

DEFENSE INSTALLATION SPATIAL DATA INFRASTRUCTURE (DISDI)

DISDI GEOSPATIAL METADATA PROFILE 1.0



Installations & Environment Business Enterprise Integration

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Executive Summary

The Defense Installation Spatial Data Infrastructure (DISDI) is a Department of Defense (DoD, or the Department) mission capability comprised of those people, policies, and practices necessary to acquire, steward, and share installation, environmental, and range geospatial data assets for defense, federal, and national goals.

This DISDI Geospatial Metadata Profile specification is a profile of International Organization for Standardization (ISO) 19115:2003 *Geographic Information – Metadata*. It is based on the DoD Information Technology Standards Registry (DISR) mandate to implement this standard and provides the technical details for supporting the objective to define a well-structured and unified set of data elements to describe DoD Installations & Environment (I&E) Business Mission Area geospatial data assets. It is standards-based by design and is intended to support the ability of the geospatial community to describe its data holdings (such as the Spatial Data Standard for Facilities, Infrastructure, and Environment) and to harmonize with other mandated DoD information management strategies to reduce redundant data entries.

The Profile has been developed by the DISDI Metadata Working Group (DMWG), coordinated across all Component Installation Geospatial Information & Services (IGI&S) programs, and has been approved by the DISDI Group (DISDIG).

Implementation of this Profile is the responsibility of all component IGI&S programs, including management of conformance as outlined herein. Component mission- specific data stewards supporting relevant installation mapping are subject to the use of this Profile and shall follow their respective Component IGI&S methodologies.



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Introduction

The DISDI Geospatial Metadata Profile is intended to satisfy the most basic needs of a wide range of user communities that require detailed information to describe and understand datasets developed within the DoD I&E Business Mission Area. Although a variety of methods are available to describe geospatial information, the Department now requires semantic languages to be uniformly defined and employed. Fortunately, metadata is being wholly embraced within the Department and performs a primary role in supporting mission operations and capabilities.

The geospatial community has long known the value of metadata and has emphasized its importance for many years by incorporating some form of its use. As a result, the majority of all IGI&S datasets have incorporated the use of the Federal Geographic Data Committee's (FGDC) Content Standard for Digital Geospatial Metadata (CSDGM), established in 1998. As outlined in Office of Management and Budget Circular A-16, this federal standard has provided the Department's geospatial activities a valuable source of guidance for establishing a rich set of attributes to describe geospatial data.

Since its inception, the CSDGM has become well-entrenched within the geospatial culture. However, there have been many interpretations and inconsistent uses of CSDGM elements as well. As a result, these variations have created significant challenges to the user community when trying to resolve the applicability or fitness-of-use of a particular feature, attribute, or dataset. The complexity exponentially increases when one considers the large number of CSDGM-related entities that may be chosen and becomes further convoluted by the aggregation of information from various sources. Compounding the scenario even more, as organizations mature to the point of enterprise-level, service-oriented architectures, reliance on dated specifications have exposed serious inefficiencies. Without a formalized mechanism in place to capture and catalog the unique, semantic uses of the CSDGM attribute interpretations, the concept of useful data sharing is defeated.

It is these factors that have compelled the DISDIG to establish a more structured method for characterizing the Department's geospatial assets within the Business Mission Area. In 2003, the International Organization for Standardization (ISO) 19115:2003 *Geographic Information – Metadata* was adopted and inserted into the DISR, further emphasizing the need for the Department to employ well-structured standards with the ability to support discovery, accessibility, and clear understanding of vocabularies and use of semantics.

Currently the FGDC is in the process of drafting a new CSDGM version in conjunction with the Canadian Geospatial governance body. This *North American Profile* (NAP) will profile ISO 19115 and as such, will enable those DoD organizations that have already implemented the DISR-mandated standard to more quickly adopt and align with the FGDC metadata profile when it is delivered. This move ensures I&E community implementation of DoD doctrine and reduces the potential for significant mission impact when the need to harmonize with change is imposed from federal mandates.

In the interest of establishing a realistic implementation with clearly defined classes of information and establishing a profile that meets the immediate needs of the DISDI Community of Interest, the DISDIG has concluded that standardization of this profile shall



be managed through versioned releases. This initial profile focuses on the most basic and common requirements, the DISDI Core. Subsequent work in other areas not mandated in this version (*i.e.*, Data Quality) will be addressed directly by the DMWG and/or in conjunction with other efforts, such as quality assurance planning.



1 Scope

This DISDI Geospatial Metadata Profile specification establishes the initial target implementation environment for all Installation GI&S investments utilized within the DoD I&E Business Mission Area. It is intended to provide a full description of a geospatial dataset, resulting in a catalog of information that captures details describing identification, constraint, maintenance, reference system, and distribution information as it relates to geospatial datasets and series developed, maintained, and/or employed within the I&E Business Mission Area and across the Department's Global Information Grid.

The profile provides definitions for all mandatory and conditional metadata entities and elements that describe a geospatial asset. It does not specify collection parameters. It offers a minimum set of required metadata elements that are common to the Components, is aligned with the NSG Core Metadata Profile (NGCMP), and can support data discovery, access, and use.

An extensive set of additional optional metadata elements within ISO 19115 (also outlined in Appendix A) shall be used to expand this Profile in accordance with rules established in Appendix C, *Extensions and Profiles*, of this document.

The DISDI Metadata Profile specification shall be reviewed at least once a year during the first 3 years of implementation. This increased frequency allows for planned and unanticipated adjustments to be incorporated during this timeframe. Following this initial 3-year review cycle, the profile will then be subject to the same life-cycle review associated with the DISR, a minimum 3-year review cycle.



2 Conformance

2.1 Conformance Requirements

This Profile adheres to Annex C, *Metadata extensions and profiles*, ISO 19115:2003, *Geographic Information – Metadata*.

As specified by the DISDIG, this common framework allows geospatial data to be shared in accordance with DoD Discovery Metadata Specification (DDMS) and ensures that the goals of the DoD net-centric enterprise service data strategy (as outlined in DoD Directive 8320.2, *Data Sharing in a Net-Centric Department of Defense*) are supported. In addition, this specification follows NSG metadata development guidelines and as such positions this standard to be formally registered within the DISR.

Any metadata generated within the DoD I&E Business Mission Area and asserting conformance to this DISDI Geospatial Metadata Profile shall be encoded with extensible markup language (XML) and conform to the DISDI Metadata Profile XML schema.

Geospatial metadata created or used in support of DoD I&E Business Mission Area operations shall follow the mandatory and conditional requirements outlined in Section 6, *Content Requirements*; Appendix A, *Data Dictionary for DISDI Geospatial Metadata*; and Appendix B, *Code Lists and Enumerations*, of this document.

2.2 Metadata Profiles and Extensions

Appendix C, *Extensions and Profiles*, provides the rules for extending or creating profiles of the DISDI Geospatial Metadata Profile. All I&E Business Mission Area geospatial data assets shall be described using the rules provided in Appendix C of ISO 19115:2003 *Geographic Information – Metadata* to ensure consistency of use across the Department.

The framework for this Profile can and is expected to be modified and extended to meet the specific needs of the individual Components, their applications, and their installation mission support business processes. Following a set of defined rules helps to ensure consistency, and this specification is provided to guide those who seek to extend or profile this standard to meet the requirements of their specific community.

It is important to note that any formal modification to this Profile can result in the loss of interoperability as a result of changes in a new community XML schema. However, interoperability can be maintained by creating translation tools that allow information to be shared within defined business processes. Discussion regarding XML schema and translation tools is beyond the scope of this document but must be understood by those communities choosing to modify this standard.

2.3 Obligation and Conditions

The obligation and conditions are clearly outlined within Section 6 of this standard. In cases where a mandatory (M) or conditional (C) entity is required, all who claim conformance to this standard will be required to meet the definition of the data element being described without modification.



The *DISDI Metadata Test Suite* (Appendix D) provides details for testing conformance of obligations within this Profile. In addition, the Profile XML schema will be used to enforce well-formed XML syntax and proper use of the standard.

In cases where this Profile does not require, or set conditions for specific use of a metadata entity, ISO 19115:2003 *Geographic Information – Metadata* and ISO 19115:2006:—1), *Geographic information — Metadata, Technical Corrigendum 1* shall be referenced and used.



3 References

3.1 Normative References

The following referenced documents support the implementation of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including amendments) applies.

Department of Defense Discovery Metadata Specification (DDMS), August 10, 2007, Deputy Assistant Secretary of Defense/Deputy Chief Information Officer.

ISO 639-2:1998, *Codes for the representation of names of languages – Part 2: Alpha-3 code*

ISO 3166 (all parts), *Codes for the representation of names of countries and their subdivisions*

ISO 8859 (parts 1 to 16), *Information technology — 8-bit single-byte coded graphic character sets*

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/IEC 11179 (all parts), *Information technology — Specification and standardization of data elements*

ISO 19106:—1, *Geographic information — Profiles*

ISO 19107:—1, *Geographic information — Spatial schema*

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

ISO 19109:—1, *Geographic information — Rules for application schema*

ISO 19110:—1, *Geographic information — Methodology for feature cataloguing*

ISO 19111:2003, *Geographic information — Spatial referencing by coordinates*

ISO 19112:—1, *Geographic information — Spatial referencing by geographic identifiers*

ISO 19115:2003:—1, *Geographic information — Metadata*

ISO 19115:2006:—1, *Geographic information — Metadata, Technical Corrigendum 1*

ISO 19118:—1, *Geographic information — Encoding*

ISO 19139:2007—1, *Geographic information — Metadata — XML schema implementation*

3.2 Informative References

The following publications were referenced to support the development of this Profile.

Content Standard for Digital Geospatial Metadata Workbook, Version 2.0, May 1, 2000, Federal Geographic Data Committee

Defence Imagery and Geospatial Organisation, *Data Management Profile of ISO 19115:2003 Geographic Information – Metadata, Draft Version 1.15*, Australian Government Department of Defence, Intelligence & Security.

Department of Defense Directive 5200.1-R Department of Defense Information Security Program, January 14, 1997, Assistant Secretary of Defense for Command, Control, Communications, and Intelligence.



Department of Defense Directive 8320.2 Department of Defense Data Sharing in a Net-Centric Department of Defense, Version 1.0, May 9, 2003, Department of Defense Chief Information Officer.

Department of Defense Information Technology Standards Registry (DISR) Baseline, Release 06-3.0, October 25, 2006, Deputy Chief Information Officer.

Department of Defense Installation Visualization Tool Quality Assurance Plan (IVT QAP), Version 1.1, December 31, 2003, IVT Program Office, Headquarters Air Force Geo Integration Office.

Content Standard for Digital Geospatial Metadata (CSDGM), Version 2.0, 1998, *Federal Geographic Digital Committee (FGDC)*.

Federal Geographic Digital Committee (FGDC) – International Standardization Organization (ISO) Crosswalk, Version 4.0, April 17, 2003, Intergraph Corporation.

National System for Geospatial-Intelligence (NSG) Core Metadata Profile (NGCMP), Version 1.0, August 2007, National Geospatial-Intelligence Agency (NGA).

White Paper: A Common DoD Business Mission Area Metadata Profile, October 12, 2006, Defense Installation Spatial Data Infrastructure (DISDI).



4 Acronyms and Glossary

4.1 Acronyms

CRS – Coordinate Reference System

CSDGM – Content Standard for Digital Geospatial Metadata

DDMS – Department of Defense Discovery Metadata Specification

DISDI – Defense Installation Spatial Data Infrastructure

DISDIG – DISDI Group

DISR – Department of Defense Information Technology Standards Registry

DMWG – DISDI Metadata Working Group

DoD – Department of Defense

DSN – Defense Switched Network

FGDC – Federal Geographic Data Committee

IGI&S – Installation Geospatial Information & Services

GI&S – Geospatial Information & Services

I&E – Installations & Environment

ISO – International Organization for Standardization

NSG – National System for Geospatial-Intelligence

POC – Point of Contact

SME – Subject Matter Expert

UML – Unified Modeling Language

XML – Extensible Markup Language

4.2 Glossary

Business Mission Area

A defined area of responsibility with function and processes contributing to mission accomplishment.

Component

The Office of the Secretary of Defense, the Military Departments, the Chairman of the Joint Chiefs of Staff, the Combatant Commands, and the Defense Agencies.

Dataset

An array or suite of data that has been identified as a single collection of information.

Geographic dataset



A collection of information that represents physical geospatial features. Not to be confused with vendor- specific implementations (for example, ESRI dataset).

Geospatial Information & Services

The concept for collection, information extraction, storage, dissemination, and exploitation of geodetic, geomagnetic, imagery, gravimetric, aeronautical, topographic, hydrographic, littoral, cultural, and toponymic data accurately referenced to a precise location on the earth's surface. These data are used in the battlespace for military planning, training, and operations, including navigation, mission planning, mission rehearsal, modeling, simulation, and precise targeting, as well as in the basingspace to provide situational awareness for force protection and management of the built and natural infrastructure. For the purposes of this specification, Business GI&S refers to those GI&S activities that support and enhance core business missions and business enterprise priorities as defined in the DoD Business Enterprise Architecture, in support of DoD business transformation. Geospatial information provides the basic framework for battlespace visualization. It is information produced by multiple sources to common interoperable data standards. It may be presented in the form of printed maps, charts, and publications; in digital simulation and modeling databases; in photographic form; or in the form of digitized maps and charts or attributed centerline data. Geospatial services include tools that enable users to access and manipulate data and also include instruction, training, laboratory support, and guidance for the use of geospatial data.



5 UML Model, Symbols, and Notation

5.1 UML Models

The Unified Modeling Language (UML) is used to control and manage the DISDI Geospatial Metadata Profile. It is an internationally accepted method of standards modeling and is presented in Section 6 to visualize the relationships among the various metadata entities.

UML can be used to represent a variety of model types that support conceptual, specification, and implementation constructs. A **conceptual** model provides a diagram that defines theoretical entities, objects, or conditions of a system and the relationships that exist between them. The **specification** model describes the domains in a manner that is independent of any computer or system representation of the model. The **implementation** model describes the realization of the specific domain and system values related to the characteristics of the underlying platform.

This document and associated UML models represent the *specification model*. The supporting DISDI Geospatial Metadata Profile XML schema is based on ISO 19139 and represents the profile's *implementation model*.

The diagrams in this document use the UML static structure convention provided by the ISO Interface Definition Language basic type definitions and the UML Object Constraint Language for the conceptual schema language.

5.2 UML Notation

The notations used are described as follows:

Relationships:

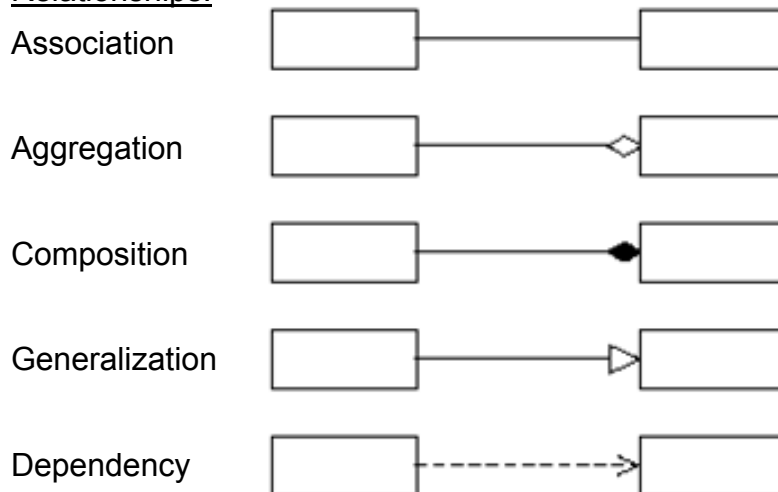
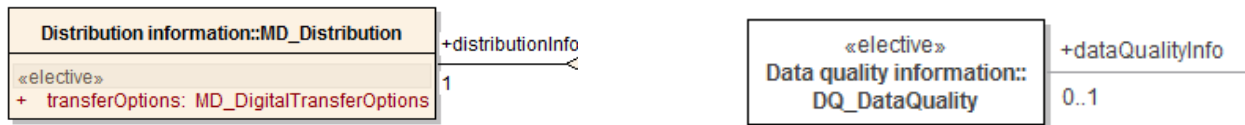


Figure 5.1 — Relationship Types



Shading of a class indicates that it is a mandatory element for this profile and must be instantiated, while a non-shaded class indicates it as optional. The stereotype <<elective>> (defined in section 5.4) has been assigned to the profile's notation to help identify the *optional* assignment to the profile's classes and attributes.



