue</b>		
<b>parentEntity</b>	MD_TemporalExtent.currencyType	
<b>rule</b>	Codelist to describe the temporal currency of the resource.	
<b>rationale</b>	New codelist to describe the temporal currency type. As many resources are dynamic in nature this code will identify the most recent, historical or predicted data.	
<b>source</b>	<b>organisationName</b>	Australian Ocean Data Centre Joint Facility
	<b>role</b>	owner

<b>MD_MetadataExtensionInformation</b>		
<b>MD_MetadataElementInformation</b>		
<b>name</b>	MD_TemporalAggregationUnitCode	
<b>shortName</b>		
<b>definition</b>	Temporal unit to which the resource has been aggregated.	
<b>obligation</b>		
<b>condition</b>		
<b>dataType</b>	codelist	
<b>maximumOccurrence</b>		
<b>domainValue</b>		
<b>parentEntity</b>	MD_TemporalExtent.temporalAggregation	
<b>rule</b>	Codelist to describe the temporal aggregation of the resource	
<b>rationale</b>	New codelist to describe the temporal aggregation of the dataset, such as day, multi-day, week, etc.	
<b>source</b>	<b>organisationName</b>	Australian Ocean Data Centre Joint Facility
	<b>Role</b>	owner

## Annex A.

### Marine Community Profile – Metadata Schemas

#### A.1 Metadata UML models

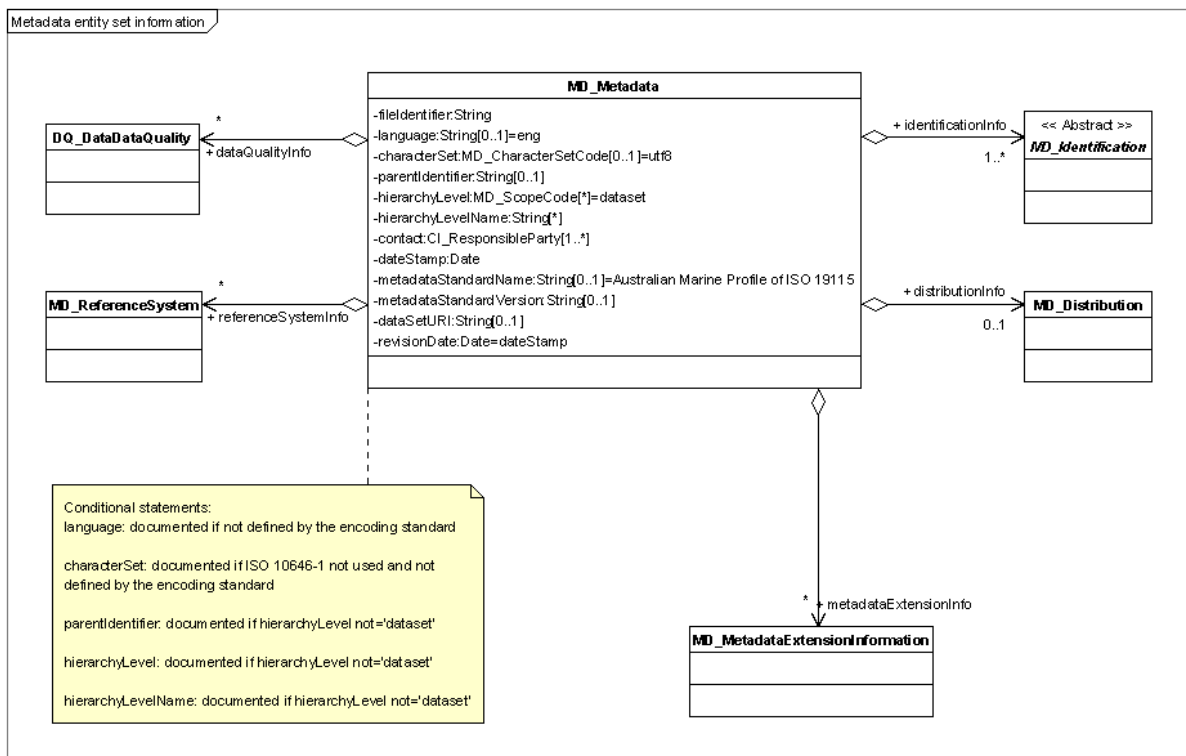
Metadata for describing geographic data is defined using an abstract object model in the Unified Modelling Language (UML). The following diagrams provide “views,” which are portions of the total abstract model for metadata. Each diagram defines a metadata section (UML package) of related entities, elements, data types, and code lists. Related entities, which are defined in another diagram, are shown with elements suppressed and the defining package specified under the entity name in parenthesis. Throughout the following models, entities may have mandatory and/or optional elements and associations. In some cases, optional entities may have mandatory elements; those elements become mandatory only if the optional element is used.

The data dictionary for the UML class diagrams is listed in Annex B.

#### A.2 Metadata package UML diagrams

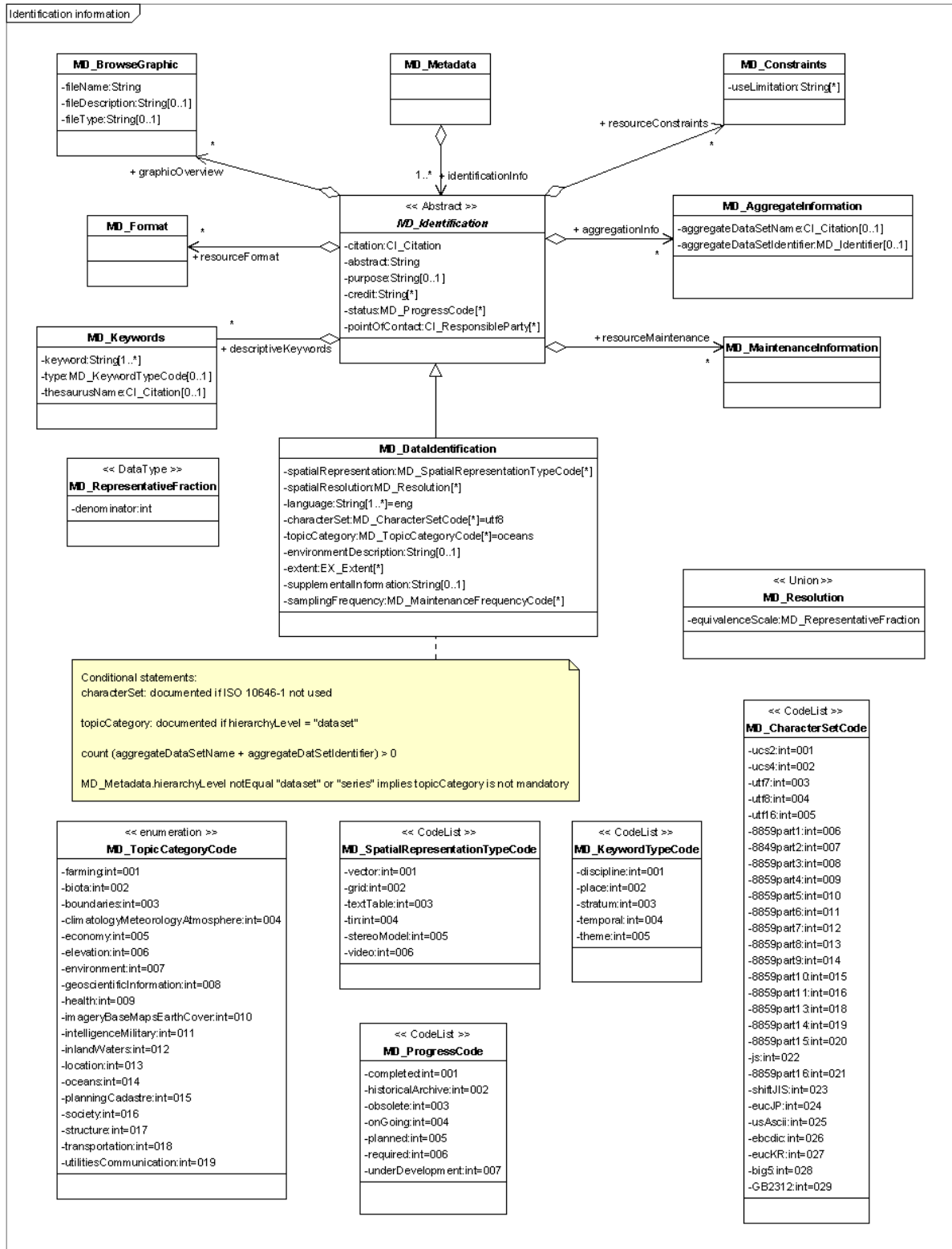
##### A.2.1 Metadata entity set information

The *MD\_Metadata* class shows containment relationships with the other metadata classes which define metadata for geospatial data. Refer to B.2.1 for the data dictionary for this diagram.



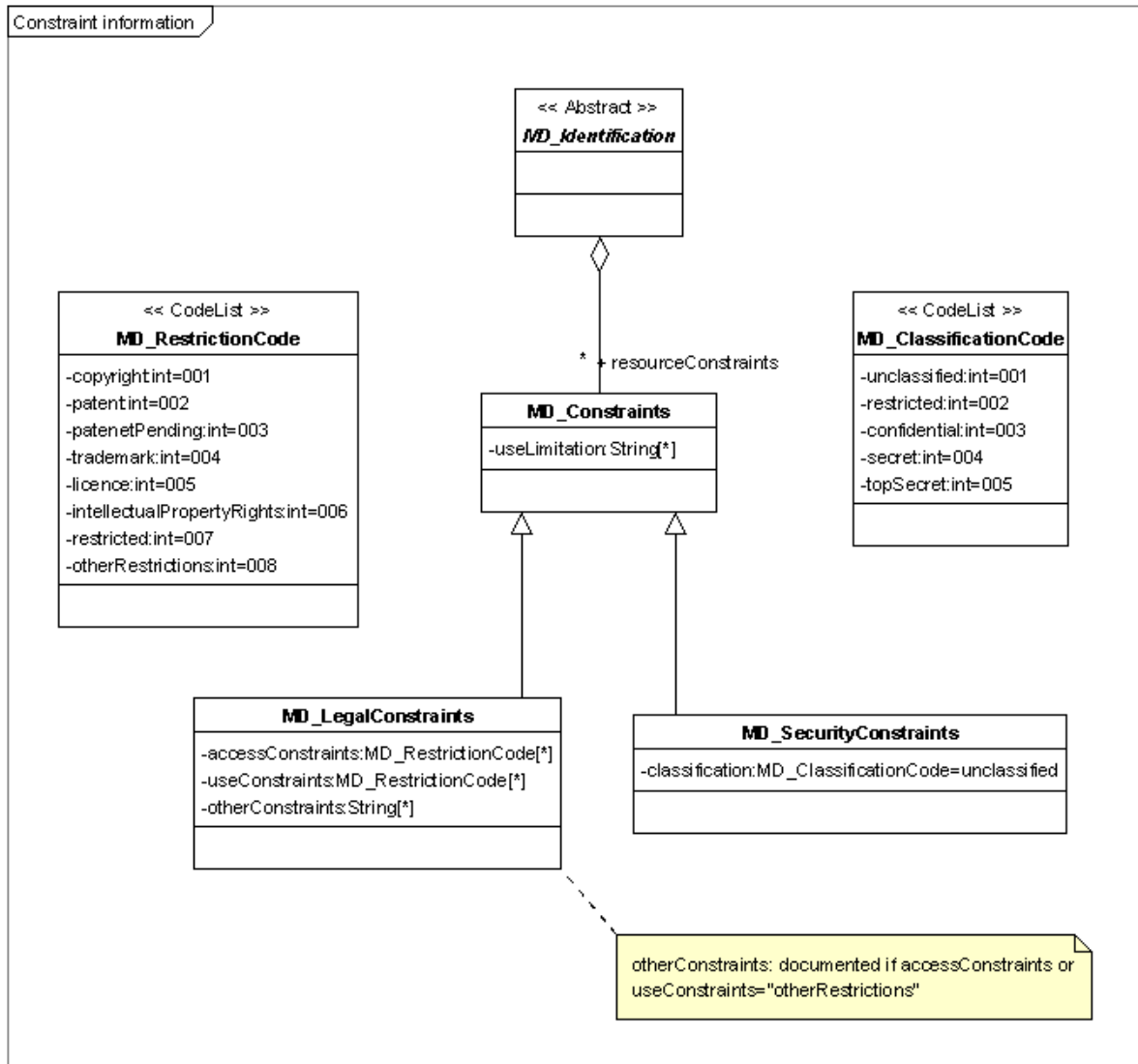
## A.2.2 Identification information

The UML for identification information defines the metadata classes required to identify a resource. It also defines separate specialisation sub-classes for identifying data and services. Refer to B.2.2 for the data dictionary for this diagram.