5.3 UML Relationships

5.3.1 Association

An **association** is a semantic description of a relationship between two or more elements. UML models can define three types of relationships—ordinary, aggregate, and composite associations.

Ordinary associations represent a general relationship between two elements, and if an arrow is not drawn at either end of the solid line, navigability is assumed to be in both directions.

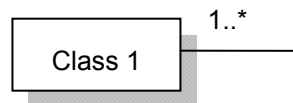


Figure 5.2 — Association Cardinality

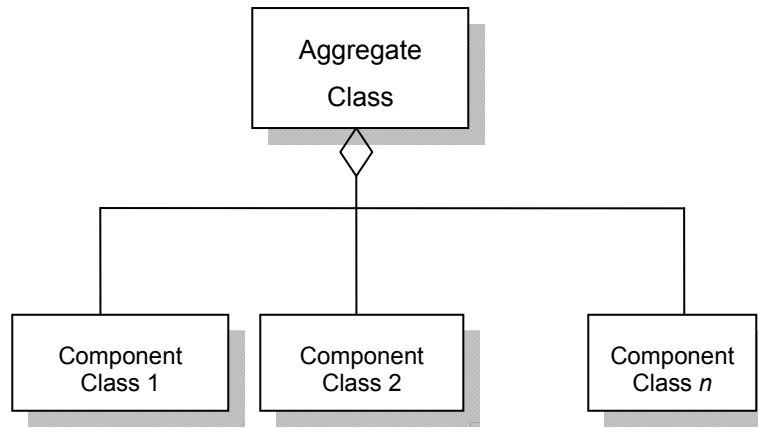
The cardinality of the association is portrayed in Figure 5.2 and is identified with the following notation:

- 1 is exactly one
- 0..* is zero or more
- 0..1 optional (zero or one)
- 1..* one or more
- n specific number



5.3.1.1 Aggregation

Aggregate associations represent a relationship between elements in which one element references (contains) other elements.

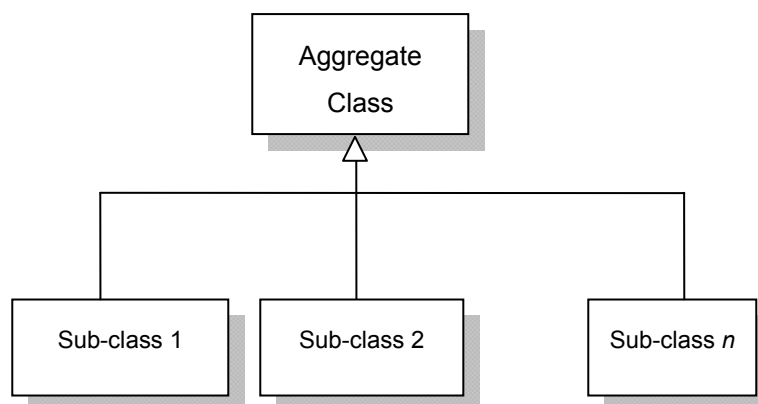


5.3.1.2 Composition

Composite associations act as a binder. This association is used when the individual elements of the referencing object cannot exist independently. As a result, when the container object is deleted, all the contained objects are deleted as well.

5.3.2 Generalization

A **generalized** relationship is a class of information that consists of a specific set of elective sub-elements. The entity hierarchy shows the overarching (superclass) element being a generalized element, while the sub-elements (sub-class) are specified elements.





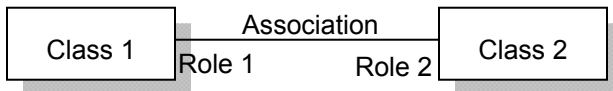
5.3.3 Dependency

A **dependency** shows the relationship between a client element (specified) and a supplier element/interface (client invokes supplier). In essence, the client requires receipt of an instance of the supplier.

An **instantiation** is the relationship representing the act of substituting actual values for the parameters of an element, to create a specified version of the more generalized item.

5.3.4 Roles

A role name is assigned to any association that is considered navigable and is appropriate for the target entity relative to its source. In cases where there is a double-ended association, two role names shall be assigned.



5.4 UML Stereotypes

A UML stereotype is a construct established to extend existing UML concepts. It is a modeling element that is used to classify other UML elements so they can convey behavior of new instances or virtual metamodel classes whose form is styled on existing base metamodel classes.

The following stereotypes form the basis of this specification model and are used throughout the DISDI Geospatial Metadata Profile:

<<Elective>> - a DISDI-specific, custom class used to designate non-mandatory objects (classes and/or attributes) as optional.

<<Type>> - class used for specification of a domain of instances (objects), together with the operations applicable to those objects. It may possess attributes and associations.

<<DataType>> - descriptor for a set of values lacking identity and whose operations do not have side effects. DataTypes include primitive pre-defined types (numbers/strings/times) and user-definable types (enumerations).

<<Enumeration>> - DataType whose instances form a list of named literal values with both the enumeration name and its literal value declared. An Enumeration contains a short list of well-understood potential values within a class.

<<CodeList>> - used to describe a more open or flexible enumeration, useful for expressing a long list of potential values. If elements of the list are completely known, an Enumeration should be used. If only likely values are known, a CodeList should be used.

<<Union>> - describes a selection of one of the specified types. It is used to specify a set of alternative classes/types that may be used without the need to create a common super-type or class.



<<Abstract>> - is a class or other classifier that cannot be directly instantiated. UML notation shows name in *italics*.

<<Metaclass>> - class whose instances are classes. An object class whose primary purpose is to hold metadata about another class.

<<Interface>> - named set of operations that characterize the behavior of an element.

<<Package>> - cluster of logically related components, containing sub-packages.

<<Leaf>> - package that contains definitions, without any sub-packages.



6 Content Requirements

6.1 Metadata Requirement for Geographic Data

This metadata profile identifies the core metadata elements required to describe DoD Business Mission Area geospatial assets. These mandatory requirements apply to all geospatial datasets and their aggregations. Each metadata section (package) contains one or more mandatory (M), conditional (C), and/or optional (O) metadata entities (classes).

In cases where an optional class is not instantiated, the use of its mandatory sub-classes or attributes do not apply.

The mandatory and conditional UML classes are provided here, along with each element's definition, usage description, and default value (if applicable). Where possible, example values have been provided. An entity that uses a code list does not have example values and can be referenced in Appendix B. A limited number of well-known *optional* classes (*i.e.* Data Quality) are also included in this section to provide visibility to traditionally used entities.



6.2 Metadata Packages and Entity Descriptions

6.2.1 Metadata Entity Set Information (MD_Metadata)

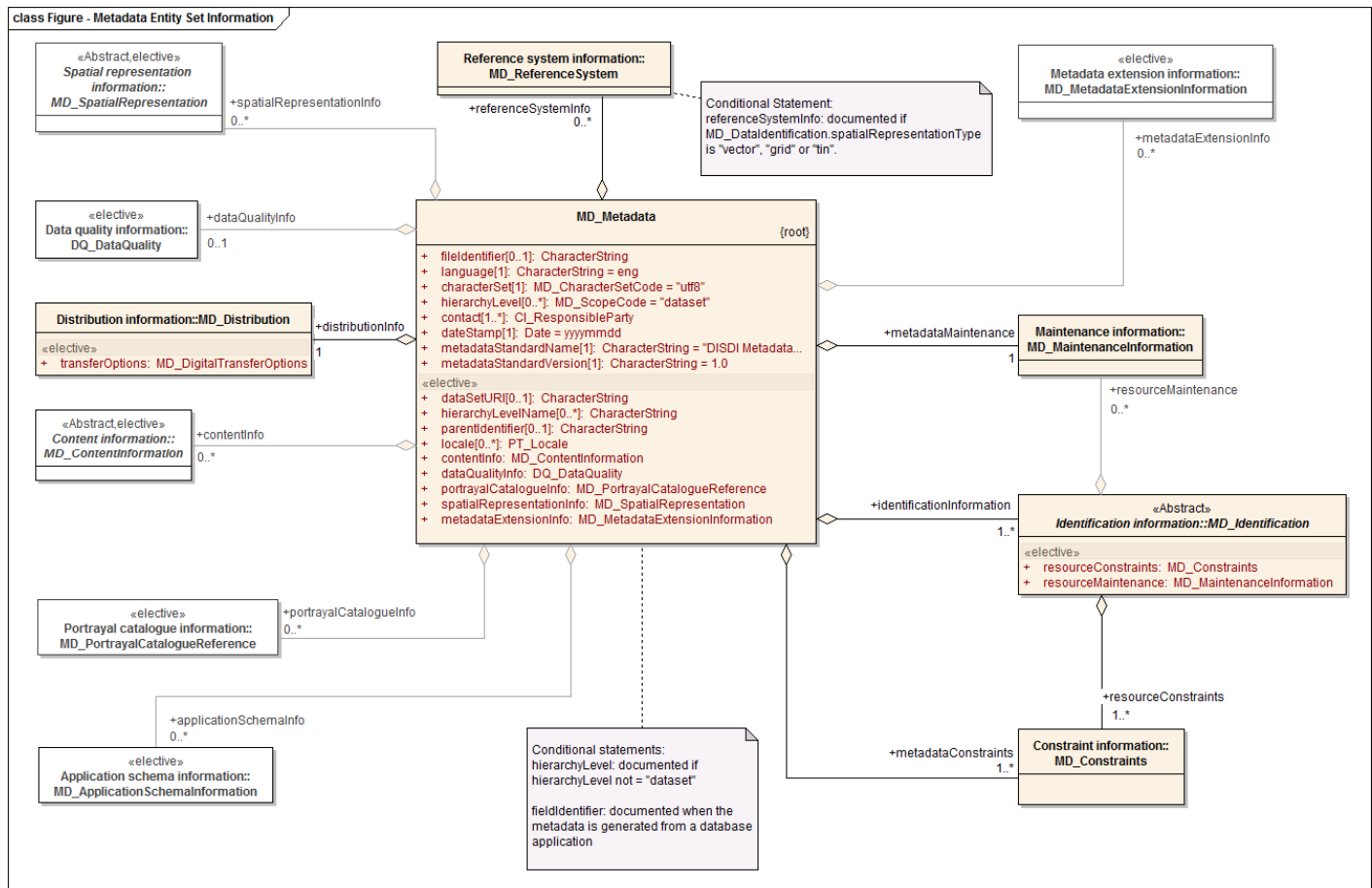


Figure 6.1 — Metadata Entity Set Information

The information representing the Metadata Entity Set package, illustrated in Figure 6.1, is an aggregated superclass containing the elements presented in sections 6.2.2 through 6.2.11. It is the primary node of the DISDI Geospatial Metadata Profile and establishes the mandatory and conditional elements that shall be used. This class provides the overview descriptions necessary to establish understanding and use of the metadata entity. Sections 6.2.12 through 6.2.21 are the <<data Type>> classes of information that support this primary node and its subclasses.

6.2.1.1 fileIdentifier (C)

Definition:

A unique phrase or string which uniquely identifies the metadata file.

Condition Statement:

If the dataset filename is not the same as the metadata file, then *fileIdentifier* is mandatory. If the metadata is generated from a database application, then the *fileIdentifier* is mandatory in order to link the metadata to the database.

**Usage Description:**

This unique identifier is instantiated only when the metadata filename differs from the resource being described. No guidance has been provided on how to encode a file-based naming convention.

Default Value:

None

Example Value:

“4D2707A0-9FFC-41A6-A3B5-34BD272A9BA4”

“urn:uuid: 550e8400-e29b-41d4-a716-446655440000”

6.2.1.2 language (M)**Definition:**

The language used for metadata documentation.

Usage Description:

This captures the default language of the metadata file. The three-letter reference code from ISO 639-2:1998 *Codes for the representation of names of languages – Part 2: Alpha-3 code* shall be used to populate this attribute.

Default Value:

“eng”

Example Value:

“ger” for German

6.2.1.3 characterSet (M)**Definition:**

Character coding standard of the metadata.

Usage Description:

Describes the character symbols that a system can recognize and process.

Code list *MD_CharacterSetCode* (Appendix B.9) shall be used.

Default Value:

“utf-8”

6.2.1.4 hierarchyLevel (C)**Definition:**

Dataset echelon to which the metadata applies.

Condition Statement:

If the *hierarchyLevel* of the metadata is not equal to “dataset,” then this is a mandatory attribute.

Usage Description:

Describes the class of information to which the metadata applies.



This attribute is used to assist data stewards in establishing the specific ranking of the data being described. Levels other than “dataset” provide opportunities for advanced metadata management strategies to be incorporated at a more focused level of detail. This specification does not currently provide guidance on the use of hierarchy levels beyond the “dataset” designation.

If the hierarchy is unknown then the default value shall be “dataset.”

Code list *MD_ScopeCode* (Appendix B.24) shall be used.

Default Value:

”dataset”

6.2.1.5 hierarchyLevelName (C)

Definition:

Name of the hierarchy levels for which the metadata is provided.

Condition Statement:

If the *hierarchyLevel* of the metadata is not equal to “dataset,” then this is a mandatory attribute.

Usage Description:

This element is a free-text field that labels the type of information being described for the hierarchy level. It will be used to support any advanced methods for metadata management such as those associated with feature level metadata.

Default Value:

None

6.2.1.6 contact (M)

Definition:

The party responsible for the content of the metadata.

Usage Description:

This represents the organization directly responsible for metadata maintenance. The subclass 6.2.14 *Responsible Party* shall be used.

The metadata point of contact (POC) will be the individual responsible for authoring the metadata file.

Default Value:

None

6.2.1.7 dateStamp (M)

Definition:

Metadata creation date.

Usage Description:

The date of metadata creation or the last update, expressed as yyyy-mm-dd.

Default Value:

None



Example Value:

2006-05-30

6.2.1.8 metadataStandardName (M)

Definition:

Name of the metadata standard and profile being used.

Default Value:

“ISO 19115 DISDI Geospatial Metadata Profile”

6.2.1.9 metadataStandardVersion (M)

Definition:

The version of metadata standard and profile being used.

Default Value:

“1.0”

6.2.1.10 identificationInfo (M)

Definition:

Basic information as it applies to the metadata describing the dataset.

Usage Description:

Refer to section 6.2.2, for sub-class details of mandatory data elements.

Default Value:

None

6.2.1.11 metadataConstraints (M)

Definition:

Instructions that capture how the dataset is protected as it applies to use, legal, and security limitations.

Usage Description:

Refer to section 6.2.3 for sub-class details.

Default Value:

None

6.2.1.12 dataQualityInfo (O)

Definition:

Information to support assessment of the dataset value to meet a specific mission, operation, and/or task.

Usage Description:

Refer to section 6.2.4 for sub-class details.

Default Value:

None

6.2.1.13 metadataMaintenance (M)



Definition:

Information regarding sustainment of the dataset.