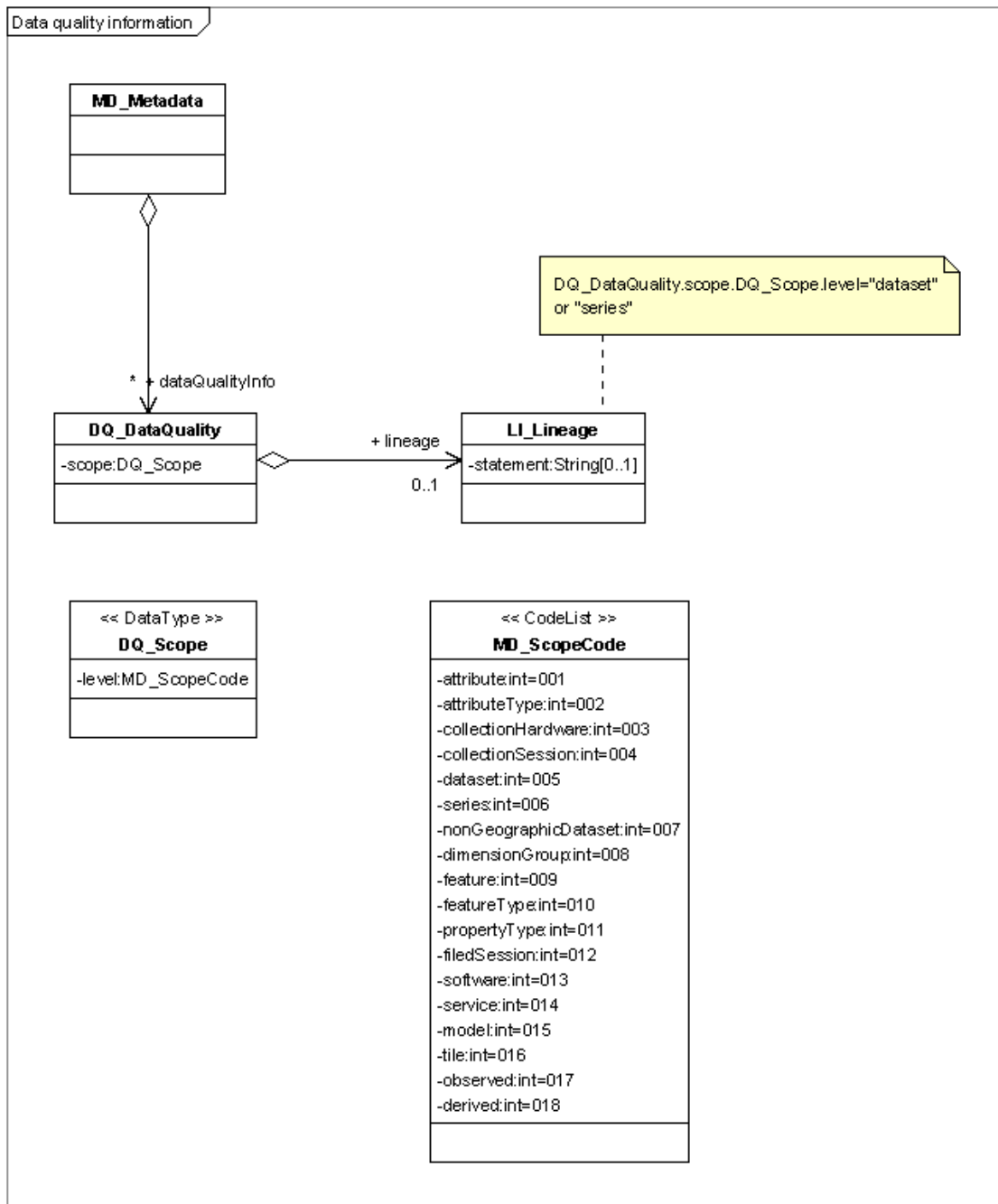
### A.2.3 Constraint information

The UML for constraint information defines the metadata required for managing rights to information including restrictions on access and use. Refer to B.2.3 for the data dictionary for this diagram.



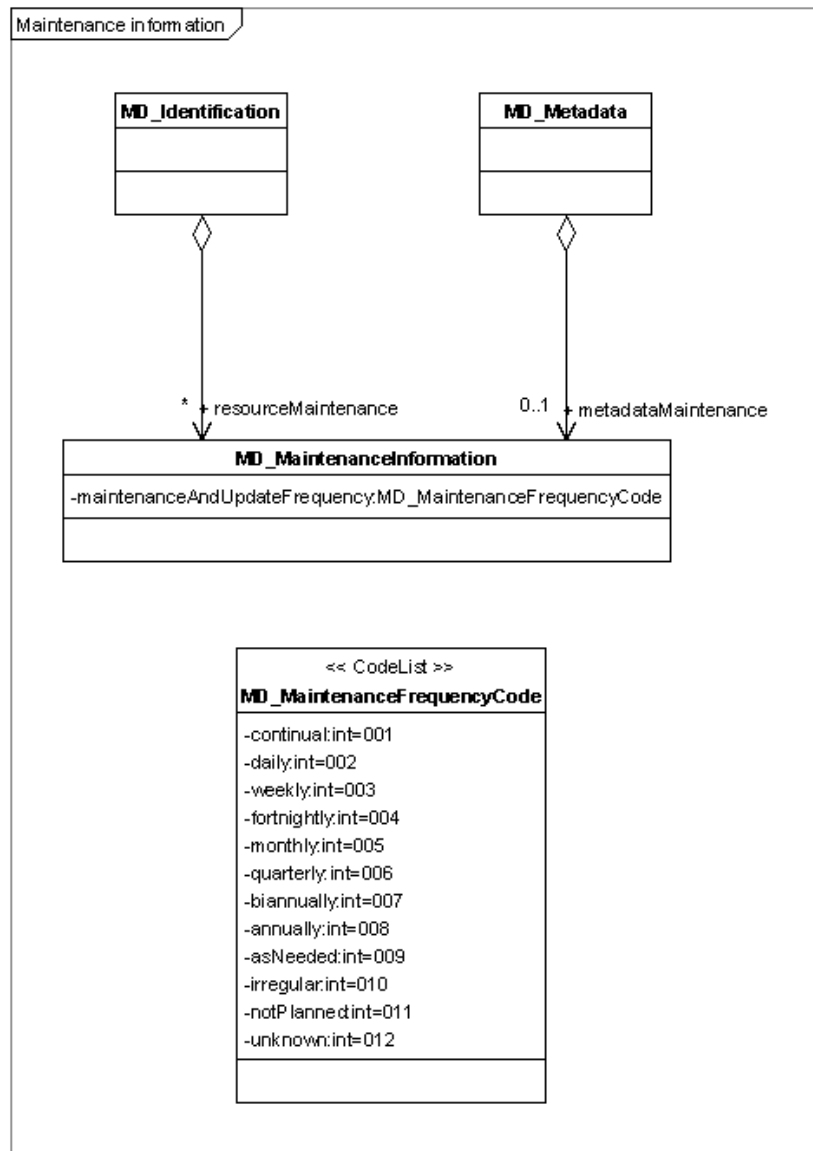
## A.2.4 Data quality information

The UML for data quality information defines the metadata required to give a general assessment of the quality of a resource. Refer to B.2.4 for the data dictionary for this diagram.



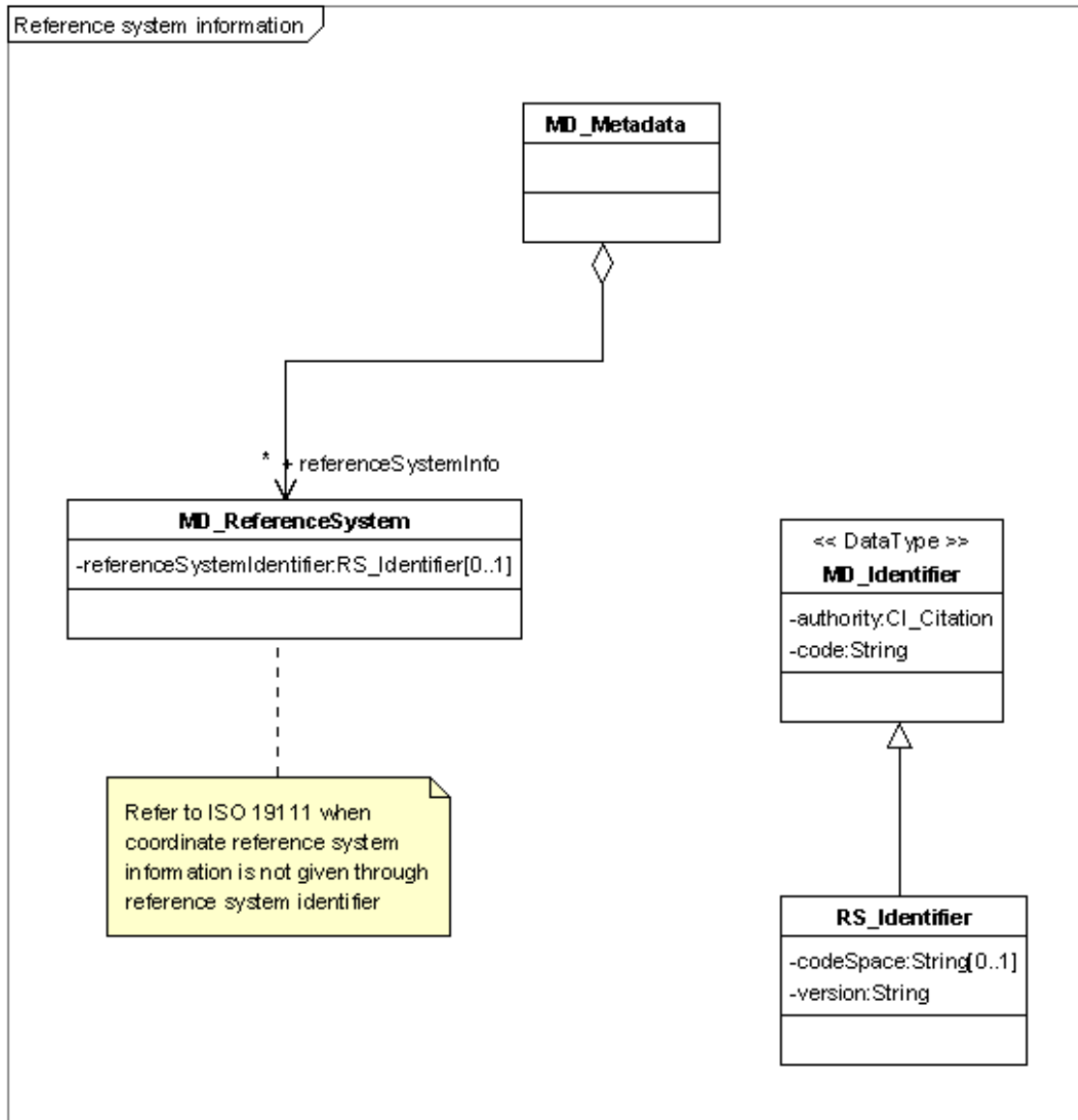
## A.2.5 Maintenance information

The UML for maintenance information defines the metadata required to describe the maintenance and update practices used. Refer to B.2.5 for the data dictionary for this diagram.