Usage Description:

Refer to section 6.2.5 for sub-class details.

Default Value:

None

6.2.1.14 spatialRepresentationInfo (O)

Definition:

Representation of digital vector and/or grid objects in the dataset.

Usage Description:

Refer to section 6.2.6 for sub-class details.

Default Value:

None

6.2.1.15 referenceSystemInfo (M)

Definition:

The description of the spatial and temporal reference systems used in the dataset.

Condition Statement:

If *MD_DataIdentification.spatialRepresentationType* (6.2.2.6) is “vector,” “grid,” or “tin,” then *referenceSystemInfo* is mandatory.

Usage Description:

Refer to section 6.2.7 for sub-class details.

Default Value:

None

6.2.1.16 contentInfo (O)

Definition:

The information about the feature catalogue and describes data coverage characteristics.

Usage Description:

Refer to section 6.2.8 for sub-class details.

Default Value:

None

6.2.1.17 portrayalCatalogueInfo (O)

Definition:

Provides information about the catalogue of rules defined for the portrayal of a resource(s)

Usage Description:

Refer to section 6.2.9 for subclass details.

Default Value:

None



6.2.1.18 distributionInfo (M)

Definition:

Information related to the distributor of and options for obtaining the dataset.

Usage Description:

Refer to section 6.2.10 for sub-class details.

Default Value:

None

6.2.1.19 applicationSchemaInfo (O)

Definition:

Information to describe the conceptual schema of the dataset.

Usage Description:

Refer to section 6.2.11 *Application Schema Information* for sub-class details.

Default Value:

None



6.2.2 Identification Information (MD_Identification)

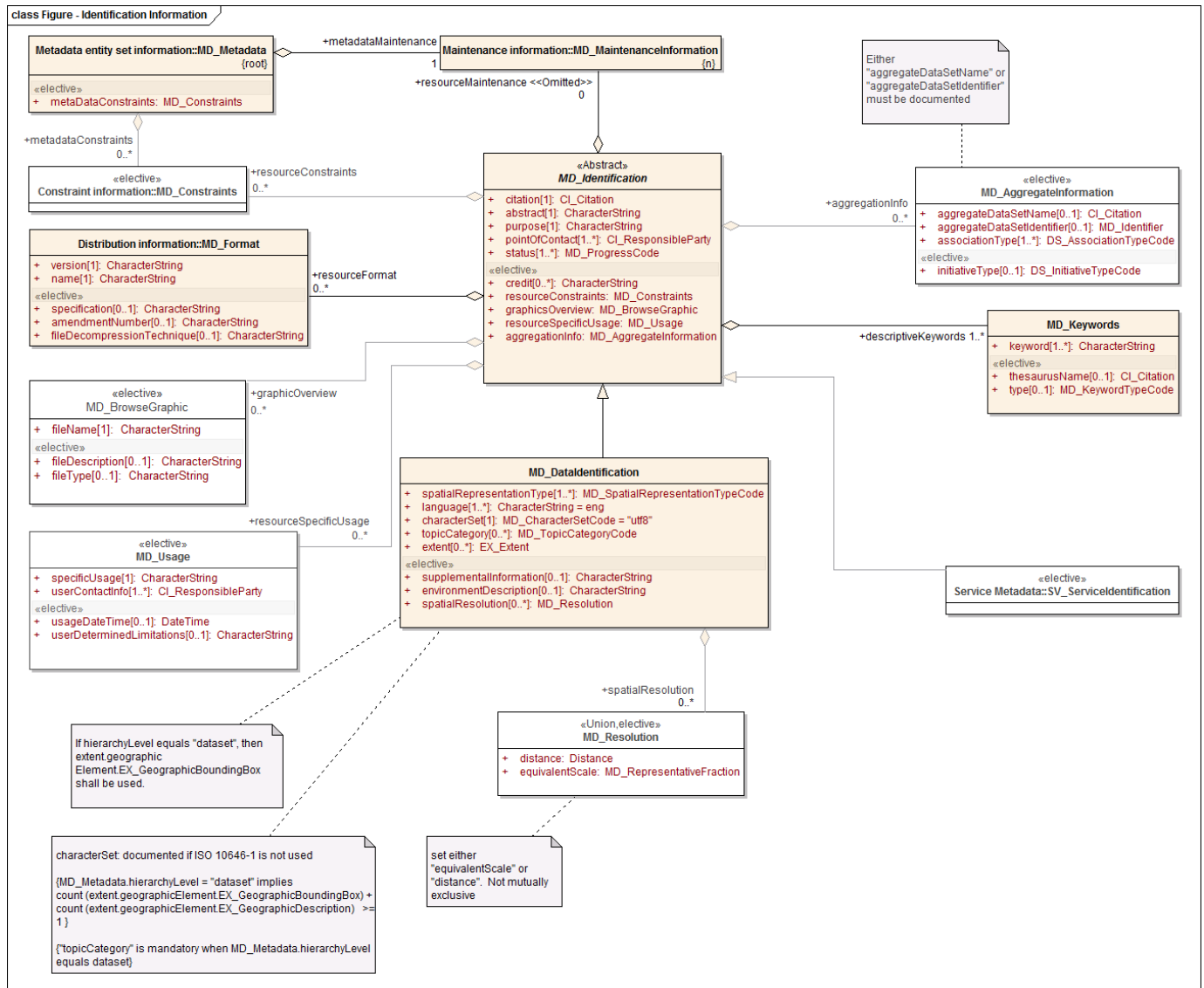


Figure 6.2 — Identification Information

Identification Information is a mandatory subclass that shall be used to specifically identify the data being described by the metadata. *MD_Identification* has the capability to support identification of data and service-related attribution. For the purposes of this metadata version, Identification Information will cover the *MD_DataIdentification* subclass only, not *MD_ServiceIdentification*.

6.2.2.1 citation (M)

Definition:

A description of the authoritative source for the resource being identified.

**Usage Description:**

The sub-class *CI_Citation* (section 6.2.13) shall be used to capture the minimum required data elements.

The attribute *CI_Citation.Title* shall be provided.

The attributes for the *MD_Identification.CI_Citation.citedResponsibleParty* sub-class shall be reported at least once.

The attributes for *CI_Citation.citedResponsibleParty.contactInfo* sub-class shall be reported.

The attribute for *CI_Citation.presentationForm* shall be reported.

Default Value:

None

6.2.2.2 abstract (M)**Definition:**

A brief synopsis of the dataset contents.

Usage Description:

Abstract narrative should include information on general content and features; dataset application: GIS, CAD, image, database; geographic coverage: region/installation name; and any special data characteristics or limitations that need to be highlighted.

Default Value:

None

Example Value:

“Compiled by the DoD Service to supplement decision making by visually interpreting validated BRAC data, depicting the geographic extent of Clear Zones and Accident Potential Zones I and II around runways and heliports at DoD installations and activities meeting Section 2687 threshold manpower criteria.”

6.2.2.3 purpose (M)**Definition:**

An explanation for the development of the resource and its intended use.

Usage Description:

This data element includes intended mission support objectives.

Default Value:

None

Example Value:

“This layer was created as part of the Air Force GeoBase Common Installation Picture to provide users with basic planimetric features. The data should be displayed and analyzed at scales appropriate for 1:1200-scale data.”

6.2.2.4 status (M)**Definition:**

The current state of development for the resource.

**Usage Description:**

The Code List *MD_ProgressCode* (Appendix B.22) shall be used.

Default Value:

None

6.2.2.5 pointOfContact (M)**Definition:**

Identification and means to contact people/organizations associated with the dataset

Usage Description:

The subclass *CI_ResponsibleParty* (section 6.2.14) shall be used to capture the minimum required data elements.

The point of contact should be the Subject Matter Expert (SME) who identified the data source, and shall not be the base-level GIS/mapping POC (unless the POC authoring the metadata file is the same person as the subject matter expert responsible for source selection). In the event the SME expert is a contractor, the organizational information should reflect the government office for which the contractor works, not the contractor company information.

The attribute *CI_ResponsibleParty.organisationName* shall be reported.

The attribute *CI_ResponsibleParty.positionName* shall be reported.

The subclass *CI_ResponsibleParty.contactInfo* shall be provided.

The attribute *CI_ResponsibleParty.role* will use the appropriate domain code from *CI_RoleCode* code list.

Default Value:

None

6.2.2.6 spatialRepresentationType (M)**Definition:**

The code used to characterize the spatial aspect of the dataset.

Usage Description:

The Code List *MD_SpatialRepresentationTypeCode* (Appendix B.25) shall be used.

Default Value:

None

6.2.2.7 language (M)**Definition:**

The language of the dataset.

Usage Description:

This captures the default language of the metadata file. The three-letter reference code from ISO 639-2:1998 *Codes for the representation of names of languages – Part 2: Alpha-3 code* shall be used to populate this attribute.

Default Value:

“eng”

Example Value:

“ger” for German

6.2.2.8 characterSet (M)Definition:

Character coding standard of the dataset.

Usage Description:

Describes the character symbols that a system can recognize and process.

Code list *MD_CharacterSetCode* (B.9) shall be used.

Default Value:

“utf-8”

6.2.2.9 topicCategory (C)Definition:

The primary theme(s) of the dataset.

Usage Description:

Provides general description of the dataset. More than one topic category can be reported. The first attribute populated shall be considered to be the primary descriptor.

Code list *MD_TopicCategoryCode* (B.26) shall be used.

Condition Statement:

If the *hierarchyLevel* is equal to “dataset,” then this is a mandatory attribute.

Default Value:

None

6.2.2.10 extent (C)Definition:

The geographic coverage of the dataset.

Condition Statement:

If *hierarchyLevel* equals “dataset,” then *extent.geographicElement.EX_GeographicBoundingBox* (section 6.2.12.5) shall be used.

Usage Description:

Section 6.2.12 shall be used to capture the minimum required data elements of for the extent of the dataset.

Default Value:

None

6.2.2.11 descriptiveKeywords (M)Definition:

Expressive words used to provide a clear understanding of the dataset.



Usage Description:

The subclass *MD_Keywords*, section 6.2.2.12, shall be used to capture the minimum required data elements for the dataset extent.

Default Value:

None

6.2.2.12 Keywords

Definition:

Expressive words used to describe the dataset and help build the formalized list of terms that support development of a thesaurus and other methods of data descriptors.

6.2.2.12.1 keyword (M)

Definition:

A list of commonly used words, formalized terms, or phrases to describe the dataset subject.

Usage Description:

More than one keyword can be reported.

Default Value:

None

Example Value:

“building”

“structure”

“facility”

6.2.2.13 resourceConstraints (M)

Definition:

The limitations or constraints on the use of or access to the resource.

Usage Description:

Refer to section 6.2.3 for sub-class details.

This attribute is used to capture constraint information about the dataset, separate from the constraints related to the metadata.

Default Value:

None



6.2.3 Constraint Information (MD_Constraints)

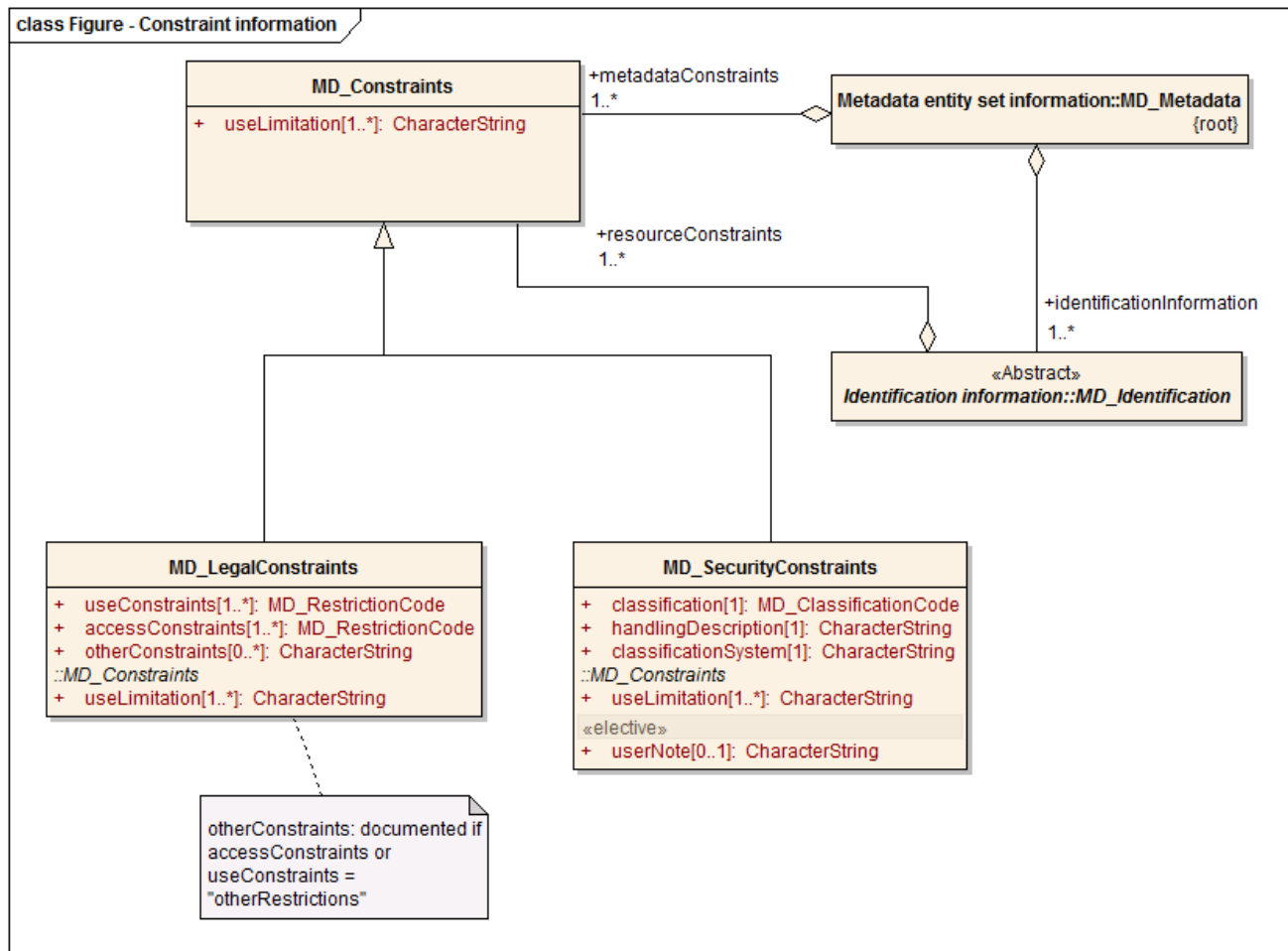


Figure 6.3 — Constraint Information

Constraint Information (*MD_Constraints*) is a mandatory class that shall be used to describe legal and security constraints placed on the resource to support access and use requirements.

6.2.3.1 Legal Constraints

Limitations and legal prerequisites for accessing and using the resource.

6.2.3.1.1 useLimitation (M)

Definition:

Legal controls placed on the resource to regulate its use.

Usage Description:

A free text data element utilized to establish legal use controls.

Default Value:

None

Example Value:



“USC Title 10 restrictions apply.”

6.2.3.1.2 accessConstraints (M)

Definition:

Controls placed on the resource to regulate retrieval.

Usage Description:

Controls to limit or prevent access for privacy, intellectual property, or any special limitations protection to access the resource.

The code list *MD_RestrictionCode* (Appendix B.23) shall be used to report this attribute.

Default Value:

None

6.2.3.1.3 useConstraints (M)

Definition:

Controls to be applied on how the resource is employed.

Usage Description:

Constraints applied to assure protection of privacy or intellectual property, and any special restrictions or limitations or warnings on *using* the resource.