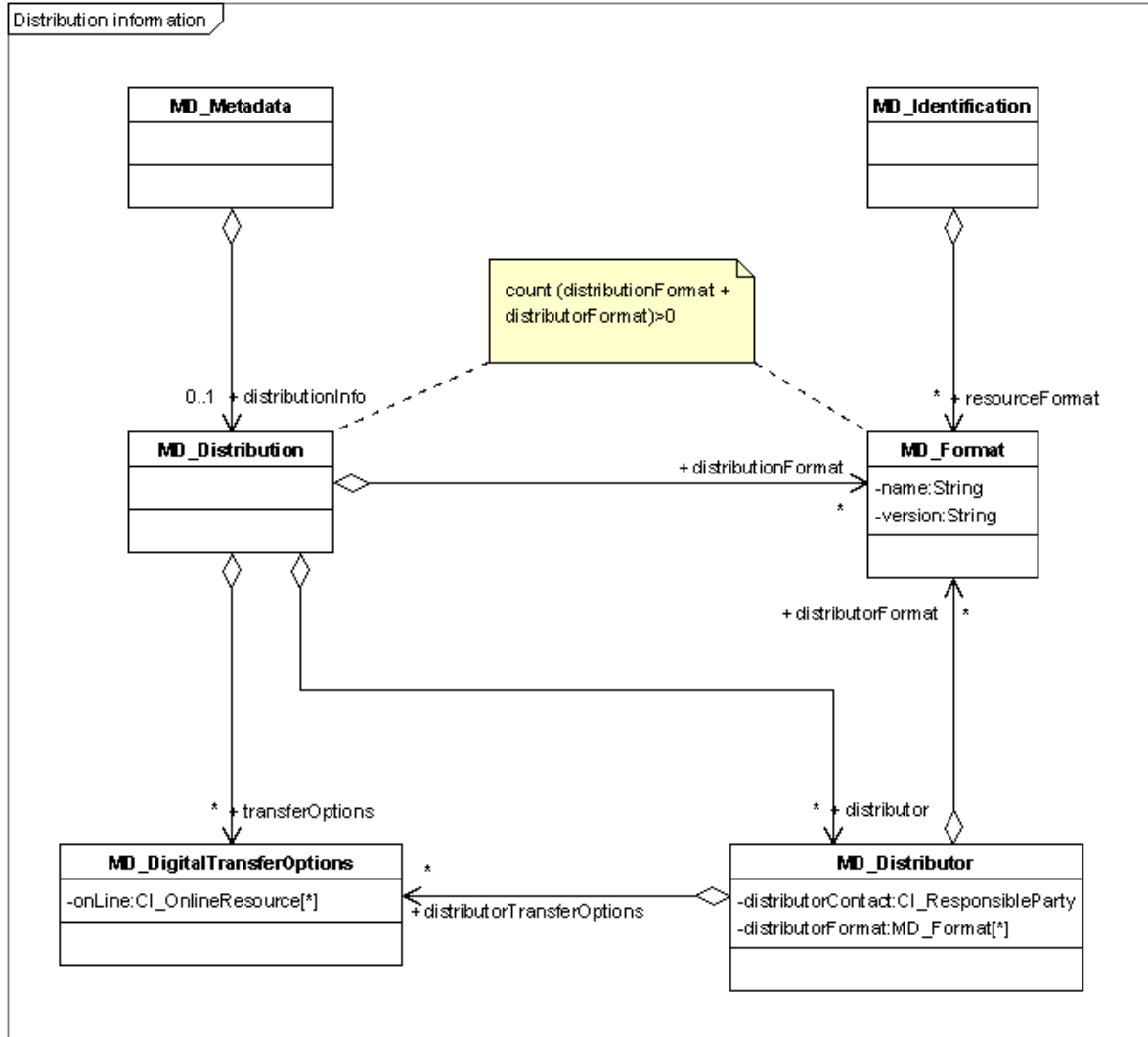
## A.2.6 Reference system information

The UML for reference system information defines the metadata required to describe the spatial and temporal system used. Refer to B.2.6 for the data dictionary for this diagram.



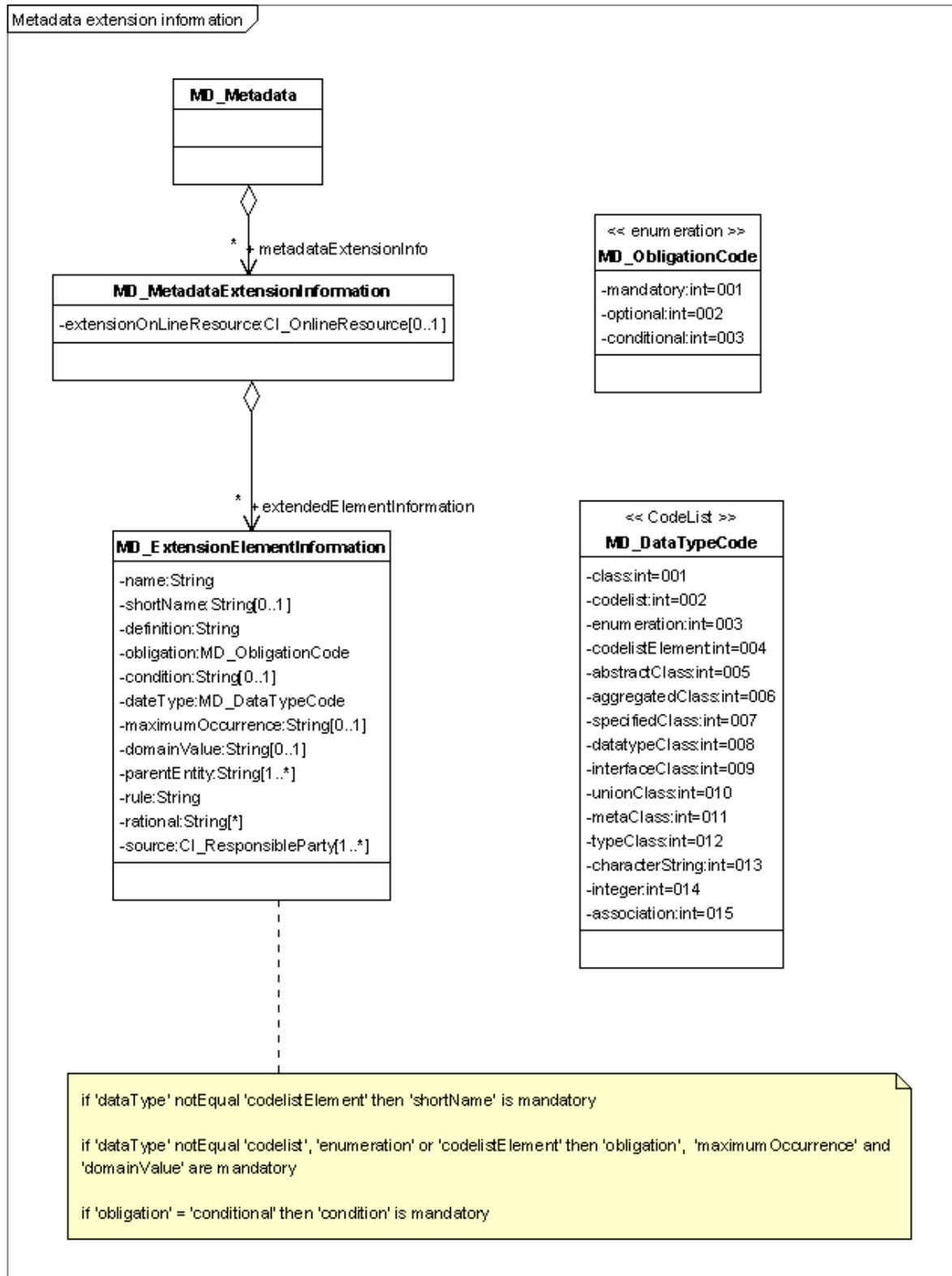
## A.2.7 Distribution information

The UML for distribution information defines the metadata required for accessing a resource. Refer to B.2.7 for the data dictionary for this diagram.



## A.2.8 Metadata extension information

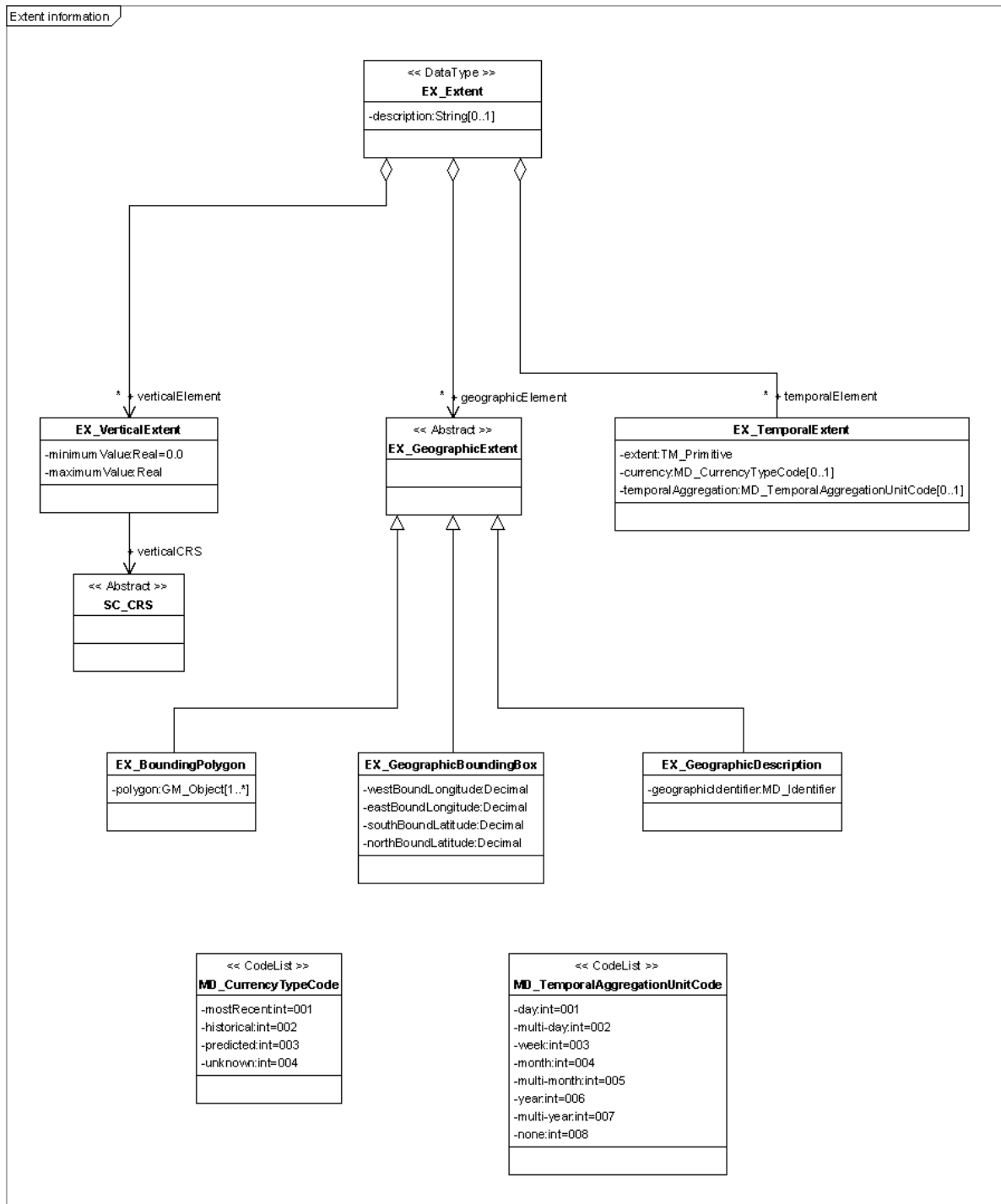
The UML for metadata extension information defines the extended metadata elements. Refer to B.2.8 for the data dictionary for this diagram.