The code list *MD_RestrictionCode* (Appendix B.23) shall be used to report this attribute.

Default Value:

None

Example Value:

“Not to be used for navigation.”

6.2.3.1.4 otherConstraints (C)

Definition:

Additional restrictions and legal prerequisites for accessing and/or using the resource.

Condition Statement:

If *accessConstraints* or *useConstraints* is equal to *otherRestrictions*,” then this attribute shall be documented.

Usage Description:

This is a free text field used to report non-standard access and use type constraints to support any type of constraint not covered within *MD_RestrictionCode* (Appendix B.23) code list.

Default Value:

None

Example Value:

“Access only granted to Air Force Security Forces personnel.”



6.2.3.2 Security Constraints

The handling restrictions imposed on the resource for protection concerns.

6.2.3.2.1 useLimitation (M)

Definition:

Security controls placed on the resource to regulate its use.

Usage Description:

A free text data element utilized to establish security controls.

Default Value:

None

Example Values:

“This document contains information exempt from mandatory disclosure under the Freedom of Information Act.”

6.2.3.2.2 classification (M)

Definition:

The category to which the resource is assigned based on the degree of protection considered necessary to safeguard it from unauthorized use.

Usage Description:

The code list *MD_ClassificationCode* (Appendix B.10) shall be used to report this attribute.

Default Value:

None

6.2.3.2.3 classificationSystem (M)

Definition:

The name of the classification scheme used to manage the classification of the resource.

Usage Description:

This attribute will report the valid name of the system from which the classification data element was established. It does not come from a controlled list.

If a classification system name is unknown or does not exist, then “None” shall be used.

Default Value:

“Department of Defense Information Security Program – DoD Directive 5200.1”

Example Value:

“None”

6.2.3.2.4 handlingDescription (M)

Definition:

A description of how the resource is managed or controlled

Usage Description:

Report on how the resource is required to be controlled.



Default Value:

None

Example Values:

- “This document contains information exempt from mandatory disclosure under the FOIA.”
- “Approved for public release; distribution is unlimited.”
- “Distribution authorized to U.S. government agencies only; [reason]; [date]. Other requests for this document shall be referred to [controlling DoD office].”
- Distribution authorized to the DoD and U.S. DoD contractors only; [reason]; [date]. Other requests for this document shall be referred to [controlling DoD office].
- Other requests for this document shall be referred to [controlling DoD office]. Further distribution only as directed by [controlling DoD office] or higher DoD authority; [date].
- Distribution authorized to U.S. government agencies and private individuals or enterprises eligible to obtain export-controlled technical data in accordance with DoD Directive 5230.25; [date]. Controlling DoD office is [controlling DoD office].



6.2.4 Data Quality Information (DQ_DataQuality)

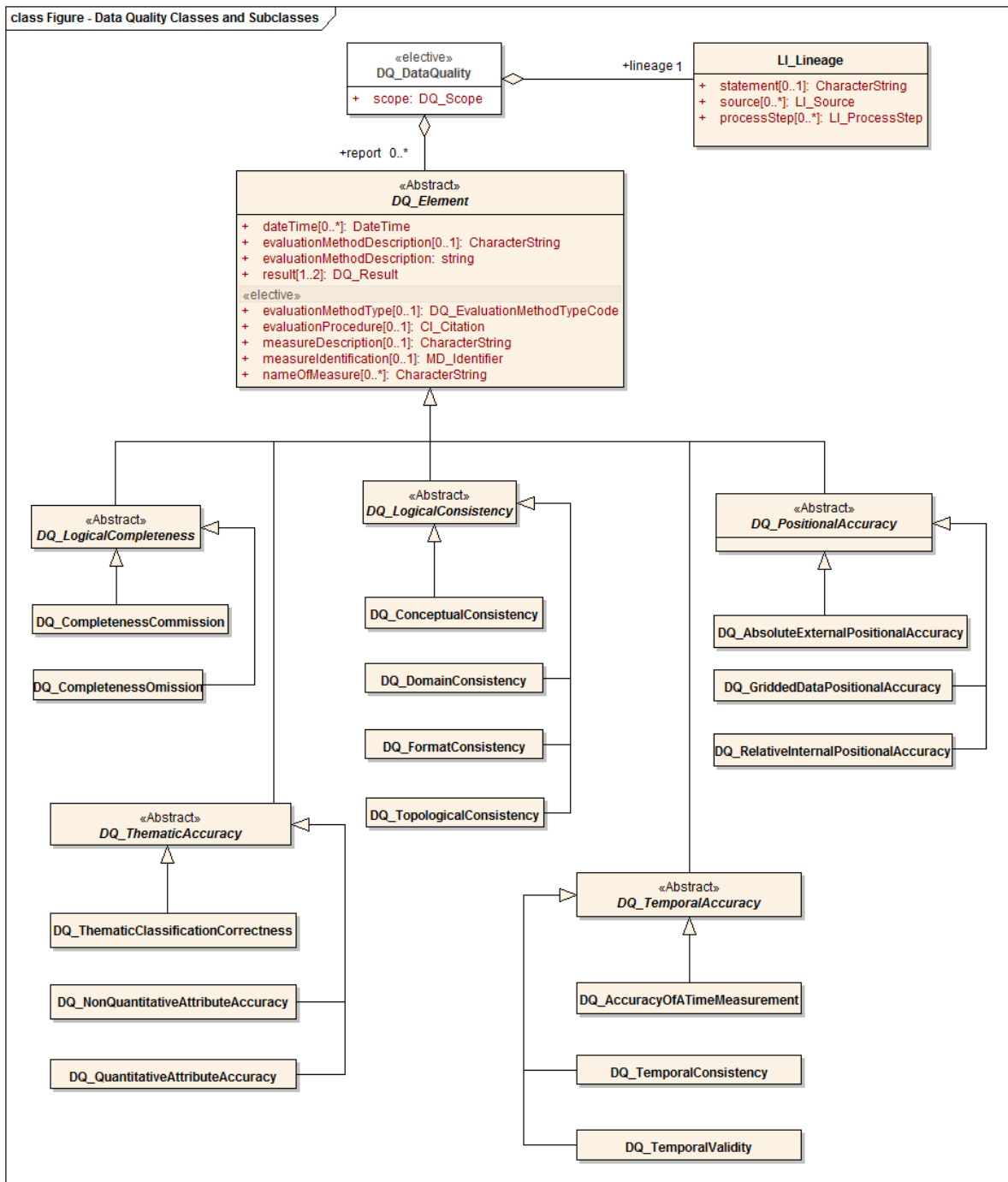


Figure 6.4 — Data Quality Information

Although data quality is an important class of information to help determine a resource's fitness-of-use, it will not be considered a mandatory requirement for this version of the DISDI Geospatial Metadata Profile.



6.2.5 Maintenance Information (MD_MaintenanceInformation)

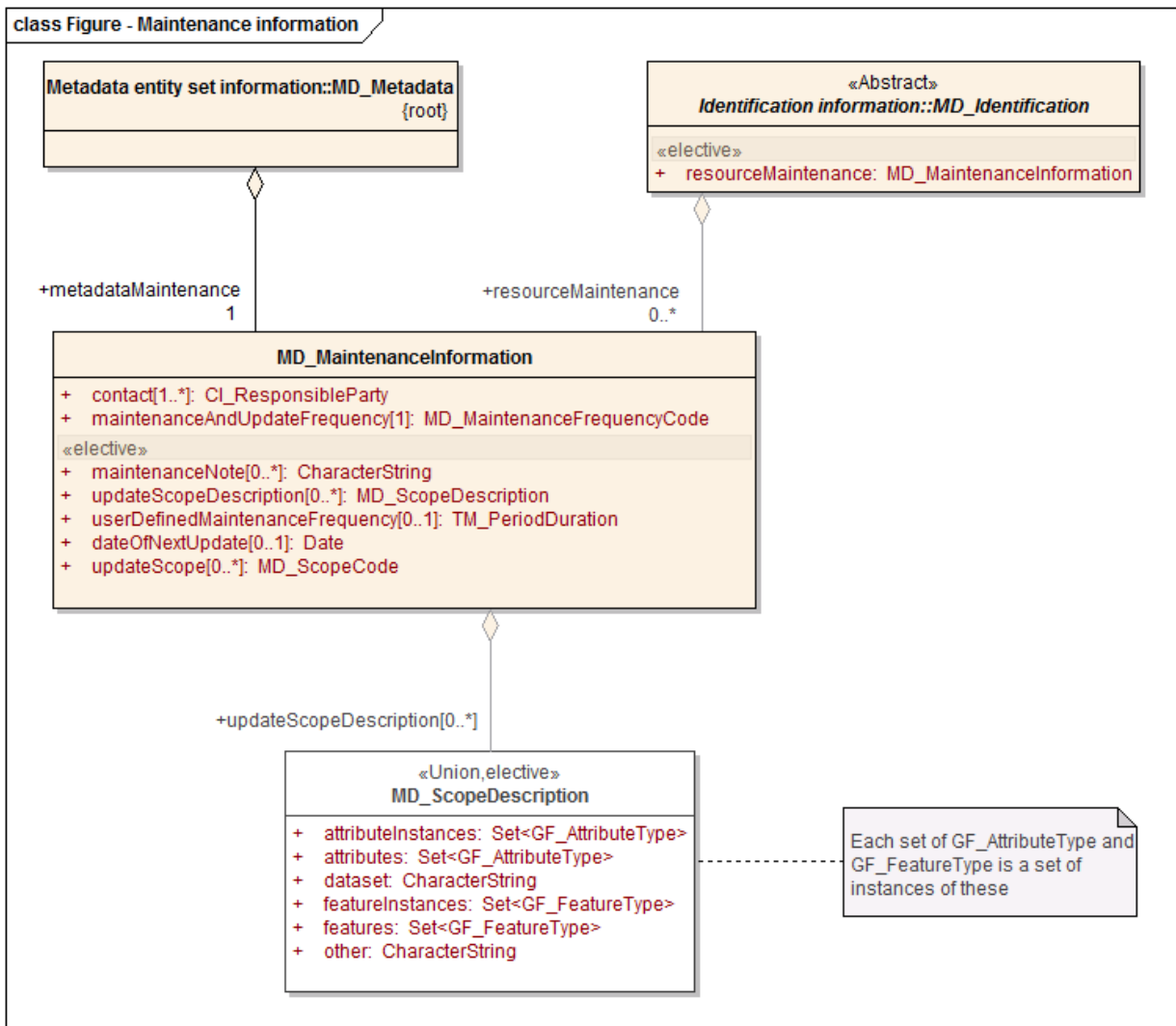


Figure 6.5 — Maintenance Information

Maintenance information encapsulates the class of data that allows for a clear understanding of how the resource is managed.

6.2.5.1 maintenanceAndUpdateFrequency (M)

Definition:

The report to identify how often the resource is updated or reviewed.

Usage Description:

The code list *MD_MaintenanceFrequencyCode* (Appendix B.17) shall be used.

Default Value:

None



6.2.5.2 contact (M)

Definition:

The party responsible for managing the resource update.

Usage Description:

Represents the organization directly responsible for upkeep of the resource. The class presented in section 6.2.14 shall be used.

Default Value:

None



6.2.6 Spatial Representation Information (MD_SpatialRepresentation)

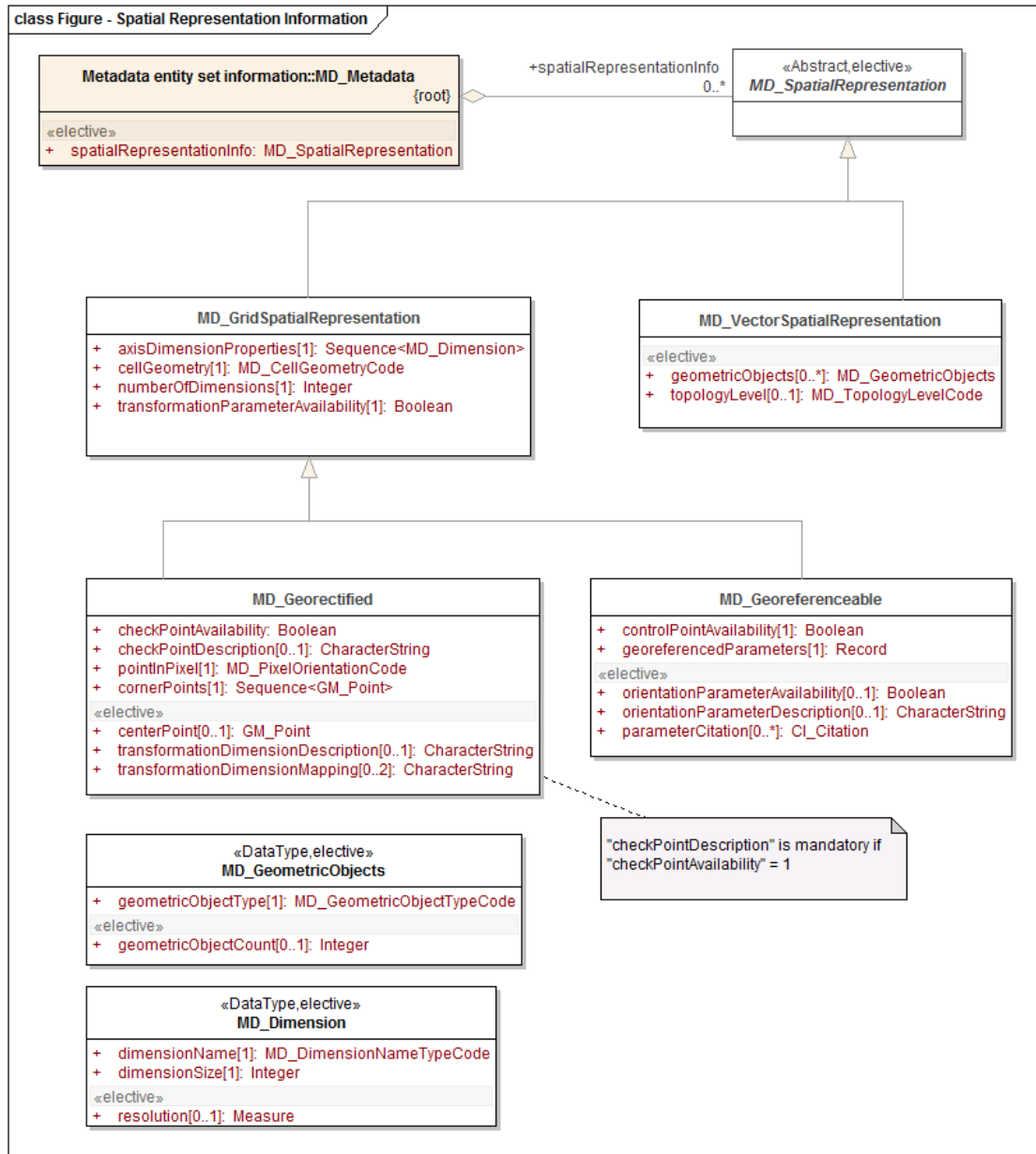


Figure 6.6 — Spatial Representation Information

Spatial representation information is the package used to report the spatial mechanisms of vector and gridded resources. This version of the DISDI Metadata Profile does not instantiate any mandatory *spatial representation* requirements.