### A.3 Metadata data types

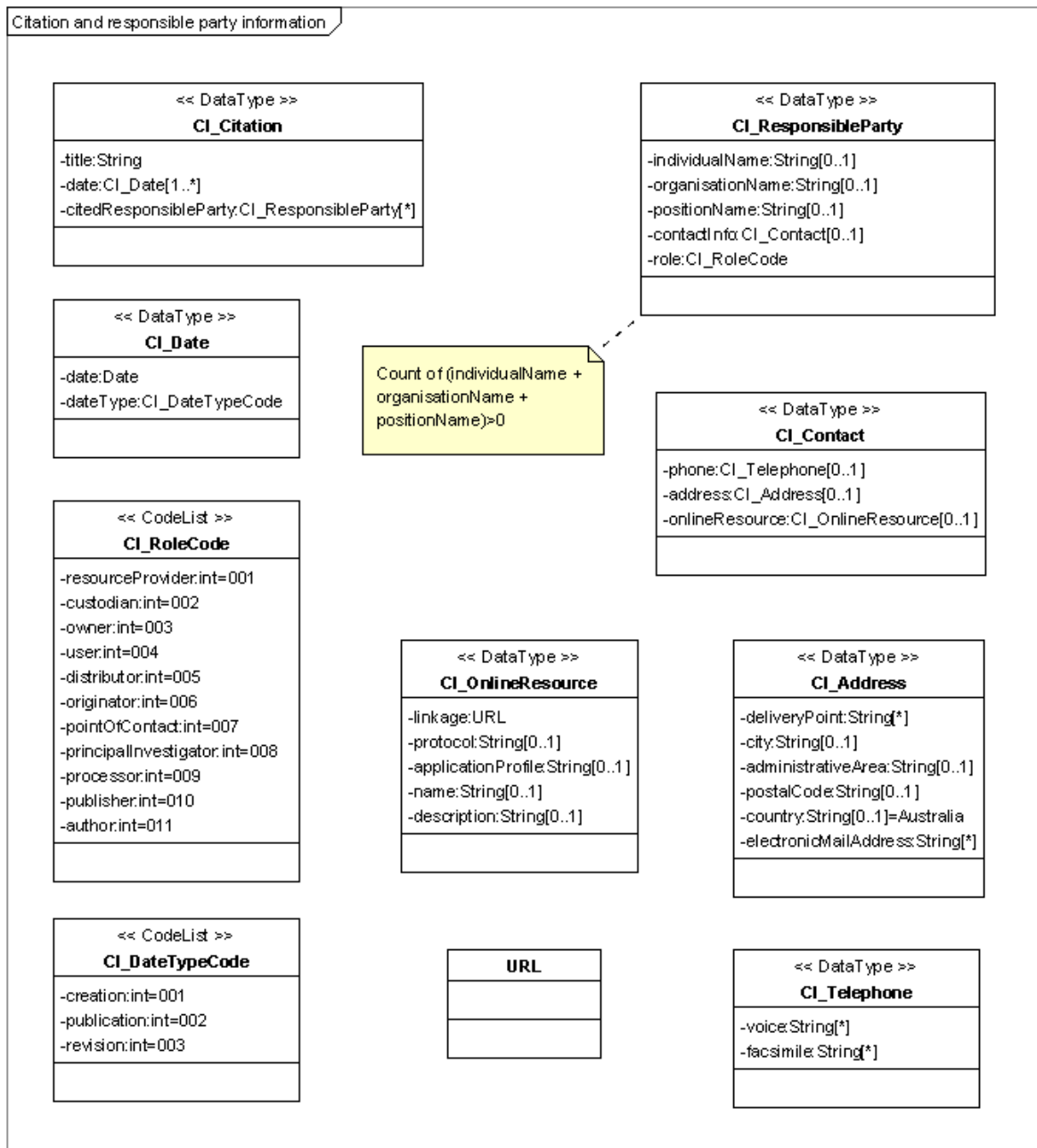
#### A.3.1 Extent information

The UML for extent information defines the metadata describing the spatial and temporal extent covered by a resource. Refer to B.3.1 for the data dictionary for this diagram.



### A.3.2 Citation and responsible party information

The UML for citation information defines the metadata describing the authoritative reference information, including responsible party and contact information. Refer to B.3.2 for the data dictionary for this diagram.



## Annex B.

### Marine Community Profile – Data Dictionary

#### B.1 Data dictionary overview

##### B.1.1 Introduction

The data dictionary describes the characteristics of the metadata defined by the UML model in Annex A. The dictionary is categorised into sections by UML model package diagram: Metadata Entity Set, Identification, Constraints, Data Quality, Maintenance, Reference System, Distribution, Metadata Extension, Extent, Citation and Responsible Party. The clause titles of several of the tables have been expanded to reflect class specification within the respective diagram. Each model diagram from Annex B has a section within the data dictionary.

Each UML model class equates to a data dictionary entity. Each UML model class attribute equates to a data dictionary element. The shaded rows define entities. The reference to the ISO 9115 entities and elements are shown as (334). Entities and elements referenced as (*mp1*) indicate Marine Community Profile extensions to ISO 19115.

In case of ambiguity between the data dictionary definitions and the UML class diagrams, the UML class diagrams should be treated as the authoritative source.

##### B.1.2 Name/role name

A label assigned to a metadata entity or to a metadata element. Metadata entity names start with an upper case letter. Spaces do not appear in a metadata entity name. Instead, multiple words are concatenated, with each new subword starting with a capital letter (example: XnnnYmmm). Metadata entity names are unique within the entire data dictionary of this International Standard. Metadata element names are unique within a metadata entity, not the entire data dictionary of this International Standard. Metadata element names are made unique, within an application, by the combination of the metadata entity and metadata element names (example: MD\_Metadata.characterSet). Role names are used to identify metadata abstract model associations and are preceded by "Role name:" to distinguish them from other metadata elements. Names and role names may be in a language other than that used in this International Standard.

##### B.1.3 Short name and ISO reference

Those classes that are not CodeList or Enumeration stereotypes are provided with a Short Name for each element. A naming convention similar to that used to create the longer entity and element names was used to create the short names. The number in brackets after the short name is a reference to the ISO 19115 metadata entity or metadata element.

##### B.1.4 Definition

The metadata entity/element description.

## **B.1.5 Obligation/Condition**

### **B.1.5.1 General**

This is a descriptor indicating whether a metadata entity or metadata element shall always be documented in the metadata or sometimes be documented (i.e. contains value(s)). This descriptor may have the following values: mandatory, conditional, or optional.

### **B.1.5.2 Mandatory**

The metadata entity or metadata element shall be documented.

### **B.1.5.3 Conditional**

Specifies an electronically manageable condition under which at least one metadata entity or a metadata element is mandatory. Conditional is used for one of the three following possibilities:

- Expressing a choice between two or more options. At least one option is mandatory and must be documented.
- Documenting a metadata entity or a metadata element if another element has been documented.
- Documenting a metadata element if a specific value for another metadata element has been documented. To facilitate reading by humans, the specific value is used in plain text (e.g. table in Section B.2.1, row 3 “conditional / not defined by encoding”).

If the answer to the condition is positive, then the metadata entity or the metadata element shall be mandatory.

### **B.1.5.4 Optional**

The metadata entity or the metadata element may be documented or may not be documented. Optional metadata entities and optional metadata elements have been defined to provide a guide to those looking to fully document their data. (Use of this common set of defined elements will help promote interoperability among geographic data users and producers world-wide.) If an optional entity is not used, the elements contained within that entity (including mandatory elements) will also not be used. Optional entities may have mandatory elements; those elements only become mandatory if the optional entity is used.

### **B.1.5.5 Maximum occurrence**

Specifies the maximum number of instances the metadata entity or the metadata element may have. Single occurrences are shown by “1”; repeating occurrences are represented by “N”.

## B.2 Metadata package data dictionaries

### B.2.1 Metadata entity set information

Name / Role name	Short name / ISO reference	Definition	Obligation / Condition	Max. occur.
<b>MD_Metadata</b>	Metadata (1)	defines the metadata about a resource	mandatory	1
fileIdentifier	mdFileID (2)	value is a metadata file name following naming convention defined by organisation	mandatory	1
language	mdLang (3)	language used for documenting metadata. <i>Domain: ISO 639-2</i> <i>Default value= "eng"</i>	conditional / not defined by encoding Default value	1
characterSet	mdChar (4)	name of character coding standard used for the metadata set. <i>Domain: MD_CharacterSetCode</i> <i>Default value = "utf8"</i>	conditional / ISO 10646-1 not used and not defined by encoding Default value	1
parentIdentifier	mdParentID (5)	file identifier of the metadata to which the metadata is a subset (child)	conditional / if there is upper hierarchy level	1
hierarchyLevel	mdHrLv (6)	scope to which the metadata applies <i>Domain: MD_ScopeCode</i> <i>Default value = "dataset"</i>	conditional / hierarchyLevel not ="dataset" Default value	N
hierarchyLevelName	mdHrLvName (7)	name of the hierarchy levels for which the metadata is provided	conditional / hierarchyLevel not ="dataset"	N
contact	mdContact (8)	party responsible for the metadata <i>Domain: CI_ResponsibleParty (374)</i>	mandatory	N
dateStamp	dateStamp (9)	date that the metadata was created	mandatory	1
metadataStandardName	mdStanName (10)	name of the metadata standard (including profile name) used <i>Default value = "Australian Marine Community Profile of ISO 19115"</i>	optional	1
metadataStandardVersion	mdStanVer (11)	version of the metadata standard (version of the profile) used	optional	1
dataSetURI	dataSetURI (11.1)	Uniformed Resource Identifier (URI) of the dataset to which the metadata applies	optional	1
<i>Role Name:</i> referenceSystemInfo	refSysInfo (13)	description of the spatial reference systems used in the dataset. <i>Domain: MD_ReferenceSystem (186)</i>	optional	N
<i>Role Name</i> metadataExtensionInfo	mdExtInf (14)	information describing metadata extensions <i>Domain : MD_MetadataExtensionInformation (303)</i>	optional	N
<i>Role name:</i> identificationInfo	dataIdInfo (15)	basic information about the resource to which the metadata applies <i>Domain : MD_Identification (23)</i>	mandatory	N
<i>Role name:</i> distributionInfo	distInfo (17)	provides information about the distribution options for obtaining the resource. <i>Domain : MD_Distribution (270)</i>	optional	1
<i>Role Name:</i> dataQualityInfo	dqInfo (18)	provides overall assessment of quality of a resource. <i>Domain: DQ_DataQuality (78)</i>	optional	N
revisionDate	revDate (501)	date that the metadata were last revised. <i>Default value is dateStamp</i>	optional	1

## B.2.2 Identification information

### B.2.2.1 General

Name / Role name	Short name / ISO reference	Definition	Obligation / Condition	Max. occur.
<b>MD_Identification</b>	Ident (23)	basic information required to uniquely identify a resource or resources	Use obligation from referencing object	
citation	idCitation (24)	citation data for the resource <i>Domain: <u>CI_Citation</u> (359)</i>	mandatory	1
abstract	idAbs (25)	brief narrative summary of the content of the resource	mandatory	1
purpose	idPurp (26)	summary of the intentions with which the resource(s) was developed	optional	1
credit	IdCredit (27)	recognition of those who contributed to the resource(s)	optional	N
status	IdStatus (28)	status of the resource. <i>Domain: <u>MD_ProgressCode</u></i>	optional	N
pointOfContact	idPoC (29)	identification of, and means of communication with, person(s) and organization(s) associated with the resource. <i>Domain: <u>CI_ResponsibleParty</u> (374)</i>	optional	N
<i>Role name:</i> resourceMaintenance	resMaint (30)	provides information about the frequency of resource updates, and the scope of those updates <i>Domain: <u>MD_MaintenanceInformation</u> (142)</i>	optional	N
<i>Role name:</i> graphicOverview	graphOver (31)	provides a graphic that illustrates the resource(s). <i>Domain: <u>MD_BrowseGraphic</u> (48)</i>	optional	N
<i>Role name:</i> resourceFormat	dsFormat (32)	provides a description of the format of the resource. <i>Domain: <u>MD_Format</u> (284)</i>	optional	N
<i>Role name:</i> descriptiveKeywords	descKeys (33)	provides category keywords, their type, and reference source. <i>Domain: <u>MD_Keywords</u> (52)</i>	optional	N
<i>Role name:</i> resourceConstraints	resConst (35)	provides information about constraints which apply to the resource(s) <i>Domain: <u>MD_Constraints</u> (67)</i>	optional	N
<i>Role name:</i> aggregationInfo	aggrInfo (35.1)	provides aggregate dataset information <i>Domain: <u>MD_AggregateInformation</u> (66.1)</i>	optional	N
<b>MD_DataIdentification</b>	DataIdent (36)	information required to identify a dataset	Use obligation from referencing object	
spatialRepresentationType	spatRpType (37)	method used to spatially represent geographic information. <i>Domain: <u>MD_SpatialRepresentationTypeCode</u></i>	optional	N
spatialResolution	dataScale (38)	factor which provides a general understanding of the density of spatial data in the dataset. <i>Domain: <u>MD_Resolution</u> (59)</i>	optional	N
language	dataLang (39)	language(s) used within the dataset Default value= "eng" <i>Domain: ISO 639-2</i>	mandatory Default value	N
characterSet	dataChar (40)	full name of the character coding standard used for the dataset. <i>Domain: <u>MD_CharacterSetCode</u></i> Default value = "utf8"	conditional / ISO 10646-1 not used Default value	N
topicCategory	tpCat (41)	main theme(s) of the dataset <i>Domain: <u>MD_TopicCategoryCode</u></i> Default value = "oceans"	conditional / hierarchyLevel="dataset" Default value	N
environmentDescription	envirDesc (44)	description of the dataset in the producer's processing environment, including software, operating system, file name and size	optional	1
extent	dataExt (45)	extent information including the bounding box, bounding polygon, vertical, and temporal extent of the dataset. <i>Domain: <u>EX_Extent</u> (334)</i>	conditional / hierarchyLevel="dataset"	N
supplementalInformation	supplInfo (46)	any other descriptive information about the	optional	1

		dataset		
samplingFrequency	samFreq (503)	frequency with which the resource is sampled <i>Domain: MD_MaintenanceFrequencyCode</i>	optional	1

### B.2.2.2 Browse graphic information

Name / Role name	Short name / ISO reference	Definition	Obligation / Condition	Max. occur.
<b>MD_BrowseGraphic</b>	BrowGraph (48)	graphic that provides an illustration of the dataset	Use obligation from referencing object	
fileName	bgFileName (49)	URL of the file that contains a graphic that provides an illustration of the dataset	mandatory	1
fileDescription	bgFileDesc (50)	text description of the illustration	optional	1
fileType	bgFileType (51)	format in which the illustration is encoded. Examples: CGM, EPS, GIF, JPEG, PBM, PS, TIFF, XWD	optional	1

### B.2.2.3 Keyword information

Name / Role name	Short name / ISO reference	Definition	Obligation / Condition	Max. occur.
<b>MD_Keywords</b>	Keywords (52)	keywords, their type and reference source	Use obligation from referencing object	
keyword	keyword (53)	commonly used word(s) or formalised word(s) or phrase(s) used to describe the subject	mandatory	N
type	keyType (54)	subject matter used to group similar keywords <i>Domain: MD_KeywordTypeCode</i>	optional	1
thesaurusName	thesaName (55)	name of the formally registered thesaurus or a similar authoritative source of keywords <i>Domain: CI_Citation (359)</i>	optional	1

### B.2.2.4 Representative fraction information

Name / Role name	Short name / ISO reference	Definition	Obligation / Condition	Max. occur.
<b>MD_RepresentativeFraction</b>	RepFract (56)	derived from ISO 19103 Scale where MD_RepresentativeFraction.denominator = 1 / Scale.measure And Scale.targetUnits = Scale.sourceUnits	Use obligation from referencing object	
denominator	rfDenom (57)	the number below the line in a vulgar fraction	mandatory	1

### B.2.2.5 Resolution information

Name / Role name	Short name / ISO reference	Definition	Obligation / Condition	Max. occur.
<b>MD_Resolution</b>	Resol (59)	level of detail expressed as a scale factor or a ground distance	Use obligation from referencing object	
equivalentScale	equScale (60)	the number below the line in a vulgar fraction <i>Domain: MD_RepresentativeFraction (56)</i>	optional	1

### B.2.2.6 Aggregation information

Name / Role name	Short name / ISO reference	Definition	Obligation / Condition	Max. occur.
<b>MD_AggregateInformation</b>	AggregateInfo (66.1)	aggregate dataset information	Use obligation from referencing object	
aggregateDataSetName	aggrDSName (66.2)	citation information about the aggregate dataset <i>Domain: CI_Citation (359)</i>	conditional / aggregateDataSetIdentifier not documented	1
aggregateDataSetIdentifier	aggrDSIdent (66.3)	identification information about aggregate data <i>Domain: MD_Identifier (205)</i>	conditional / aggregateDataS	1

			etName not documented	
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### B.2.3 Constraint information

Name / Role name	Short name / ISO reference	Definition	Obligation / Condition	Max. occur.
<b>MD_Constraints</b>	Consts (67)	restrictions on the access and use of a resource or metadata	Use obligation from referencing object	
useLimitation	useLimit (68)	limitation affecting the fitness for use of the resource or metadata. <i>Example, "not to be used for navigation"</i>	optional	N
<b>MD_LegalConstraints</b>	LegConst (69)	restrictions and legal prerequisites for accessing and using the resource or metadata	Use obligation from referencing object	N
accessConstraints	accessConsts (70)	access constraints applied to assure the protection of privacy or intellectual property, and any special restrictions or limitations on obtaining the resource or metadata <i>Domain: MD_RestrictionCode</i>	optional	N
useConstraints	useConsts (71)	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 <i>Domain: MD_RestrictionCode</i>	optional	N
otherConstraints	othConsts (72)	other restrictions and legal prerequisites for accessing and using the resource or metadata	conditional / accessConstraint s or useConstraints="other Restrictions"	N
<b>MD_SecurityConstraints</b>	SecConsts (73)	handling restrictions imposed on the resource or metadata for security concerns	Use obligation from referencing object	
classification	class (74)	name of the handling restrictions on the resource or metadata <i>Domain: MD_ClassificationCode</i>	mandatory	1

### B.2.4 Data quality information

#### B.2.4.1 General

Name / Role name	Short name / ISO reference	Definition	Obligation / Condition	Max. occur.
<b>DQ_DataQuality</b>	DataQual (78)	quality information for the data specified by a data quality scope	Use obligation from referencing object	
scope	dqScope (79)	the specific data to which the data quality information applies. <i>Domain: DQ_Scope (138)</i>	mandatory	1
<i>Role name:</i> lineage	dataLineage (81)	non-quantitative quality information about the lineage of the data specified in the scope <i>Domain: LI_Lineage (82)</i>	optional	1

#### B.2.4.2 Lineage information

##### B.2.4.2.1 General

Name / Role name	Short name / ISO reference	Definition	Obligation / Condition	Max. occur.
<b>LI_Lineage</b>	Lineage (82)	information about the events or source data used in constructing the data specified by the scope or lack of knowledge about lineage	Use obligation from referencing object	
statement	statement (83)	general explanation of the data producer's knowledge about the lineage of a dataset	conditional / DQ_DataQuality.scope.DQ_Scope.level="dataset"	1

			or "series"	
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### B.2.4.3 Scope information

Name / Role name	Short name / ISO reference	Definition	Obligation / Condition	Max. occur.
DQ_Scope	DQScope (138)	extent of characteristics of the data for which the quality information is reported	Use obligation from referencing object	
level	scpLvi (139)	hierarchical level of the data specified by the scope. <i>Domain: MD_ScopeCode</i>	mandatory	1

### B.2.5 Maintenance information

#### B.2.5.1 General

Name / Role name	Short name / ISO reference	Definition	Obligation / Condition	Max. occur.
MD_MaintenanceInformation	MaintInfo (142)	information about the scope and frequency of updating	Use obligation from referencing object	
maintenanceAndUpdateFrequency	maintFreq (143)	frequency with which changes and additions are made to the resource after the initial resource is completed <i>Domain: MD_MaintenanceFrequencyCode</i>	mandatory	1

### B.2.6 Reference system information

#### B.2.6.1 General

MD_ReferenceSystem	RefSystem (186)	information about the reference system	Use obligation/condition from referencing object	
referenceSystemIdentifier	refSysId(187)	name of the reference system <i>Domain: RS_Identifier (208)</i>	Refer to ISO 19111 when coordinate reference system information is not given through reference system identifier	1

#### B.2.6.2 Identifier information

<<Data Type>> MD_Identifier	MdIdent (205)	value uniquely identifying an object within a namespace	Use obligation/condition from referencing object	
authority	identAuth (206)	person or party responsible for maintenance of the namespace <i>Domain: CI_Citation (359)</i>	optional	1
code	identCode (207)	alphanumeric value identifying an instance in the namespace	mandatory	1
RS_Identifier	MdIdent (208)	identify used for a reference system	Use obligation/condition from referencing object	
codeSpace	identCodeSpace (208.1)	name or identifier of the person or organization responsible for namespace	optional	1
version	identVrsn (208.2)	version identifier for the namespace	optional	1

## B.2.7 Distribution information

### B.2.7.1 General

<b>MD_Distribution</b>	Distrib (270)	information about the distributor of and options for obtaining the resource	Use obligation/condition from referencing object	
<i>Role name:</i> distributionFormat	distFormat (271)	provides a description of the format of the data to be distributed <i>Domain: MD_Format (284)</i>	conditional MD_Distributor.distributorFormat not documented?	N
<i>Role name:</i> distributor	distributor (272)	provides information about the distributor <i>Domain: MD_Distributor (279)</i>	optional	N
<i>Role name:</i> transferOptions	distTranOps (273)	provides information about technical means by which a resource is obtained from the distributor <i>Domain: MD_DigitalTransferOptions (274)</i>	optional	N

### B.2.7.2 Digital transfer options

Name / Role name	Short name / ISO reference	Definition	Obligation / Condition	Max. occur.
<b>MD_DigitalTransferOptions</b>	DigTranOps (274)	technical means and media by which a resource is obtained from the distributor	Use obligation/condition from referencing object	
online	onLineSrc (277)	information about online sources from which the resource can be obtained <i>Domain: CI_OnlineResource (396)</i>	optional	N

### B.2.7.3 Distributor information

Name / Role name	Short name / ISO reference	Definition	Obligation / Condition	Max. occur.
<b>MD_Distributor</b>	Distributor (279)	information about the distributor	Use obligation/condition from referencing object	
distributorContact	distorContact (280)	party from whom the resource may be obtained <i>Domain: CI_ResponsibleParty (374)</i>	mandatory	1
<i>Role name:</i> distributorFormat	distorFormat (282)	provides information about the format used by the distributor <i>Domain: MD_Format (284)</i>	conditional MD_Distribution.distributorFormat not documented	N
<i>Role name:</i> distributorTransferOptions	distorTran (283)	provide information about the technical means and media used by the distributor <i>Domain: MD_DigitalTransferOptions(274)</i>	optional	N

### B.2.7.4 Format information

Name / Role name	Short name / ISO reference	Definition	Obligation / Condition	Max. occur.
<b>MD_Format</b>	Format (284)	description of the computer language construct that specifies the representation of data objects in a record, file, message, storage device or transmission channel	Use obligation/condition from referencing object	
name	formatName (285)	name of the data transfer format(s)	mandatory	1
version	formatVer (286)	version of the format (date, number)	mandatory	1

## B.2.8 Metadata extension information

### B.2.8.1 General

Name / Role name	Short name / ISO	Definition	Obligation /	Max.
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	reference		Condition	occur.
<b>MD_MetadataExtensionInformation</b>	MdExtInfo (303)	information describing metadata extensions	Use obligation/condition from referencing object	
extensionOnLineResource	extonRes (304)	information about on-line sources containing the community profile name and the extended metadata elements <i>Domain: CI_OnlineResource (396)</i>	optional	1
<i>Role name:</i> extendedElementInformation	emtEleInfo (305)	provides information about a new metadata element, not found in ISO19115 <i>Domain: MD_ExtendedElementInformation (306)</i>	optional	N

### B.2.8.2 Extended element information

Name / Role name	Short name / ISO reference	Definition	Obligation / Condition	Max. occur.
<b>MD_ExtendedElementInformation</b>	ExEleInfo (306)	new metadata element, not found in ISO19115	Use obligation/condition from referencing object	
name	extEleName (307)	name of the extended metadata element	mandatory	1
shortName	extShortName (308)	short form suitable for use in an implementation method such as XML	conditional / dataType notEqual "codelistElement"	1
definition	extEleDef (310)	definition of the extended element	mandatory	1
obligation	extEleOb (311)	obligation of the extended element <i>Domain: MD_ObligationCode</i>	conditional / dataType not "codelist", "enumeration" or "codelistElement"	1
condition	extEleCond (312)	condition under which the extended element is mandatory	conditional / obligation = "conditional"	1
dataType	extDataType (313)	code which identifies the kind of value provided in the extended element <i>Domain: MD_DataTypeCode</i>	mandatory	1
maximumOccurrence	extEleMxOc (314)	maximum occurrence of the extended element	conditional / dataType not "codelist", "enumeration" or "codelistElement"	1
domainValue	extEleDomVal (315)	valid values that can be assigned to the extended element	conditional / dataType not "codelist", "enumeration" or "codelistElement"	1
parentEntity	extEleParEnt (316)	name of the metadata entity(s) under which this extended metadata element may appear	mandatory	N
Rule	extEleRule (317)	specifies how the extended element relates to other existing elements and entities	mandatory	1
rationale	extEleRat (318)	reason for creating the extended element	optional	N
source	extEleSrc (319)	name of the person or organization creating the extended element <i>Domain: CI_ResponsibleParty (374)</i>	mandatory	N

## B.3 Data type information

### B.3.1 Extent information

#### B.3.1.1 General

Name / Role name	Short name / ISO reference	Definition	Obligation / Condition	Max. occur.
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<b>EX_Extent</b>	Extent (334)	information about horizontal, vertical, and temporal extent	Use obligation/condition from referencing object	
description	exDesc (335)	spatial and temporal extent for the referring object	conditional / geographicElement and temporalElement and verticalElement not documented	1
<i>Role name:</i> geographicElement	geoEle (336)	provides geographic component of the extent of the referring object <i>Domain: EX_GeographicExtent (339)</i>	conditional / hierarchyLevel="dataset"	N
<i>Role name:</i> temporalElement	tempEle (337)	provides temporal component of the extent of the referring object <i>Domain: EX_TemporalExtent (350)</i>	conditional / hierarchyLevel="dataset"	N
<i>Role name:</i> verticalElement	vertEle (338)	provides vertical component of the extent of the referring object <i>Domain: EX_VerticalExtent (354)</i>	conditional / geographicElement or temporalElement not documented	N