6.2.7 Reference System Information (MD_ReferenceSystem)

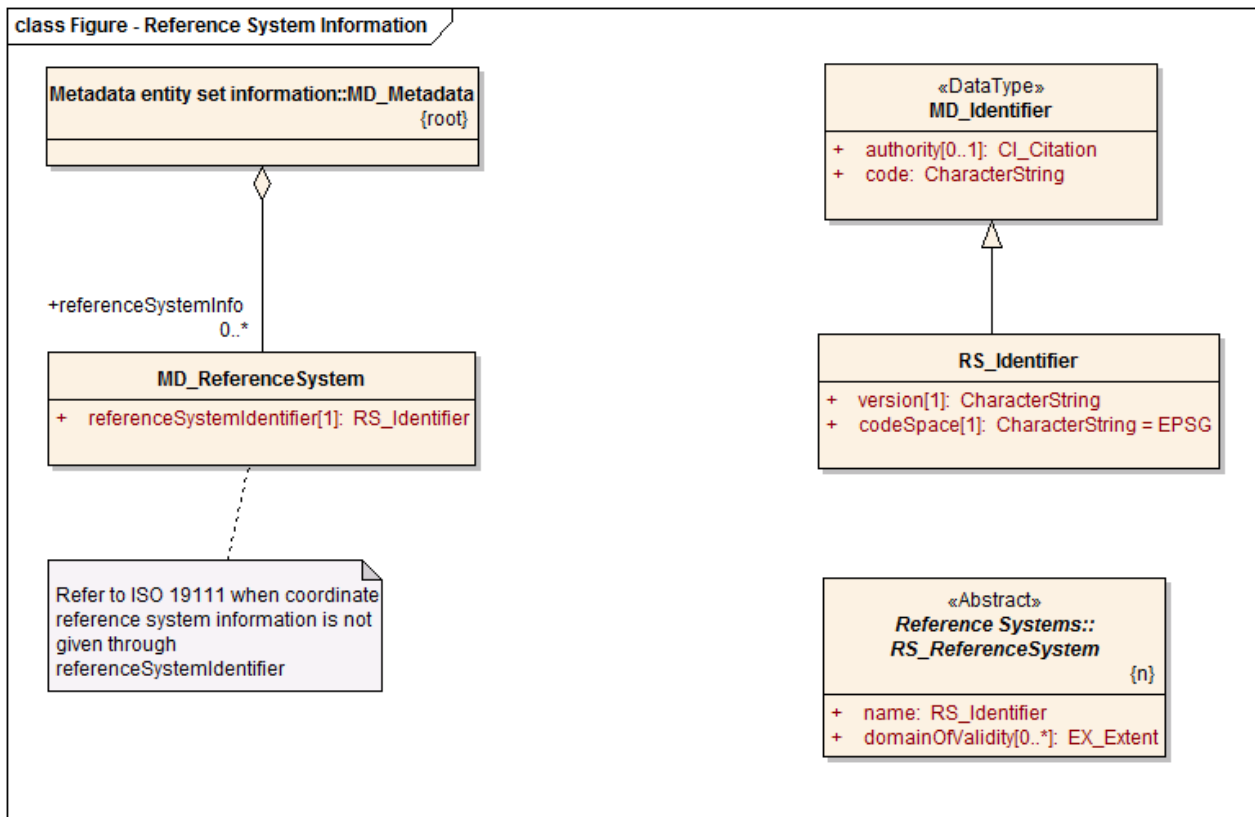


Figure 6.7 — Reference System Information

The reference system package provides the necessary data to identify how a spatial resource is positioned relative to the earth.

6.2.7.1 referenceSystemIdentifier (M)

Definition:

The name used to report the reference system being used for the resource.

Usage Description:

Attribution from *RS_Identifier* and *MD_Identifier* shall be used to report the appropriate coordinate reference system.

The EPSG (formerly known as the European Petroleum Survey Group) database is the de facto reference system catalogue of choice for most GIS systems and utilizes parameters that are aligned with ISO 19111, *Geographic information – Spatial referencing by coordinates*.

The EPSG registry can be accessed at <http://www.epsg-registry.org> and the EPSG database can be downloaded from http://www.epsg.org/databases/Discv6_15.html

The attributes supporting this class shall provide the reference system in an easy-to-interpret format.



Units of measure for the reference system are included in the referenced registry, not within the identifier itself.

Default Value:

None

6.2.7.1.1 code (M)

Definition:

This code is used to uniquely identify the reference system.

Usage Description:

Until the ISO TC/211 establishes a clear method of capturing the name of the reference system, this attribute shall be used.

Default Value:

None

Example Values:

“WGS 84 / UTM zone 13N”

“WGS_1984_UTM_Zone_13N”

6.2.7.1.2 codeSpace (M)

Definition:

The organization name or party responsible for the reference system resource.

Usage Description:

A free text field used to reference the *authority* (section 6.2.7.1.4) that represents the reference system.

Default Value:

None

Example Values:

“EPSG”

“ESRI ArcGIS”

6.2.7.1.3 version (M)

Definition:

The version of the cited *codeSpace* or registry/repository.

Usage Description:

The version of the *codeSpace* (section 6.2.7.1.2) used to identify the reference system.

Default Value:

None

Example Values:

“6.11”

“9.2”



6.2.7.1.4 authority (M)

Definition:

The party responsible for maintenance of the reference system resource.

Usage Description:

CI_Citation (section 6.2.14) shall be used to capture information related to the reference system registry/repository

Default Value:

None



6.2.8 Content Information (MD_ContentInformation)

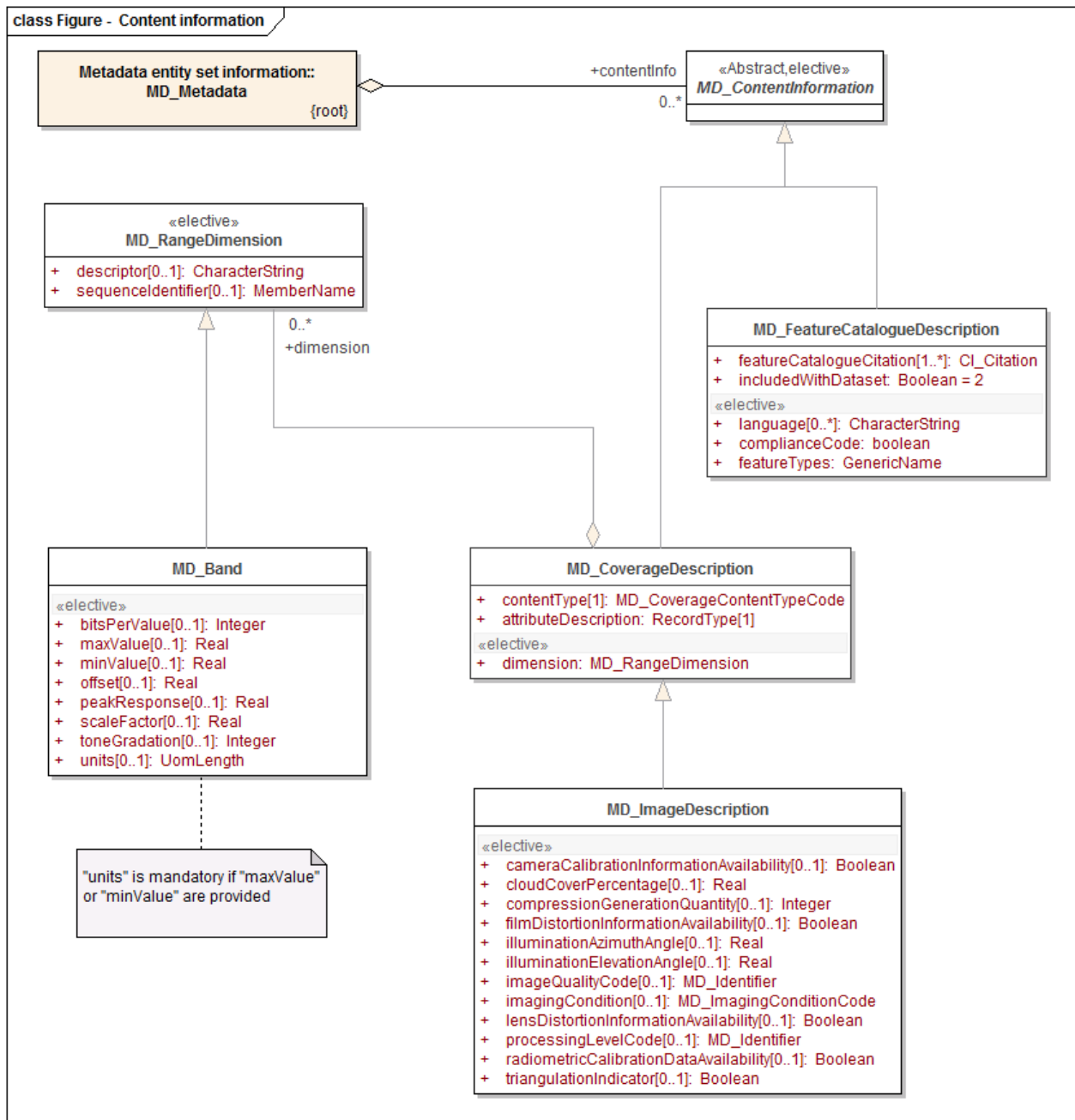


Figure 6.8 — Content Information

The content information section captures details relevant to a feature catalog and the description of the coverage. For the purpose of this DISDI Geospatial Metadata Profile version, content information is not a mandatory package.



6.2.9 Portrayal Catalogue Information (MD_PortrayalCatalogueReference)

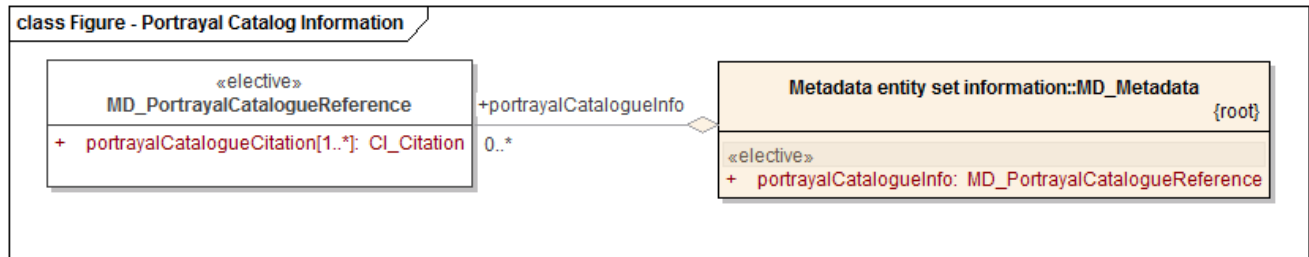


Figure 6.9 — Portrayal Catalogue Information

The portrayal catalog information section captures the citation of the portrayal catalog used for the cited reference. For the purpose of this DISDI Metadata Profile version, portrayal catalogue information is not a mandatory package.



Default Value:

None

6.2.10.1.1 distributorContact (M)

Definition:

The party from whom the resource may be obtained.

Usage Description:

This represents the organization directly responsible for distribution of the resource.

The sub-class 6.2.14 *Responsible Party* shall be used.

Default Value:

None

6.2.10.2 distributorFormat (M)

Definition:

Provides a description of the format of the data to be distributed.

Usage Description:

This role is used to articulate the type or form of resource being provided and will utilize the mandatory attributes from *MD_Format* (section 6.2.10.2.1-6.2.10.2.2).

Default Value:

None

6.2.10.2.1 name (M)

Definition:

name of the data transfer format(s)

Usage Description:

This attribute captures the name of the resource being distributed.

Default Value:

None

Example Value:

“ESRI Personal Geodatabase”

6.2.10.2.2 version (M)

Definition:

version of the format (date, number, etc.)

Usage Description:

The numeric or alphanumeric designation of the named format.

Default Value:

None

Example Value:

“9.2”



6.2.11 Application Schema Information (MD_ApplicationSchemaInformation)

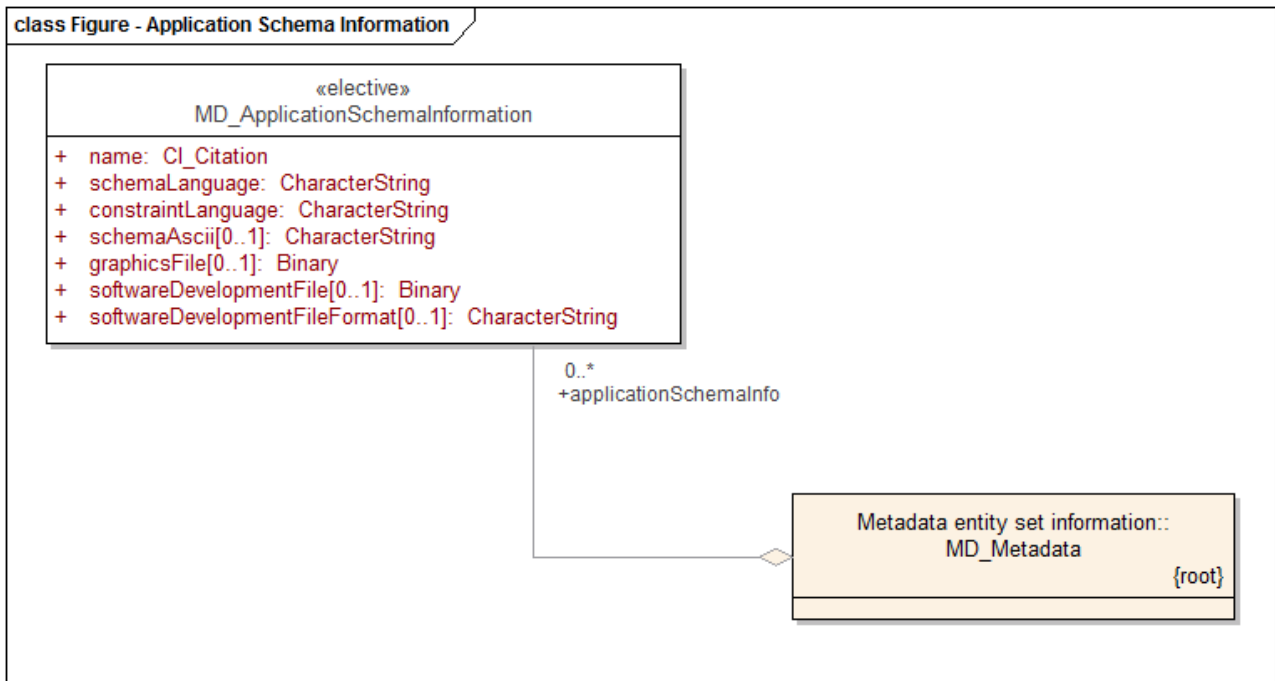


Figure 6.11 — Application Schema Information

An application schema is the conceptual schema for the resource to support one or more applications. Application schema information provides the means to report details regarding an application's use of the metadata. This section provides the linkage to the external standard ISO 19109, *Rules for Application Schema*. For the purposes of this version of the DISDI Geospatial Metadata Profile, application schema information is not mandatory.