### B.3.1.2 Geographic extent information

Name / Role name	Short name / ISO reference	Definition	Obligation / Condition	Max. occur.
<b>EX_GeographicExtent</b>	GeoExtent (339)	geographic area of the dataset	Use obligation/condition from referencing object	
<b>EX_BoundingPolygon</b>	BoundPoly (341)	boundary enclosing the dataset, expressed as the closed set of (x,y) coordinates of the polygon (last point replicates first point)	Use obligation/condition from referencing object	
polygon	polygon (342)	sets of points defining the bounding polygon <i>Domain: GM_Objects (ISO 19111)</i>	mandatory	N
<b>EX_GeographicBoundingBox</b>	GeoBndBox (343)	geographic position of the dataset NOTE This is only an approximate reference so specifying the coordinate reference system is unnecessary	Use obligation/condition from referencing object	
westBoundLongitude	westBL (344)	western-most coordinate of the limit of the dataset extent, expressed in longitude in decimal degrees (positive east)	mandatory	1
eastBoundLongitude	eastBL (345)	eastern-most coordinate of the limit of the dataset extent, expressed in longitude in decimal degrees (positive east)	mandatory	1
southBoundLatitude	southBL (346)	southern-most coordinate of the limit of the dataset extent, expressed in latitude in decimal degrees (positive north)	mandatory	1
northBoundLatitude	northBL (347)	northern-most, coordinate of the limit of the dataset extent expressed in latitude in decimal degrees (positive north)	mandatory	1
<b>EX_GeographicDescription</b>	GeoDesc (348)	description of the geographic area using identifiers	Use obligation/condition from referencing object	
geographicIdentifier	geoid (349)	identifier used to represent a geographic area <i>Domain: MD_Identifier (205)</i>	mandatory	1

### B.3.1.3 Temporal extent information

Name / Role name	Short name / ISO reference	Definition	Obligation / Condition	Max. occur.
<b>EX_TemporalExtent</b>	TempExtent (350)	time period covered by the content of the resource	Use obligation/condition from referencing object	

extent	exTemp (351)	date and time for the content of the resource <i>Domain: TM_Primitive</i>	mandatory	1
currency	exCurr (506)	temporal currency of the resource <i>Domain: MD_CurrencyTypeCode</i>	optional	1
temporalAggregation	exTempAggr (507)	temporal aggregation of the resource <i>Domain: MD_TemporalAggregationUnitCode</i>	optional	1

### B.3.1.4 Vertical extent information

Name / Role name	Short name / ISO reference	Definition	Obligation / Condition	Max. occur.
<b>EX_VerticalExtent</b>	VertExtent (354)	vertical domain of resource	Use obligation/condition from referencing object	
minimumValue	vertMinVal (355)	minimum vertical extent value contained in the resource	mandatory	1
maximumValue	vertMaxVal (356)	maximum vertical extent value contained in the resource	mandatory	1
verticalCRS	vertCRS (358)	provides information about the vertical coordinate reference system to which the maximum and minimum elevation / depth values are measured. The CRS identification includes the unit of measure. <i>Domain: SC_CRS (ISO19111)</i>	mandatory	1

### B.3.2 Citation and responsible party information

#### B.3.2.1 General

Name / Role name	Short name / ISO reference	Definition	Obligation / Condition	Max. occur.
<b>CI_Citation</b>	Citation (359)	standardized resource reference	Use obligation/condition from referencing object	
title	resTitle (360)	name by which the cited resource is known	mandatory	1
date	resRefDate (362)	reference date for the cited resource <i>Domain : CI_Date (393)</i>	mandatory	N
citedResponsibleParty	citRespParty (367)	name and position information for an individual or organization that is responsible for the resource <i>Domain: CI_ResponsibleParty (374)</i>	optional	N
<b>CI_ResponsibleParty</b>	RespParty (374)	identification of, and means of communication with, person(s) and organizations associated with the metadata and/or dataset	Use obligation/condition from referencing object	
individualName	rpIndName (375)	name of the responsible person- surname, given name, title separated by a delimiter	conditional / organisationName and positionName not documented	1
organisationName	rpOrgName (376)	name of the responsible organization	conditional / individualName and positionName not documented	1
positionName	rpPosName (377)	role or position of the responsible person	conditional / individualName and organisationName not documented	1
contactInfo	rpCntinfo (378)	address of the responsible party <i>Domain: CI_Contact (387)</i>	optional	1
role	role (379)	function performed by the responsible party <i>Domain: CI_RoleCode</i>	mandatory	1

### B.3.2.2 Address information

Name / Role name	Short name / ISO reference	Definition	Obligation / Condition	Max. occur.
<b>CI_Address</b>	Address (380)	location of the responsible individual or organization	Use obligation/condition from referencing object	
deliveryPoint	delPoint (381)	address line for the location (as described in ISO 11180)	optional	N
city	city (382)	city of the location	optional	1
administrativeArea	adminArea (383)	state, province of the location	optional	1
postalCode	postCode (384)	ZIP or postal code	optional	1
country	country (385)	country of the physical address <i>Default value = "Australia"</i>	optional	1
electronicMailAddress	eMailAdd (386)	address of the electronic mailbox of the responsible organization or individual	optional	N

### B.3.2.3 Contact information

Name / Role name	Short name / ISO reference	Definition	Obligation / Condition	Max. occur.
<b>CI_Contact</b>	Contact (387)	information required to enable contact with the responsible person and/or organization	Use obligation/condition from referencing object	
phone	cntPhone (388)	telephone numbers at which the organization or individual may be contacted <i>Domain: CI_Telephone (407)</i>	optional	1
address	cntAddress (389)	physical and email address at which the organization or individual may be contacted <i>Domain: CI_Address (380)</i>	optional	1
onlineResource	cntOnlineRes (390)	online information that can be used to contact the individual or organization <i>Domain : CI_OnlineResource (396)</i>	optional	1

### B.3.2.4 Date information

Name / Role name	Short name / ISO reference	Definition	Obligation / Condition	Max. occur.
<b>CI_Date</b>	Date (393)	reference date and event used to describe it	Use obligation/condition from referencing object	
date	refDate (394)	reference date for the cited resource	mandatory	1
dateType	refDateType (395)	event used for reference date <i>Domain: CI_DateTypeCode</i>	mandatory	1

### B.3.2.5 Online resource information

Name / Role name	Short name / ISO reference	Definition	Obligation / Condition	Max. occur.
<b>CI_OnlineResource</b>	OnlineRes (396)	information about on-line sources from which the dataset, specification, or community profile name and extended metadata elements can be obtained	Use obligation/condition from referencing object	
linkage	linkage (397)	location (address) for online access using a Uniform Resource Locator address such as <a href="http://www.aodc.org.au/">http://www.aodc.org.au/</a>	mandatory	1
protocol	protocol (398)	connection protocol to be used	optional	1
applicationProfile	appProfile (399)	name of an application profile that can be used with the online resource	optional	1
name	orName (400)	name of the online resource	optional	1
description	orDesc (401)	detailed text description of what the online resource is/does	optional	1

### B.3.2.6 Telephone information

Name / Role name	Short name / ISO reference	Definition	Obligation / Condition	Max. occur.
<b>CI_Telephone</b>	Telephone (407)	telephone numbers for contacting the responsible individual or organization	Use obligation/condition from referencing object	
voice	voiceNum (408)	telephone number by which individuals can speak to the responsible organization or individual	optional	N
facsimile	faxNum (409)	telephone number of a facsimile machine for the responsible organization or individual	optional	N

## B.4 CodeLists and Enumerations

### B.4.1 ISO 19115 CodeLists and enumerations

The following codelist and enumeration descriptions are defined by ISO 19115 and are used in the Marine Community Profile. Codelists are extendable and the enumerations are closed (not extendable).

#### CI\_DateTypeCode <<CodeList>> (ISO 19115 REF: B.5.2)

	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 or re-examined and improved or amended

#### CI\_RoleCode <<CodeList>>(ISO 19115 REF: B.5.5)

	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

#### MD\_CharacterSetCode <<CodeList>> (ISO 19115 REF: B.5.10)

	Name	Domain code	Definition
1.	MD_CharacterSetCode	CharSetCd	name of the character coding standard used for the resource
2.	ucs2	001	16-bit fixed size Universal Character Set, based on ISO/IEC 10646
3.	ucs4	002	32-bit fixed size Universal Character Set, based on ISO/IEC 10646
4.	utf7	003	7-bit variable size UCS Transfer Format, based on ISO/IEC 10646
5.	utf8	004	8-bit variable size UCS Transfer Format, based on ISO/IEC 10646
6.	utf16	005	16-bit variable size UCS Transfer Format, based on ISO/IEC 10646
7.	8859part1	006	ISO/IEC 8859-1, Information technology – 8-bit single-byte coded graphic character sets – Part 1: Latin alphabet No. 1
8.	8859part2	007	ISO/IEC 8859-2, Information technology – 8-bit single-byte coded graphic character sets – Part 2: Latin alphabet No. 2
9.	8859part3	008	ISO/IEC 8859-3, Information technology –8-bit single-byte coded graphic character sets – Part 3: Latin alphabet No. 3

10.	8859part4	009	ISO/IEC 8859-4, Information technology – 8-bit single-byte coded graphic character sets – Part 4: Latin alphabet No. 4
11.	8859part5	010	ISO/IEC 8859-5, Information technology – 8-bit single-byte coded graphic character sets – Part 5: Latin/Cyrillic alphabet
12.	8859part6	011	ISO/IEC 8859-6, Information technology – 8-bit single-byte coded graphic character sets – Part 6: Latin/Arabic alphabet
13.	8859part7	012	ISO/IEC 8859-7, Information technology – 8-bit single-byte coded graphic character sets – Part 7: Latin/Greek alphabet
14.	8859part8	013	ISO/IEC 8859-8, Information technology – 8-bit single-byte coded graphic character sets – Part 8: Latin/Hebrew alphabet
15.	8859part9	014	ISO/IEC8859-9, Information technology –8-bit single-byte coded graphic character sets – Part 9: Latin alphabet No. 5
16.	8859part10	015	ISO/IEC 8859-10, Information technology – 8-bit single-byte coded graphic character sets – Part 10: Latin alphabet No. 6
17.	8859part11	016	ISO/IEC 8859-11, Information technology – 8-bit single-byte coded graphic character sets – Part 11: Latin/Thai alphabet
19.	8859part13	018	ISO/IEC 8859-13, Information technology – 8-bit single-byte coded graphic character sets – Part 13: Latin alphabet No. 7
20.	8859part14	019	ISO/IEC 8859-14, Information technology – 8-bit single-byte coded graphic character sets – Part 14: Latin alphabet No. 8 (Celtic)
21.	8859part15	020	ISO/IEC 8859-15, Information technology – 8-bit single-byte coded graphic character sets – Part 15: Latin alphabet No. 9
22.	8859part16	021	ISO/IEC 8859-16, Information technology – 8-bit single-byte coded graphic character sets – Part 16: Latin alphabet No. 10
23.	jis	022	japanese code set used for electronic transmission
24.	shiftJIS	023	japanese code set used on MS-DOS based machines
25.	eucJP	024	japanese code set used on UNIX based machines
26.	usAscii	025	united states ASCII code set (ISO 646 US)
27.	ebcdic	026	ibm mainframe code set
28.	eucKR	027	korean code set
29.	big5	028	traditional Chinese code set used in Taiwan, Hong Kong of China and other areas
30.	GB2312	029	simplified Chinese code set

### MD\_ClassificationCode <<CodeList>> (ISO 19115 REF: B.5.11)

	Name	Domain code	Definition
1.	MD_ClassificationCode	ClassscationCd	name of the handling restrictions on the dataset
2.	unclassified	001	available for general disclosure
3.	restricted	002	not for general disclosure
4.	confidential	003	available for someone who can be entrusted with information
5.	secret	004	kept or meant to be kept private, unknown, or hidden from all but a select group of people
6.	topSecret	005	of the highest secrecy

### MD\_DatatypeCode <<CodeList>> (ISO 19115 REF: B.5.13)

	Name	Domain code	Definition
1.	MD_DatatypeCode	DatatypeCd	datatype of element or entity
2.	class	001	descriptor of a set of objects that share the same attributes, operations, methods, relationships, and behaviour
3.	codelist	002	flexible enumeration useful for expressing a long list of values, can be extended