6.2.12 Extent Information (EX_Extent)

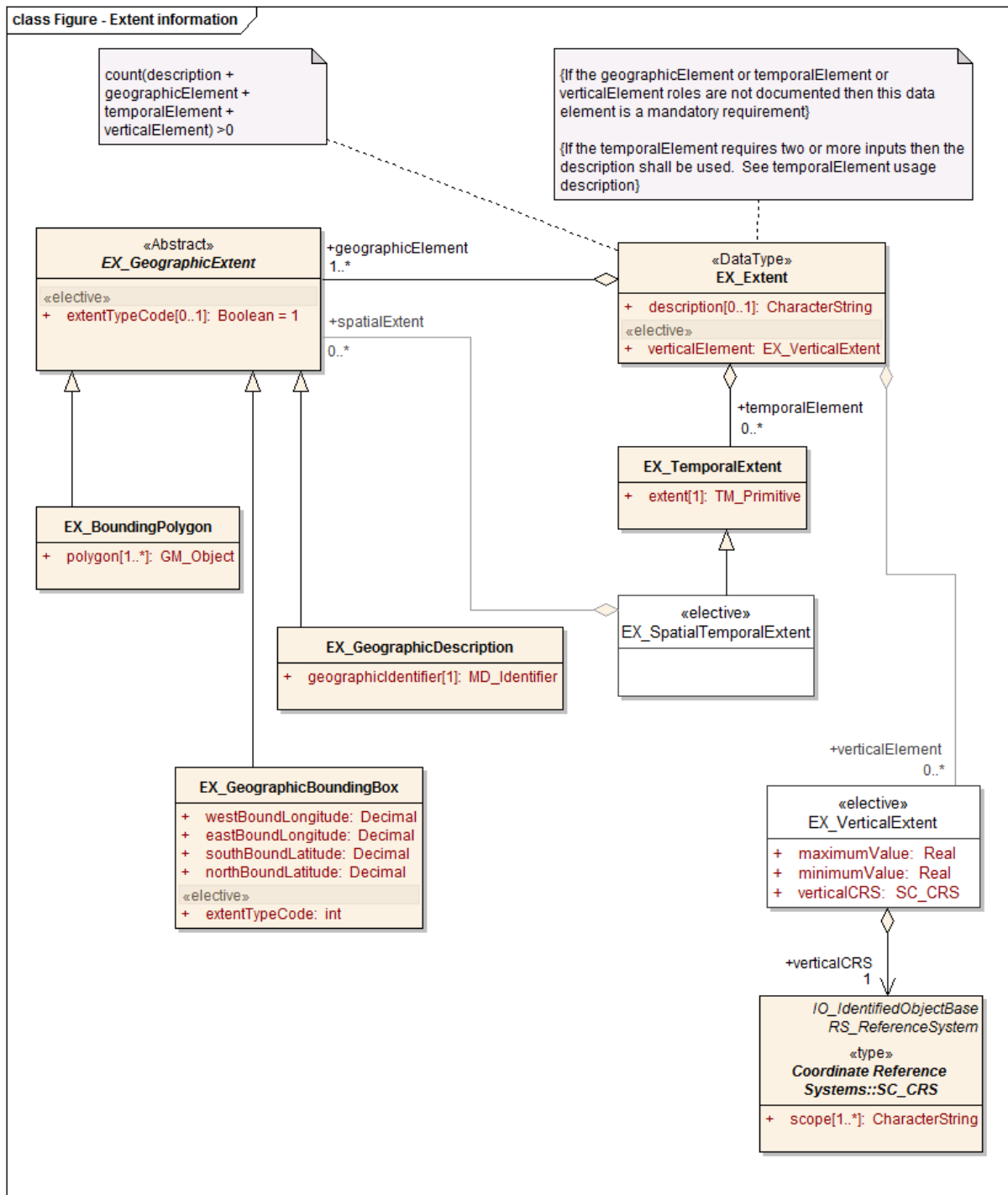


Figure 6.12 — Extent Information

Extent information is a data type that represents the aggregated set of metadata elements describing the coverage of the referring entity. At a minimum, one of the following data elements shall be reported: *description*, *geographicElement*, *temporalElement*, or *verticalElement*.



6.2.12.1 description (C)

Definition:

The spatial and temporal extent for the referring object.

Condition Statement:

If the *geographicElement* or *temporalElement* or *verticalElement* roles are not documented, then this data element is a mandatory requirement.

If the *temporalElement* (section 6.2.12.3) requires two or more inputs, then the description shall be used. See *temporalElement* usage description.

Usage Description:

The *description* is a free text field used to provide information relevant to the object's geographic and temporal extents.

Default Value:

None

Example Value:

"This feature was collected during phase II of the Fort Story Marina construction project that occurred between May and July 2006."

6.2.12.2 geographicElement (M)

Definition:

The spatial extent for the referring object.

Usage Description:

The *EX_GeographicExtent.EX_GeographicBoundingBox* (section 6.2.12.5) shall be used to describe this role.

Default Value:

None

6.2.12.3 temporalElement (O)

Definition:

The date and time extent for the referring object.

Usage Description:

The *EX_TemporalExtent* (section 6.2.12.6) and/or *EX_SpatialTemporalExtent* (section 6.2.12.7) can be used.

A temporal element could be used to describe either the time period covered by the content of the dataset (for example, during construction of a facility) or the date and time when the data has been collected (for example, the date on which the construction was completed). If both are needed, then two temporal extents shall be provided.

The use of multiple temporal extents shall be attributed *extent.description* (see 6.2.12.1)

Default Value:

None



6.2.12.4 verticalElement (C)

Definition:

The vertical extent expressing the minimum and maximum values of a dataset.

Condition Statement:

The *verticalElement* role is mandatory if *description*, *geographicElement*, or *temporalElement* is not recorded.

Usage Description:

The *EX_VerticalExtent* (section 6.2.12.8) shall be used to describe this role.

Default Value:

None

6.2.12.5 EX_GeographicBoundingBox (M)

Definition:

The spatial and temporal extent for the referring object.

Usage Description:

The bounding box is represented by the outermost extremes of the resource's extent. Sections 6.2.12.5.1 through 6.2.12.5.4 shall be used to represent the respective corners.

Default Value:

None

6.2.12.5.1 westBoundLongitude (M)

Definition:

Westernmost limit of the dataset's extent.

Usage Description:

This longitudinal value shall be reported in decimal degrees (positive East).

This value will be negative for all points west of the prime meridian.

Default Value:

None

Example Value:

-91.863725

6.2.12.5.2 eastBoundLongitude (M)

Definition:

Easternmost limit of the dataset's extent.

Usage Description:

This longitudinal value shall be reported in decimal degrees (positive East).

This value will be positive for all points east of the prime meridian.

Default Value:

None



Example Value:

-91.334371

6.2.12.5.3 southBoundLatitude (M)

Definition:

Southernmost limit of the dataset's extent.

Usage Description:

This latitudinal value shall be reported in decimal degrees (positive North).

This value will be negative for all points south of the equator.

Default Value:

None

Example Value:

41.856719

6.2.12.5.4 northBoundLatitude (M)

Definition:

Northernmost limit of the dataset's extent.

Usage Description:

This latitudinal value shall be reported in decimal degrees (positive North).

This value will be positive for all points north of the equator.

Default Value:

None

Example Value:

42.302217

6.2.12.6 EX_TemporalExtent (O)

Definition:

The time period covered by the content of the dataset.

Usage Description:

The time period shall be reported as described by the *TM_Primitive* in ISO 19108 and shall use *EX_TemporalExtent.extent* (section 6.2.12.6.1)

This time period can represent either the time period covered by the resource and/or the date that the resource has been collected. If both are required, then two temporal extents shall be provided and the *EX_Extent.description* (section 6.2.12.1) shall be used to provide an explanation.

Default Value:

None



6.2.12.6.1 extent (M)

Definition:

The date and time for the content of the resource.

Usage Description:

This is used to express the relevant range of time for the information associated with this resource.

The range shall be represented by two instances of time designated with a *begin* and *end* reference.

The value entered shall represent a range of time and not an instance in time. See *TM_Primitive* in Appendix E.

Default Value:

None

Example Value:

19920105 – 20060110

6.2.12.7 EX_SpatialTemporalExtent (O)

Definition:

The extent of the spatial boundaries with respect to date and time

Usage Description:

This is used to express the relevant range of time for the spatial relationship associated with this dataset.

Default Value:

None

6.2.12.7.1 extent (O)

Definition:

The date and time for the content of the dataset.

Usage Description:

This is used to express the relevant range of time for the information associated with this resource.

The value entered shall represent a range of time and not an instance in time. See *TM_Primitive* in Appendix E.

Default Value:

None

6.2.12.7.2 spatialExtent (M)

Definition:

The spatial extent component of combined spatial and temporal extents

Usage Description:



This sub-class provides the means to express the combined spatial and temporal extents and shall use the *EX_GeographicBoundingBox* (section 6.1.12.5) when *EX_SpatialTemporalExtent* is used.

Default Value:

None

6.2.12.8 EX_VerticalExtent (O)

Definition:

The vertical extent for the referring object.

Condition Statement:

If the *temporalElement* and *verticalElement* are not documented, then this is a mandatory requirement.

Usage Description:

This sub-class provides attribution used to support *verticalElement* (section 6.2.12.4).

Default Value:

None

6.2.12.8.1 minimumValue (M)

Definition:

The lowest vertical extent contained within the dataset.

Usage Description:

This value represents the lowest value of the vertical data being represented.

Default Value:

None

Example Value:

“41.85”

6.2.12.8.2 maximumValue (M)

Definition:

The highest vertical extent contained within the dataset.

Usage Description:

This value represents the highest value of the vertical data being represented.

Default Value:

None

Example Value:

“52.2”

6.2.12.8.3 verticalCRS (M)

Definition:

The information representing the vertical coordinate reference system (CRS) to which the maximum and minimum elevation values are measured.



Usage Description:

The *SC_CRS* class identification is fully documented in ISO 19111.

If the vertical reference system is a compound CRS, the second entry of the *referenceSystemIdentifier* (6.2.7.1) shall be used for the *verticalCRS*.

The units of the vertical coordinate reference system are maintained within the *referenceSystemIdentifier*.

Default Value:

None

Example Values:

“North American Vertical Datum of 1988”



6.2.13 Citation (CI_Citation)

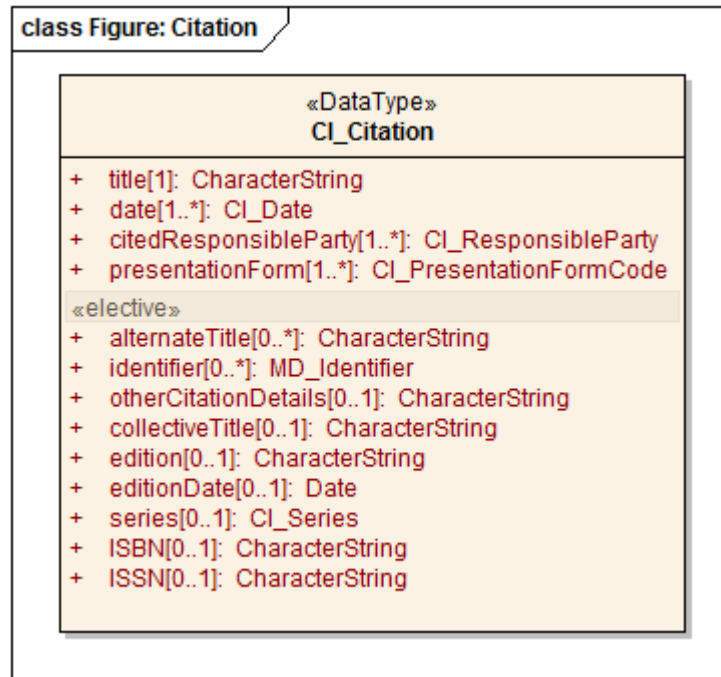


Figure 6.13 — Citation

The citation provides attribution to describe relevant aspects of the resource's reference and acts as a source for contact consultations.

6.2.13.1 title (M)

Definition:

The descriptive heading assigned to the resource being described.

Usage Description:

This is used to quickly obtain and distinguish the resource.

Default Value:

None

Example Value:

"Wetland Area Fort X"

6.2.13.2 date (M)

Definition:

The time or period to which the resource's citation has been assigned or established.

Usage Description:

The *CI_Date* (6.2.17) datatype shall be used to describe the relevant date of the citation.

Default Value:

None



6.2.13.3 citedResponsibleParty (M)

Definition:

The information necessary to identify the authority responsible for the cited work.

Usage Description:

This class of information shall use the *CI_ResponsibleParty* sub-class (section 6.2.14).

Default Value:

None

6.2.13.4 presentationForm (M)

Definition:

The particular physical mode of the resource being cited.

Usage Description:

The code list *CI_PresentationFormCode* (Appendix B.3) shall be used.

Code “005” – *mapDigital* shall be used when

MD_IdentificationInformation.MD_DataIdentification.spatialRepresentationType (6.) is equal to “vector”.

Default Value:

None



6.2.14 Responsible Party (CI_ResponsibleParty)

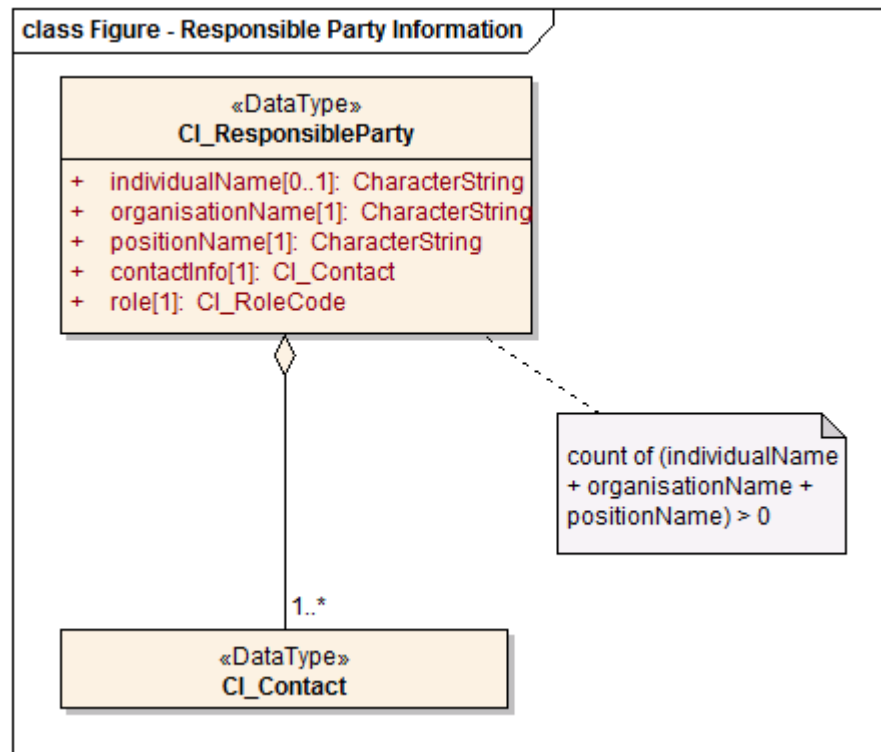


Figure 6.14 — Responsible Party

The responsible party information captures the attribution necessary to identify and communicate with those authorities associated with the resource.

6.2.14.1 organizationName (M)

Definition:

The name of the responsible organization for the resource being identified.

Usage Description:

The organization represents the authoritative party responsible for the resource identified.

Default Value:

None

Example Value:

“OACSIM IGI&S”

6.2.14.2 positionName (M)

Definition:

The given name or title of the individual post within the organization for the resource being identified.

Usage Description:

This attribute helps to capture information about the individual responsible for the resource.



Default Value:

None

Example Value:

“Geo Integration Project Officer”

6.2.14.3 contactInfo (M)

Definition:

The attribution necessary to establish communication with the resource’s responsible party.

Usage Description:

The sub-class *CI_Contact* (6.2.16) shall be used to capture the relevant contact information for the resource.

Default Value:

None

6.2.14.4 role (M)

Definition:

The function of the resource’s responsible party.

Usage Description:

The code list *CI_RoleCode* (Appendix B.4) shall be used to describe the function of the responsible party.

Default Value:

None



6.2.15 Address (CI_Address)

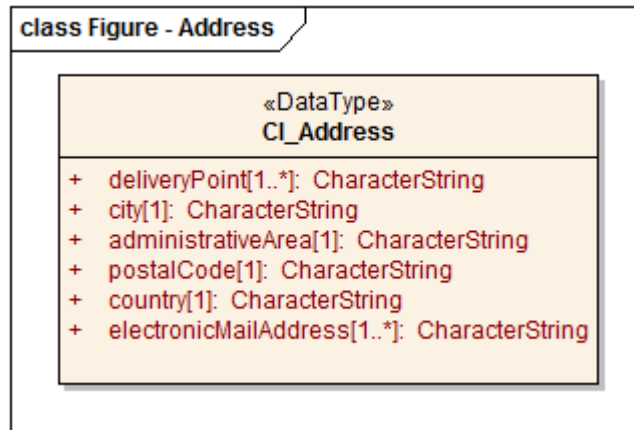


Figure 6.15 — Address

The information used to identify the physical location of the responsible party to include electronic mail attribution.

6.2.15.1 deliveryPoint (M)

Definition:

The attribute representing the address line of the mailing address.

Usage Description:

This entry identifies one of the following:

- a) street number; street name; floor ID; room/suite ID
- b) box number; post office name

Default Value:

None

Example Value:

“400; Army Navy Drive; Suite 206”

6.2.15.2 city (M)

Definition:

The town representing the location of the delivery point.

Usage Description:

The full name of the city shall be provided.

Default Value:

None

Example Values:

“Arlington”

“Newport News”

“Fort Collins”



6.2.15.3 administrativeArea (M)

Definition:

The state or province representing the location of the delivery point.

Usage Description:

States and the District of Columbia will be documented with the two-letter designation.

Default Value:

None

Example Value:

“VA”

6.2.15.4 postalCode (M)

Definition:

The administrative spatial code that assists mail and parcel delivery.

Default Value:

None

Example Value:

“22202”

6.2.15.5 country (M)

Definition:

The country associated with the delivery point.

Usage Description:

Countries are identified using the three-letter country code based on ISO 3166-1.

Default Value:

None

Example Value:

“USA”

6.2.15.6 electronicMailAddress (M)

Definition:

Address of the electronic mailbox of the responsible organization or individual for the resource.

Default Value:

None

Example Value:

“disdi@osd.mil”



6.2.16 Contact (CI_Contact)

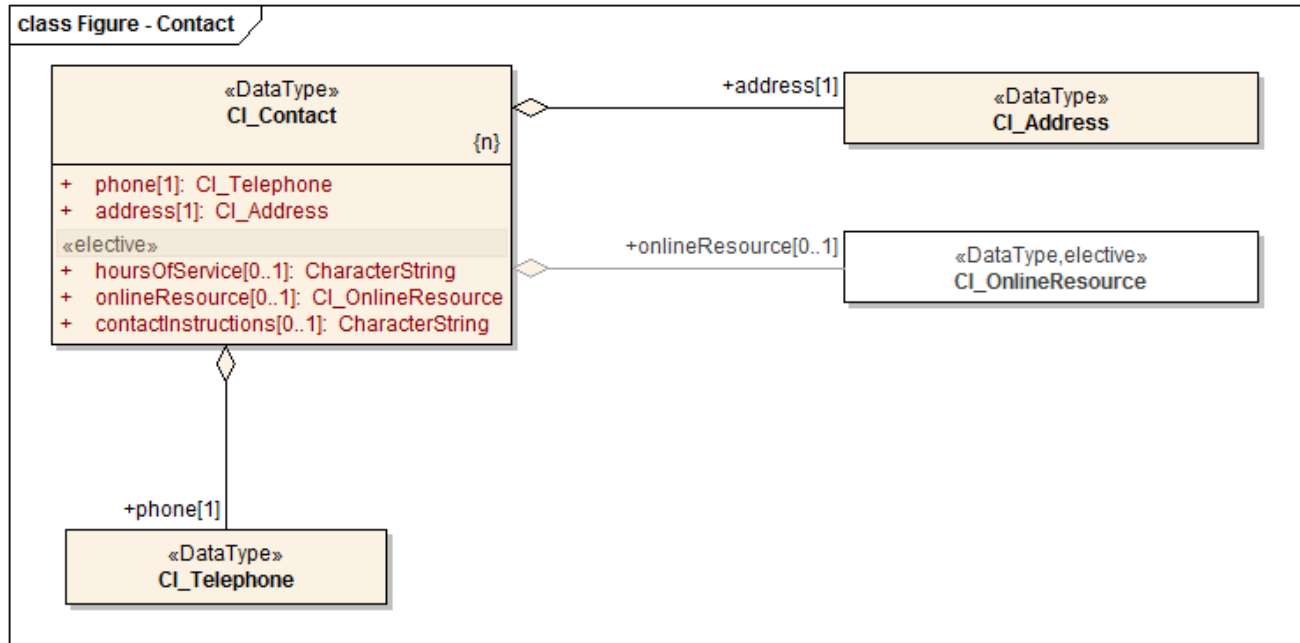


Figure 6.16 — Contact

The information required to enable communication with the responsible person and/or organization.

6.2.16.1 phone (M)

Definition:

The telephone number used to communicate with the organization or individual responsible for the referenced resource.

Usage Description:

The *CI_Telephone* (6.2.20) sub-class shall be used to report this information.

Default Value:

None

6.2.16.2 address (M)

Definition:

The physical and electronic mail address used to contact the responsible organization or individual.

Usage Description:

The *CI_Address* (6.2.15) sub-class shall be used to report this information.

Default Value:

None



6.2.17 Date (CI_Date)

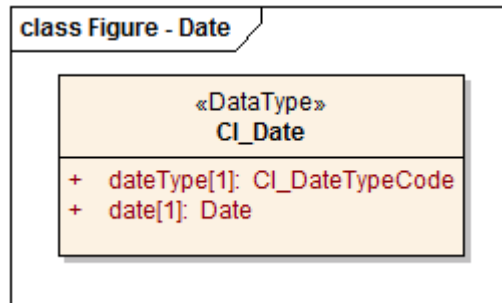


Figure 6.17 — Date

The date captures attribution relevant to the resource's time description.

6.2.17.1 date (M)

Definition:

The resource's referenced time.

Usage Description:

This will be attributed using the *Date* and *DateTime* data type as described in Appendix E.1.

Default Value:

None

Example Value:

"2000-02-15"

6.2.17.2 dateType (M)

Definition:

The event designated for the date used.

Usage Description:

The code list *CI_DateTypeCode* (Appendix B.1) shall be used to identify the event.

Default Value:

None



6.2.18 Online Resource (CI_OnlineResource)

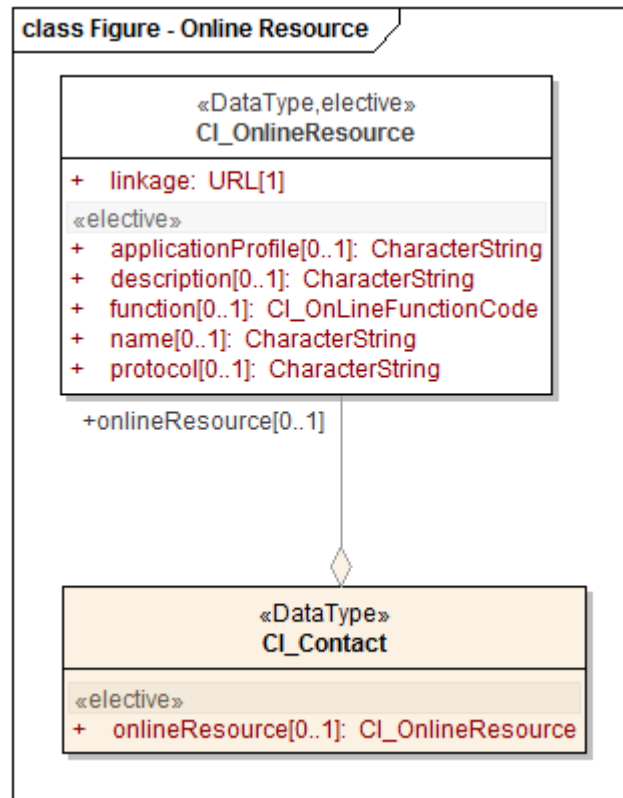


Figure 6.18 — Online Resource

Online resource provides information about online sources from which the dataset, specification, or community profile name and extended metadata elements can be obtained. For the purposes of this version of the DISDI Metadata Profile, *Online Resource* will not be mandatory.



6.2.19 Series (CI_Series)

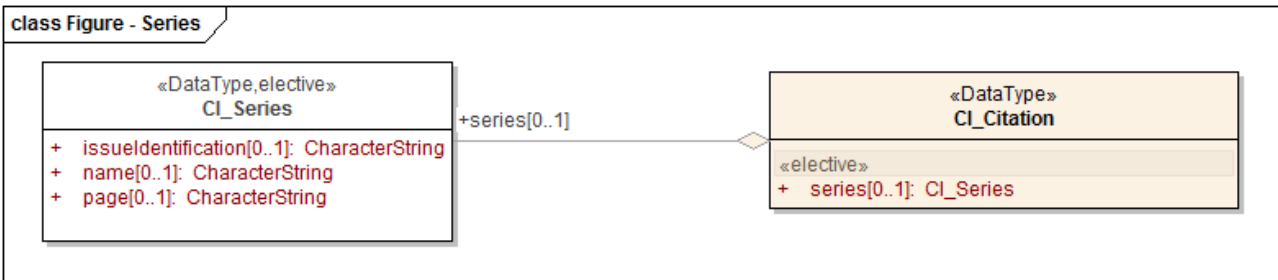


Figure 6.19 — Series

The series provides the necessary attribution for a series of data or an aggregated dataset. For the purposes of this version of the DISDI Metadata Profile, *Series* will not be mandatory.



6.2.20 Telephone (CI_Telephone)

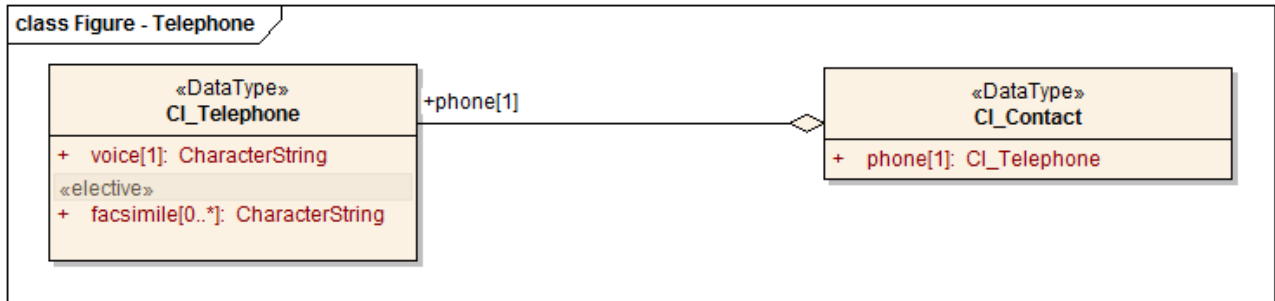


Figure 6.20 — Telephone

The telephone information provides the necessary attribution to report telephone numbers that enable contact with the responsible individual or organization.

6.2.20.1 voice (M)

Definition:

The telephone number representing a direct line to the individual or organization responsible for the resource referenced.

Usage Description:

The commercial number shall be provided first.

When available, the defense switched network (DSN) number shall be provided second.

The commercial voice number shall follow the format:

countryCode (area code) local number

The DSN voice number shall follow the format:

(DSN area code) DSN prefix local number

Default Value:

None

Example Values:

1 (703) 6045753 {commercial number}

(314) 4807714 {DSN number}



6.2.21 Identifier (MD_Identifier)

The identifier is used to provide attributes uniquely distinguishing the resource being referenced.

6.2.21.1 code (M)

Definition:

An alphanumeric value used to uniquely identify an instance of the referencing object.

Usage Description:

The *code* represents a variety of identifiers used throughout the profile (i.e., *referenceSystemIdentifier.code*).

Default Value:

None

Example Value:

“4D2707A0-9FFC-41A6-A3B5-34BD272A9BA4”

6.2.21.2 RS_Identifier

Definition:

Identifier used for reference systems.

Usage Description:

This class of information provides the necessary coordinate reference system information used in section 6.2.7.

Default Value:

None

6.2.21.2.1 codeSpace (M)

Definition:

The organization name or party responsible for the reference system resource.

Usage Description:

A free text field used to reference the *code* (section 6.2.7.2) that represents the reference system.

Default Value:

None

Example Values:

“EPSG”

“ESRI ArcGIS”

6.2.21.3 version (M)

Definition:

The version of the cited reference system.



Usage Description:

The version of the *codeSpace* (section 6.2.7.1.2) used to identify the reference system.

Default Value:

None

Example Values:

“6.11”

“9.2”



Appendix A Data Dictionary for DISDI Geospatial Metadata

ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
1.0 Metadata Entity Set Information								
1	1	MD_Metadata	root entity which defines metadata about a resource or resources					
2	1.1	fileIdentifier	A unique identifier for this metadata file.	N/A	C	1	If the dataset filename is not the fileIdentifier then fileIdentifier is mandatory. If the metadata is generated from a database application then the fileIdentifier is mandatory to link the metadata to the database	CharacterString
3	1.2	language	The language used for metadata documentation. Use of ISO 639-2 three letter code	"eng"	M	1		CharacterString
4	1.3	characterSet	Character coding standard of the metadata. MD_CharacterSetCode <<CodeList>> (B.9)	"utf8"	M	1		Class
5	1.4	parentIdentifier	file identifier of the metadata to which this metadata is a subset (child)		C	1	If there is an upper hierarchy level	CharacterString
6	1.5	hierarchyLevel	Dataset echelon to which the metadata applies.	"dataset"	C	N	Hierarchy level is not equal to "dataset"	Class



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
			MD_ScopeCode <<CodeList>> (B.24)					
7	1.6	heirarchyLevelName	name of the hierarchy levels for which the metadata is provided	"dataset"	C	N	Hierarchy level is not equal to "dataset"	CharacterString
8	1.7	contact	Party responsible for the metadata information.		M	N		Class
			The organization directly responsible for the metadata maintenance.					
			CI_ResponsibleParty (A.14.0) <<DataType>>					
9	1.8	dateStamp	Date that the metadata was created or last updated	Yyyy-mm-dd	M	1		Class
10	1.9	metadataStandardName	name of the metadata standard used	"DISDI Metadata Profile"	M	1		CharacterString
11	1.10	metadataStandardVersion	Version of the metadata standard used	"1.0"	M	1		CharacterString
11.1	1.11	dataSetURI	Uniformed Resource Identifier (URI) of the dataset to which the metadata applies		O	1		CharacterString
11.2	1.12	locale	Provides information about an alternatively used localized character string for a linguistic extension		O	N	More than one language used within the metadata	Class
			PT_Locale					
15	1.13	identificationInfo	basic information about the resource(s) to which the metadata applies		M	N		
			only instantiated via MD_DataIdentification and/or SV_ServiceIdentification					



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
			MD_Identification <<Abstract>> (A.2.0)					
20	1.14	metadataConstraints	Describes the use, legal, and security constraints on the use of the dataset.		M	N		
			Instantiated via MD_Constraints and/or MD_LegalConstraints and/or MD_SecurityConstraints					
18	1.15	dataQualityInfo	provides overall assessment of quality of a resource(s)		O	N		Association
			DQ_DataQuality (A.4.0)					
22	1.16	metadataMaintenance	provides information about the frequency of metadata updates, and the scope of those updates		M	1		Association
			MD_MaintenanceInformation (A.5.0)					
12	1.17	spatialRepresentationInfo	digital representation of spatial information in the dataset		O	N		Association
			MD_SpatialRepresentation <<Abstract>> (A.6.0)					
13	1.18	referenceSystemInfo	The description of the spatial and temporal reference systems used in the dataset.		C	N	If MD_DataIdentification.spatialRepresentationType is "vector", "grid", or "tin", then referenceSystemInfo is mandatory	Association