4.	enumeration	003	data type whose instances form a list of named literal values, not extendable
5.	codelistElement	004	permissible value for a codelist or enumeration
6.	abstractClass	005	class that cannot be directly instantiated
7.	aggregatedClass	006	class that is composed of classes it is connected to by an aggregate relationship
8.	specifiedClass	007	subclass that may be substituted for its superclass
9.	datatypeClass	008	class with few or no operations whose primary purpose is to hold the abstract state of another class for transmittal, storage, encoding or persistent storage
10.	interfaceClass	009	named set of operations that characterize the behaviour of an element
11.	unionClass	010	class describing a selection of one of the specified types
12.	metaClass	011	class whose instances are classes
13.	typeClass	012	class used for specification of a domain of instances (objects), together with the operations applicable to the objects. A type may have attributes and associations
14.	characterString	013	free text field
15.	integer	014	numerical field
16.	association	015	semantic relationship between two classes that involves connections among their instances

### MD\_KeywordTypeCode <<CodeList>> (ISO 19115 REF: B.5.17)

	Name	Domain code	Definition
1.	MD_KeywordTypeCode	KeyTypCd	methods used to group similar keywords
2.	discipline	001	keyword identifies a branch of instruction or specialized learning
3.	place	002	keyword identifies a location
4.	stratum	003	keyword identifies the 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

### MD\_MaintenanceFrequencyCode <<CodeList>> (ISO 19115 REF: B.5.18)

	Name	Domain code	Definition
1.	MD_MaintenanceFrequencyCode	MaintFreqCd	frequency with which modifications are made to the resource after it is first produced and the frequency a resource is sampled
2.	continual	001	data is repeatedly and frequently updated
3.	daily	002	data is updated each day
4.	weekly	003	data is updated on a weekly basis
5.	fortnightly	004	data is updated every two weeks
6.	monthly	005	data is updated each month
7.	quarterly	006	data is updated every three months
8.	biannually	007	data is updated twice each year
9.	annually	008	data is updated every year
10.	asNeeded	009	data is updated as deemed necessary
11.	irregular	010	data is updated in intervals that are uneven in duration
12.	notPlanned	011	there are no plans to update the data
13.	unknown	012	frequency of maintenance for the data is not known

### MD\_ObligationCode <<CodeList>> (ISO 19115 REF: B.5.21)

	Name	Domain code	Definition
1.	MD_ObligationCode	ObCd	obligation of the element or entity
2.	mandatory	001	element is always required

3.	optional	002	element is not required
4.	conditional	003	element is required when a specific condition is met

### MD\_ProgressCode <<CodeList>> (ISO 19115 REF: B.5.23)

	Name	Domain code	Definition
1.	MD_ProgressCode	ProgCd	status of the dataset or progress of a review
2.	completed	001	production of the data has been completed
3.	historicalArchive	002	data has been stored in an offline storage facility
4.	obsolete	003	data is no longer relevant
5.	ongoing	004	data is continually being updated
6.	planned	005	fixed date has been established upon or by which the data will be created or updated
7.	required	006	data needs to be generated or updated
8.	underDevelopment	007	data is currently in the process of being created

### MD\_RestrictionCode <<CodeList>> (ISO 19115 REF: B.5.24)

	Name	Domain code	Definition
1.	MD_RestrictionCode	RestrictCd	limitation(s) placed upon the 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, 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 financial benefit from and control of distribution of non-tangible property that is a result of creativity
8.	restricted	007	withheld from general circulation or disclosure
9.	otherRestrictions	008	limitation not listed

### MD\_ScopeCode <<CodeList>> (ISO 19115 REF: B.5.25)

	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 value
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

13.	fieldSession	012	information applies to a field session
14.	software	013	information applies to a computer program 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
18.	observed	017	information applies to observed data (MCP extension)
19.	derived	018	information applies to derived data (MCP extension)

### MD\_SpatialRepresentationTypeCode <<CodeList>> (ISO 19115 REF: B.5.26)

	Name	Domain code	Definition
1.	MD_SpatialRepresentationTypeCode	SpatRepTypCd	method used to represent geographic information in the dataset
2.	vector	001	vector data is used to represent geographic data
3.	grid	002	grid data is used to represent geographic data
4.	textTable	003	textual or tabular data is used to represent geographic data
5.	tin	004	triangulated irregular network
6.	stereoModel	005	three-dimensional view formed by the intersecting homologous rays of an overlapping pair of images
7.	video	006	scene from a video recording

### MD\_TopicCategoryCode << Enumeration>> (ISO 19115 REF: B.5.27)

	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, irrigation, aquaculture, 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, wilderness, sealife, wetlands, habitat
4.	boundaries	003	legal land descriptions Examples: political and administrative boundaries
5.	climatologyMeteorologyAtmosphere	004	processes and phenomena of the atmosphere. Examples: cloud cover, 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
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

## B.4.2 Marine Profile Defined CodeLists

The following additional codelist are used in the Marine Community Profile.

### MD\_CurrencyTypeCode <<CodeList>>

	Name	Domain code	Definition
1.	CurrencyTypeCode	CurrCd	name of the currency of the resource
2.	mostRecent	001	resource currency is most recent
3.	historical	002	resource currency is historical
4.	predicted	003	resource currency is predicted
5.	unknown	004	resource currency is unknown

### MD\_TemporalAggregationUnitCode <<CodeList>>

	Name	Domain code	Definition
1.	TemporalAggregationUnitCode	AgUnitCd	name of aggregation unit
2.	day	001	aggregation unit is day
3.	multi-day	002	aggregation unit is multi-day, e.g. 5-day
4.	week	003	aggregation unit is week
5.	month	004	aggregation unit is month
6.	multi-month	005	aggregation unit is multi-month, e.g. season
7.	year	006	aggregation unit is year
8.	multi-year	007	aggregation unit is multi-year
9.	none	008	there is no aggregation unit

## Annex C.

### Marine Community Profile - Vocabularies

#### C.1 Marine Community Profile Controlled Vocabularies

The following controlled vocabulary lists are used by the Marine Community Profile.

##### C.1.1 Descriptive Keywords

The Marine Community Profile will use the Global Change Master Directory (GCMD) Science Keywords to describe the theme of the resource. The complete list of Science Keywords is located at [http://gcmd.nasa.gov/Resources/valids/gcmd\\_parameters.html](http://gcmd.nasa.gov/Resources/valids/gcmd_parameters.html). GCMD keywords will be recorded in *MD\_Keywords.keyword* and the *KeywordTypeCode* will be 005 (theme).

This list is maintained by the GCMD.

##### C.1.2 Geographic Extent Names

The Geographic Extent Name vocabulary is used to describe the geographic area of the resource. The bounding coordinates describe the approximate geographic position. This list is limited to the Australian area of interest.

This list is maintained by the AODCJF and is extendable.

ID	Region Category	Defined Region Name	West Bounding Coordinate	South Bounding Coordinate	East Bounding Coordinate	North Bounding Coordinate
1	Global / Oceans	World	-180	-90	180	90
2	Global / Oceans	World Ocean	-180	-85	180	90
3	Global / Oceans	Atlantic Ocean	-90	-70	20	90
4	Global / Oceans	Indian Ocean	20	-70	127	28
5	Global / Oceans	Pacific Ocean	120	-70	180	90
6	Global / Oceans	Southern Ocean	-180	-85	180	-60
7	Regional Seas	Arafura Sea	131	-18	142	-3
8	Regional Seas	Bali Sea	114	-9	117	-7
9	Regional Seas	Banda Sea	120.5	-8.5	133	-1
10	Regional Seas	Bismarck Sea	144	-6.5	152.5	-2
11	Regional Seas	Celebes Sea	117	1	125	8
12	Regional Seas	Ceram Sea	126	-3	132	-2
13	Regional Seas	Coral Sea	142	-30	170	-7
14	Regional Seas	Flores Sea	117	-8.5	123	-5.5
15	Regional Seas	Gulf of Papua	143	-10	147	-7.5
16	Regional Seas	Gulf of Thailand	99	7	105	14
17	Regional Seas	Java Sea	105	-8	119	-3
18	Regional Seas	Makassar Strait	116	-4	119.5	1

19	Regional Seas	Molucca Sea	123	-1.5	128	8
20	Regional Seas	Savu Sea	118	-11	125	-8
21	Regional Seas	Solomon Sea	147	-12	162	-4.5
22	Regional Seas	South China Sea	102	-3	120	25
23	Regional Seas	Tasman Sea	147	-53	175	-29
24	Regional Seas	Timor Sea	123	-15	133	-8
25	Continents	Antarctica	-180	-90	180	-60
26	Countries	Australia	112	-44	154	-9
27	Countries	Timor-Leste	125	-10	128	-8
28	Countries	Indonesia	100	-12	141	2
29	Countries	New Caledonia	157	-23.5	174	-17
30	Countries	New Zealand	164	-48	180	-32
31	Countries	Papua New Guinea	141	-12	156	-2
32	Countries	Solomon Islands	155	-13	171	-5
33	Countries	Vanuatu	157.5	-21	174	-13
34	States, Territories (Australia)	Australian Antarctic Territory	45	-90	160	-60
35	States, Territories (Australia)	Australian Capital Territory	148.5	-36	149.5	-35
36	States, Territories (Australia)	New South Wales	141	-37.5	154	-28
37	States, Territories (Australia)	Northern Territory	129	-26	138	-11
38	States, Territories (Australia)	Queensland	138	-29.5	153.5	-9
39	States, Territories (Australia)	South Australia	129	-38.5	141	-26
40	States, Territories (Australia)	Tasmania	144.5	-44	148.5	-39.5
41	States, Territories (Australia)	Victoria	141	-39	150	-34
42	States, Territories (Australia)	Western Australia	112.5	-35.5	129	-13.5
43	Offshore Islands (Australia)	Ashmore & Cartier Islands	73	-53.3	74	-52.8
44	Offshore Islands (Australia)	Christmas Island	105.1	-11	106.1	-10
45	Offshore Islands (Australia)	Cocos (Keeling) Island	96.3	-12.4	97.3	-11.4
46	Offshore Islands (Australia)	Heard & McDonald Islands	73	-53.3	74	-52.8
47	Offshore Islands (Australia)	Lord Howe Island	158.7	-31.8	159.3	-31.2
48	Offshore Islands (Australia)	Macquarie Island	158.5	-55	159.5	-54
49	Offshore Islands (Australia)	Norfolk Island	167.6	-29.6	168	-29
50	Marine Planning Regions (Australia)	Australian Antarctic	44	-58	162	-71
51	Marine Planning Regions (Australia)	East	144	-36.5	171.8	-9.6
52	Marine Planning Regions (Australia)	Kerguelen	66	-49	78	-57
53	Marine Planning Regions (Australia)	Lord Howe	155	-36	162	-27

54	Marine Planning Regions (Australia)	Macquarie	151	-50	165	-59
55	Marine Planning Regions (Australia)	Norfolk	164	-25	172	-33
57	Marine Planning Regions (Australia)	North	125	-18	142	-8
58	Marine Planning Regions (Australia)	North-east	127.5	-17.7	142.1	-8.9
59	Marine Planning Regions (Australia)	North-west	109.2	-27.7	129.0	-11.2
60	Marine Planning Regions (Australia)	South-east	131.4	-58.45	164.7	-35.3
61	Marine Planning Regions (Australia)	South-west	109.2	-38.5	138	-25.5
62	Marine Planning Regions (Australia)	Sunda	93	-7	109	-15
63	Marine Planning Regions (Australia)	Western-central	108	-19	116	-34
64	Marine Features (Australia)	Albatross Bay, QLD	141.5	-13	142	-12.5
65	Marine Features (Australia)	Australian North West Shelf, WA	114	-24	122	-17
66	Marine Features (Australia)	Bass Strait, TAS/MIC	144	-41	150	-37
67	Marine Features (Australia)	Botany Bay, NSW	150.9	-34.1	151.1	-33.9
68	Marine Features (Australia)	Broken Bay, NSW	151.2	-33.7	151.4	-33.5
69	Marine Features (Australia)	Derwent Estuary, TAS	147.2	-43.1	147.5	-42.7
70	Marine Features (Australia)	Exmouth Gulf, WA	114	-23	115	-21
71	Marine Features (Australia)	Flinders Bay, WA	114.5	-34.5	115.5	-33.5
72	Marine Features (Australia)	Flinders Island, TAS	147.5	-40.5	148.5	-39.5
73	Marine Features (Australia)	Fraser Island, QLD	152.5	-26	153.5	-24.5
74	Marine Features (Australia)	Geographe Bay, WA	115	-34	116	-33
75	Marine Features (Australia)	Great Australian Bight, SA/WA	118	-35	136	-31
76	Marine Features (Australia)	Great Barrier Reef, QLD	141	-24	153	-9
77	Marine Features (Australia)	Great Barrier Reef Cairns Section, QLD	145	-18	147	-15
78	Marine Features (Australia)	Great Barrier Reef Capricorn/Bunker Section, QLD	151.5	-24.5	153	-23
79	Marine Features (Australia)	Great Barrier Reef Central Section, QLD	146	-21	150.5	-18
80	Marine Features (Australia)	Great Barrier Reef Far North Section, QLD	143	-15	145.5	-11
81	Marine Features (Australia)	Great Barrier Reef Mackay Section, QLD	149	-23	153	-21
82	Marine Features (Australia)	Groote Eylandt, NT	136	-14.5	137	-13.5
83	Marine Features (Australia)	Gulf of Carpentaria, NT/QLD	136	-18	142	-11
84	Marine Features (Australia)	Gulf St. Vincent, SE	137	-35	139	-34
85	Marine Features (Australia)	Hervey Bay, QLD	152	-26	153	-25
86	Marine Features	Jervis Bay, ACT	150.5	-35.5	151.5	-34.5

	(Australia)					
87	Marine Features (Australia)	Joseph Bonaparte Gulf, NT/WA	127	-15	130	-13
88	Marine Features (Australia)	Kangaroo Island, SA	136.5	-36.5	138.5	-35.5
89	Marine Features (Australia)	King Island, TAS	143.5	-40.5	144.5	-39.5
90	Marine Features (Australia)	King Sound, WA	123	-18	124	-16
91	Marine Features (Australia)	Macquarie Harbour, TAS	144.5	-43.5	145.5	-42.5
92	Marine Features (Australia)	Melville Island, NT	130	-12	132	-11
93	Marine Features (Australia)	Moreton Bay, QLD	153	-28	154	-27
94	Marine Features (Australia)	Mornington Island, QLD	139	-17	140	-16
95	Marine Features (Australia)	Port Hacking, NSW	151.1	-33.9	151.3	-33.7
96	Marine Features (Australia)	Port Phillip Bay, VIC	144.3	-38.3	145.2	-37.8
97	Marine Features (Australia)	Shark Bay, WA	113	-27	115	-25
98	Marine Features (Australia)	Spencer Gulf, SA	136	-35	138	-32
99	Marine Features (Australia)	Swan River, WA	115.5	-32	116.5	-31.5
100	Marine Features (Australia)	Torres Strait, QLD	142	-11	143	-9
101	Marine Features (Australia)	Van Diemen Gulf, NT	131	-13	133	-11
102	Coastal Cities / Towns (Australia)	Adelaide, SA	138	-35	139	-34.5
103	Coastal Cities / Towns (Australia)	Albany, WA	117.5	-35.5	118.5	-34.5
104	Coastal Cities / Towns (Australia)	Brisbane, QLD	153	-28	153.5	-27
105	Coastal Cities / Towns (Australia)	Broome, WA	122	-18.5	122.5	-17.5
106	Coastal Cities / Towns (Australia)	Bunbury, WA	115.5	-33.5	116	-33
107	Coastal Cities / Towns (Australia)	Bundaberg, QLD	152	-25	152.5	-24.5
108	Coastal Cities / Towns (Australia)	Burnie, TAS	145.5	-41.5	146	-41
109	Coastal Cities / Towns (Australia)	Cairns, QLD	145.5	-17	146	-16.5
110	Coastal Cities / Towns (Australia)	Darwin, NT	130.5	-13	131	-12
111	Coastal Cities / Towns (Australia)	Dampier, WA	116.5	-21	117	-20.5
112	Coastal Cities / Towns (Australia)	Devonport, TAS	146	-41.5	146.5	-41
113	Coastal Cities / Towns (Australia)	Esperance, WA	121.5	-34	122	-33.5
114	Coastal Cities / Towns (Australia)	Fremantle, WA	115.5	-32.5	116	-32
115	Coastal Cities / Towns (Australia)	Geraldton, WA	114.5	-29	115	-28.5
116	Coastal Cities / Towns (Australia)	Gladstone, QLD	151	-24	151.5	-23.5
117	Coastal Cities / Towns (Australia)	Hobart, TAS	147	-43	147.5	-42.5

118	Coastal Cities / Towns (Australia)	Launceston, TAS	147	-41.5	147.5	-41
119	Coastal Cities / Towns (Australia)	Mackay, QLD	149	-21.5	149.5	-21
120	Coastal Cities / Towns (Australia)	Melbourne, VIC	144.5	-38.5	145.5	-37.5
121	Coastal Cities / Towns (Australia)	Newcastle, NSW	151.5	-33.5	152	-32.5
122	Coastal Cities / Towns (Australia)	Perth, WA	115.5	-32.5	116	-31.5
123	Coastal Cities / Towns (Australia)	Port Hedland, WA	118.5	-20.5	119	-20
124	Coastal Cities / Towns (Australia)	Portland, VIC	141.5	-38.5	142	-38
125	Coastal Cities / Towns (Australia)	Rockhampton, QLD	150.5	-23.5	151	-23
126	Coastal Cities / Towns (Australia)	Sydney, NSW	151	-34.5	151.5	-33.5
127	Coastal Cities / Towns (Australia)	Townsville, QLD	146.5	-19.5	147	-19
128	Coastal Cities / Towns (Australia)	Wollongong, NSW	150.5	-34.5	151	-34
129	Named Locations (Antarctica)	Amery Ice Shelf, AAT	67	-73	74	-68
130	Named Locations (Antarctica)	Casey Station, AAT	110	-66.3	111	-65
131	Named Locations (Antarctica)	Cook Ice Shelf, AAT	152	-69	153	-68.5
132	Named Locations (Antarctica)	Davis Sea, AAT	85	-66	100	-62
133	Named Locations (Antarctica)	Davis Station, AAT	77.5	-69	78.2	-68
134	Named Locations (Antarctica)	Dumont D'Urville Sea (France)	130	-66	145	-62
135	Named Locations (Antarctica)	Mawson Station, AAT	62	-67.6	63	-67
136	Named Locations (Antarctica)	Prydz Bay, AAT	74	-70	77	-67
137	Named Locations (Antarctica)	Publications Ice Shelf, AAT	75	-70	75.5	-69.5
138	Named Locations (Antarctica)	Shackleton Ice Shelf, AAT	95	-66	104	-64.8
139	Named Locations (Antarctica)	Vincennes Bay, AAT	108.5	-67	111	-65
140	Named Locations (Antarctica)	Voyekov Ice Shelf, AAT	119	-65.8	120	-65.6
141	Named Locations (Antarctica)	West Ice Shelf, AAT	82	-67	89	-66
142	Global / Oceans	Southern Ocean/ Australia extension	127	-60	145	-35

### C.1.3 Collection Methods

The Collection Method vocabulary is used to describe the instrument used to collect the data described in the resource.

This list is maintained by the AODCJF and is extensible.

ID	Topic	Term	Variable
1	Acoustic Equipment/Echo Sounders		
2	Aircraft/Airborne Equipment		
3	Aircraft/Airborne Equipment	Aerial Surveys	
4	Altimeters		
5	Altimeters	Laser Altimeters	
6	Altimeters	Radar Altimeters	
7	Altimeters	Radar Altimeters	POSEIDON-2 Radar Altimeter
8	Altimeters	Radar Altimeters	ERS Radar Altimeter (RA)
9	Altimeters	Radar Altimeters	Radar Altimeter-2 (RA-2)
10	Altimeters	Radar Altimeters	TOPEX Radar Altimeter
19	Autoanalysers	Nutrient Analysers	
20	Bathythermographs		
21	Bathythermographs	Autonomous Pinniped Bathythermograph (APB)	
22	Bathythermographs	Mechanical Bathythermographs (MBT)	
23	Bathythermographs	Expendable Bathythermographs (XBT)	
24	Boats and Small Vessels		
25	Bunyip		
26	Buoys		
27	Buoys	Drifting Buoys	
28	Buoys	Moored Buoys	
29	Cages and Enclosures		
30	Cameras		
31	Cameras	Aerial Cameras	
32	Cameras	Cine Cameras	
33	Cameras	Still Cameras - surface	
34	Cameras	Still Cameras - underwater	
35	Cameras	Video Cameras - surface	
36	Cameras	Video Cameras - underwater	
37	Cell Counters/Particle Counters		
38	Corers		
39	CTD (Conductivity-Temperature-Depth Profilers)		
40	Current Meters/Profilers		
41	Current Meters/Profilers	Acoustic Doppler Current Profiler (ADCP)	
42	Data Loggers		

43	Digital Imaging (acquisition and/or analysis)		
44	DNA Sequencers		
45	Dredges		
46	Drift Bottles		
47	Drift Cards		
48	Field Surveys		
49	Field Surveys	Shore Surveys	
50	Field Surveys	Terrestrial Surveys	
51	Field Surveys	Underwater Surveys	
52	Fish Traps		
53	Fluorometers		
54	Gas Chromatographs		
55	Gel Electrophoresis		
56	Grabs		
57	Growth Chambers		
58	Handlines		
59	Hand Sampling (specimens and/or tissue samples)		
60	HPLC (High Performance Liquid Chromatography)		
61	Imaging Radar Systems		
62	Imaging Radar Systems	Synthetic Aperture Radar (SAR)	
63	Incubators		
64	Length-Frequency Measurements		
65	LIDAR		
66	Logbook/Catch Data		
67	Longlines		
68	Mass Spectrometers		
69	Mesocosms		
70	Meteorological Instruments		
71	Microprobes		
72	Microprobes	Electron Microprobes	
73	Microprobes	Proton Microprobes	
74	Microscopes	Optical Microscopes	
75	Microscopes	Optical Microscopes	Fluorescence Microscopes
76	Microscopes	Optical Microscopes	Video Microscopes
77	Microscopes	Scanning Electron Microscopes	
78	Microscopes	Transmission Electron Microscopes	
79	Microwave Radiometers		
80	Microwave Radiometers	Advanced Microwave Scanning Radiometer for EOS (AMSR-E)	
81	Microwave Radiometers	Special Sensor Microwave/Imager (SSM/I)	
82	Microwave Radiometers	TRMM Microwave Imager (TMI)	
83	Microwave Scatterometers		

84	Microwave Scatterometers	Quick Scatterometer (QuikSCAT)	
85	Nansen Bottles		
86	Nets		
87	Nets	Gill Nets	
88	Nets	Plankton Nets/Drop Nets	
89	Nets	Plankton Nets/Drop Nets	Phytoplankton Nets
90	Nets	Plankton Nets/Drop Nets	Zooplankton Nets
91	Nets	Seine Nets	
92	Nets	Surface Nets	
93	Niskin Bottles		
94	Pressure Gauges		
95	Profiling Float		
96	Profiling Float	Autonomous Profiling Float	
97	Pumps		
98	Radiation Sensors		
99	Radiometers		
100	Radiometers	Advanced Along-Track Scanning Radiometer (AATSR)	
101	Radiometers	Advanced Very High Resolution Radiometer (AVHRR)	
102	Radiometers	Coastal Zone Color Scanner (CZCS)	
103	Radiometers	Sea-Viewing Wide Field-of-View Sensor (SEAWIFS)	
104	Radiometers	Moderate Resolution Imaging Spectro-Radiometer (MODIS)	
105	Radiosondes		
106	Scintillation Counters		
107	SCUBA (observations and/or sampling)		
108	Seabed Vehicles		
109	SeaSoar		
110	Secchi Discs		
111	Sediment Traps		
112	SLAR (Side-Looking Airborne Radar)		
113	Sledges/Sleds		
114	SONAR		
115	Spectrometers		
116	Spectrometers	Medium Resolution Imaging Spectrometer (MERIS)	
117	Spectrophotometers		
118	Swath Mappers		
119	Tags and Tracking Devices		
120	Thermistors		
121	Thermometers		
122	Thermosalinographs		
123	Thin-Layer Chromatography		
124	Tide Gauges		

125	Trawls		
126	Trawls	Beam Trawls	
127	Trawls	Demersal Trawls	
128	Trawls	Midwater Trawls	
129	Trawls	Prawn Trawls	
130	Turbulence Sensors		
131	Visual Counts/Observations		
132	Water Column Samplers		
133	Wave Recorders		
134	X-Ray Microanalysers		