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
			MD_ReferenceSystem (A.7.0)					
16	1.19	contentInfo	The information about the feature catalogue and describes data coverage characteristics.		O	N		Association
			MD_ContentInformation <<Abstract>> (A.8.0)					
19	1.20	portrayalCatalogueInfo	Provides information about the catalogue of rules defined for the portrayal of a resource(s).		O	N		Association
			MD_PortrayalCatalogue Reference (A.9.0)					
17	1.21	distributionInfo	Information related to the distributor of and options for obtaining the dataset.		M	1		Association
			MD_Distribution (A.10.0)					
21	1.22	applicationSchemaInfo	Information to describe the conceptual schema of the dataset.		O	1		Association
2.0 Identification Information								
36	2.1	MD_DataIdentification	information required to identify a dataset					
24	2.1.1	citation	A description of the authoritative source for the resource being identified.		M	1		Class
			CI_Citation (A.13.0) <<DataType>>					
25	2.1.2	abstract	A brief synopsis of the dataset contents.		M	1		CharacterString



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
26	2.1.3	purpose	An explanation for the development of the resource and its intended use.		M	1		CharacterString
27	2.1.4	credit	recognition of those who contributed to the resource(s)		O	N		CharacterString
28	2.1.5	status	The current state of development for the resource		M	N		Class
			MD_ProgressCode <<CodeList>> (B.22)					
29	2.1.6	pointOfContact	Identification and means to contact people/organizations associated with the dataset		M	N		
			CI_ResponsibleParty (A.14) <<DataType>>					
37	2.1.7	spatialRepresentationType	The code used to characterize the spatial aspect of the dataset.		M	N		Class
			MD_SpatialRepresentation TypeCode <<CodeList>> (B.25)					
38	2.1.8	spatialResolution	factor which provides a general understanding of the density of spatial data in the dataset		O	N		Class
			MD_Resolution <<Union>> (A.2.3)					
39	2.1.9	language	The language of the dataset.	"eng"	M	N		
4	2.1.10	characterSet	Character coding standard of the dataset.	"utf8"	M	1		Class
			MD_CharacterSetCode <<CodeList>> (B.9)					



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
41	2.1.11	topicCategory	The primary theme(s) of the dataset.		C	N	if hierarchyLevel equals "dataset"?	Class
			MD_TopicCategoryCode <<Enumeration>> (B.26)					
44	2.1.12	environmentDescription	description of the dataset in the producer's processing environment, including items such as the software, the computer operating system, file name, and the dataset size		O	1		CharacterString
45	2.1.13	extent	The geographic coverage of the dataset.		C	N	if hierarchyLevel equals "dataset"? Either extent.geographicElement.EX_GeographicBoundingBox or extent.geographicElement.EX_GeographicDescription is required	Class
			EX_Extent <<DataType>> (A.12.0)					
46	2.1.14	supplementalInformation	any other descriptive information about the dataset		O	1		CharacterString
30	2.1.15	resourceMaintenance	provides information about the frequency of resource updates, and the scope of those updates		O	N		Association
			MD_MaintenanceInformation (A.5.0)					
31	2.1.16	graphicOverview	provides a graphic that illustrates the resource(s) (should include a legend for the graphic)		O	N		Association



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
			MD_BrowseGraphic (A.2.5)					
33	2.1.17	descriptiveKeywords	Expressive words used to provide a clear understanding of the dataset.		M	N		Association
			MD_Keywords (A.2.6)					
34	2.1.18	resourceSpecificUsage	provides basic information about specific application(s) for which the resource(s) has/have been or is being used by different users		O	N		Association
			MD_Usage (A.2.7)					
35	2.1.19	resourceConstraints	The limitations or constraints on the use of or access to the resource.		M	N		Association
			MD_Constraints (A.3.0)					
35.1	2.1.20	aggregationInfo	provides aggregate dataset information		O	N		Association
			MD_AggregateInformation (A.2.8)					
47	2.2	SV_ServiceIdentification	identification of capabilities which a service provider makes available to a service user through a set of interfaces that define a behaviour – See ISO 19119 for further information					
24	2.2.1	citation	citation data for the resource(s)		M	1		Class
			CI_Citation (A.13.0) <<DataType>>					
25	2.2.2	abstract	brief narrative summary of the content of the resource(s)		M	1		CharacterString



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
26	2.2.3	purpose	summary of the intentions with which the resource(s) was developed		O	1		CharacterString
27	2.2.4	credit	recognition of those who contributed to the resource(s)		O	N		CharacterString
28	2.2.5	status	status of the resource(s)		O	N		Class
			MD_ProgressCode <<CodeList>> (B.22)					
29	2.2.6	pointOfContact	identification of, and means of communication with, person(s) and organization(s) associated with the resource(s)		O	N		
			CI_ResponsibleParty (A.14.0) <<DataType>>					
	2.2.7	serviceType						
	2.2.8	serviceTypeVersion						
	2.2.9	accessProperties						
45	2.2.10	extent	extent information including the bounding box, bounding polygon, vertical, and temporal extent of the dataset		C	N	if hierarchyLevel equals "dataset"? Either extent.geographicElement.EX_GeographicBoundingBox or extent.geographicElement.EX_GeographicDescription is required	Class



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
			EX_Extent <<DataType>> (A.12.0)					
59	2.3	MD_Resolution	level of detail expressed as a scale factor or a ground distance					
60	2.3.1	equivalentScale	level of detail expressed as the scale of a comparable hardcopy map or chart		C	1	distance not documented?	Class
			MD_RepresentativeFraction <<DataType>> (A.2.4)					
61	2.3.2	distance	ground sample distance		C	1	equivalentScale not documented?	Class
56	2.4	MD_RepresentativeFraction	derived from ISO 19103 Scale where MD_RepresentativeFraction.denominator = 1 / Scale.measure And Scale.targetUnits =Scale.sourceUnits					
57	2.4.1	denominator	the number below the line in a vulgar fraction		M	1		Integer
48	2.5	MD_BrowseGraphic	graphic that provides an illustration of the dataset (should include a legend for the graphic)					
49	2.5.1	filename	name of the file that contains a graphic that provides an illustration of the dataset		M	1		CharacterString
50	2.5.2	fileDescription	text description of the illustration		O	1		CharacterString



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
51	2.5.3	fileType	format in which the illustration is encoded Examples: CGM, EPS, GIF, JPEG, PBM, PS, TIFF, XWD		O	1		CharacterString
52	2.6	MD_Keywords	Expressive words used to describe the dataset and help build the formalized list of terms that support development of a thesaurus and other methods of data descriptors.					
53	2.6.1	keyword	A list of commonly used words, formalized terms, or phrases to describe the dataset subject.		M	N		CharacterString
54	2.6.2	type	subject matter used to group similar keywords		O	1		Class
			MD_KeywordTypeCode <<CodeList>> (B.16)					
55	2.6.3	ThesaurusName	name of the formally registered thesaurus or a similar authoritative source of keywords		O	1		Class
62	2.7	MD_Usage	brief description of ways in which the resource(s) is/are currently or has been used					
63	2.7.1	specificUsage	brief description of the resource and/or resource series usage		M	1		CharacterString
64	2.7.2	usageDateTime	date and time of the first use or range of uses of the resource and/or resource series		O	1		Class
			DateTime (E.1)					



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
65	2.7.3	userDeterminedLimitations	applications, determined by the user for which the resource and/or resource series is not suitable		O	1		CharacterString
66	2.7.4	userContactInfo	identification of and means of communicating with person(s) and organization(s) using the resource(s)		M	N		Class
			CI_ResponsibleParty <<DataType>> (A.14.0)					
66.1	2.8	MD_AggregateInformation	aggregate dataset information					
66.2	2.8.1	aggregateDataSetName	identification information about aggregate dataset		C	1	if aggregateDataSet-Identifier not documented?	Class
			CI_Citation (A.13.0) <<DataType>>					
66.3	2.8.2	aggregateDataSetIdentifier	identification information about aggregate dataset		C	1	if aggregateDataSet Name not documented?	Class
			MD_Identifier (A.21.0) <<DataType>>					
66.4	2.8.3	associationType	association type of the aggregate dataset		M	1		Class
			DS_AssociationTypeCode (B.6) <<CodeList>>					
66.5	2.8.4	initiativeType	type of initiative under which the aggregate dataset was produced		O	1		Class
			DS_InitiativeTypeCode (B.7) <<CodeList>>					



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
3.0 Constraint Information								
67	3.1	MD_Constraints	restrictions on the access and use of a resource or metadata					
68	3.1.1	useLimitation	Controls placed on the resource to regulate its use. Example, "Not to be used for navigation"		O	N		CharacterString
69	3.2	MD_LegalConstraints	Limitations and legal prerequisites for accessing and using the resource.				Below are attributes describing legal constraint information, one of them shall be provided.	
68	3.2.1	useLimitation	Controls placed on the resource to regulate its use. Example, "Not to be used for navigation"		M	N		CharacterString
70	3.2.2	accessConstraints	Controls placed on the resource to regulate retrieval.		M	N		Class
			MD_RestrictionCode <<CodeList>> (B.23)					
71	3.2.3	useConstraints	Controls to be applied on how the resource is employed.		M	N		Class
			MD_RestrictionCode <<CodeList>> (B.23)					
72	3.2.4	otherConstraints	Additional restrictions and legal prerequisites for accessing and/or using the resource.		C	N	accessConstraints or useConstraints equal "otherRestrictions"?	CharacterString



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
73	3.3	MD_SecurityConstraints	The handling restrictions imposed on the resource for protection concerns.					
68	3.3.1	useLimitation	Controls placed on the resource to regulate its use. Example, "Not to be used for navigation"		M	N		CharacterString
74	3.3.2	classification	The category to which the resource is assigned based on the degree of protection considered necessary to safeguard it from unauthorized use.		M	1		Class
			MD_ClassificationCode <<CodeList>> (B.10)					
75	3.3.3	userNote	explanation of the application of the legal constraints or other restrictions and legal prerequisites for obtaining and using the resource or metadata		O	1		CharacterString
76	3.3.4	classificationSystem	The name of the classification scheme used to manage the classification of the resource.		M	1		CharacterString
77	3.3.5	handlingDescription	A description of how the resource is managed or controlled		M	1		CharacterString



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
4.0 Data Quality								
78	4.0	DQ_DataQuality	quality information for the data specified by a data quality scope					
79	4.1	scope	the specific data to which the data quality information applies		M	1		Class
			DQ_Scope <<DataType>>					
138		DQ_Scope	extent of characteristic(s) of the data for which quality information is reported					
139	4.1.1	level	hierarchical level of the data specified by the scope		M	1		Class
			MD_ScopeCode <<CodeList>> (B.24)					
140	4.1.2	extent	information about the horizontal, vertical and temporal extent of the data specified by the scope		O	1		Class
			EX_Extent <<DataType>> (A.12.0)					
141	4.1.3	levelDescription	detailed description about the level of the data specified by the scope		C	N	level not equal "dataset" or "series"?	
			MD_ScopeDescription <<Union>> (A.4.5)					
80	4.2	<i>report</i>	The quantitative quality information for the data specified by the scope.					
108	4.2.1	DQ_Completeness	presence and absence of a resource's features, attributes, and/or its relationships		O	N		Class



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
109	4.2.1.1	DQ_CompletenessCommission	Description of additional data included beyond the scope of the resource		O	N		Class
			DQ_Element <<Abstract>> (B.4.3)					
110	4.2.1.2	DQ_CompletenessOmission	Data missing from the resource as prescribed by the scope.		O	N		Class
			DQ_Element <<Abstract>> (B.4.3)					
111	4.2.2	DQ_Logical Consistency	The degree of adherence to logical rules of data structure, attribution, and relationships		O	N		Class
112	4.2.2.1	DQ_ConceptualConsistency	Adherence of the resource to rules of the conceptual schema.		O	N		Class
			DQ_Element <<Abstract>> (B.4.3)					
113	4.2.2.2	DQ_DomainConsistency	Adherence to logical rules of data structure or attribution, whether those rules are conceptual, logical, or physical.		O	N		Class
			DQ_Element <<Abstract>> (B.4.3)					
114	4.2.2.3	DQ_FormatConsistency	As described by the scope, degree to which data is stored in accordance with the physical structure of the dataset.		O	N		Class
			DQ_Element <<Abstract>>(B.4.3)					
115	4.2.2.4	DQ_TopologicalConsistency	The correctness of explicitly encoded topological characteristics of the resource as described by the scope.		O	N		Class
			DQ_Element <<Abstract>>(B.4.3)					



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
116	4.2.3	DQ_PositionalAccuracy	The accuracy of geometric position of the resource being reported.		O	N		Class
117	4.2.3.1	DQ_AbsoluteExternalPositionalAccuracy	The closeness of reported coordinate values to the values accepted as or being true.		O	N		Class
			DQ_Element <<Abstract>> (B.4.3)					
118	4.2.3.2	DQ_GriddedDataPositionalAccuracy	The closeness of gridded data position values to values accepted as or being true.		O	N		Class
			DQ_Element <<Abstract>> (B.4.3)					
119	4.2.3.3	DQ_RelativeInternalPositionalAccuracy	The relative closeness of positions of the scoped resource to respective relative positions accepted as or being true.		O	N		Class
			DQ_Element <<Abstract>>(B.4.3)					
124	4.2.4	DQ_ThematicAccuracy	The accuracy of quantitative attributes and correctness of nonquantitative attributes and of the classifications of features and their relationships.		O	N		Class
125	4.2.4.1	DQ_ThematicClassificationCorrectness	A class comparison of features or their attributes to a defined business process or other universe of discourse.		O	N		Class
			DQ_Element <<Abstract>>(B.4.3)					
126	4.2.4.2	DQ_NonQuantitativeAttributeAccuracy	Accuracy of non-quantitative attributes assigned to the resource.		O	N		Class
			DQ_Element <<Abstract>> (B.4.3)					



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
127	4.2.4.3	DQ_QuantitativeAttributeAccuracy	Accuracy of quantitative attributes assigned to the resource.		O	N		Class
			DQ_Element <<Abstract>>(B.4.3)					
120	4.2.5	DQ_TemporalAccuracy	The accuracy of the temporal attributes and relationships assigned to the resource.		O	N		Class
121	4.2.5.1	DQ_AccuracyOfATimeMeasurement	correctness of the temporal references of an item (reporting of accuracy or error in time measurements).		O	N		Class
			DQ_Element <<Abstract>> (B.4.3)					
122	4.2.5.2	DQ_TemporalConsistency	The correctness of ordered events or sequences.		O	N		Class
			DQ_Element <<Abstract>> (B.4.3)					
123	4.2.5.3	DQ_TemporalValidity	The temporal validity of data specified by the scope with respect to time.		O	N		Class
			DQ_Element <<Abstract>> (B.4.3)					
99	4.3	DQ_Element	The aspect of measuring quantitative quality information.					
100	4.3.1	nameOfMeasure	name of the test applied to the data		O	N		CharacterString
101	4.3.2	measureIdentification	code identifying a registered standard procedure		O	1		Class
			MD_Identifier <<DataType>> (A.21.0)					
102	4.3.3	measureDescription	description of measure		O	1		CharacterString



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
103	4.3.4	evaluationMethodType	type of method used to evaluate quality of the dataset		O	1		Class
			DQ_EvaluationMethodTypeCode <<CodeList>> (B.5)					
104	4.3.5	evaluationMethodDescription	description of the evaluation method		O	1		CharacterString
105	4.3.6	evaluationProcedure	reference to the procedure information		O	1		Class
			CI_Citation <<DataType>> (A.13.0)					
106	4.3.7	dateTime	date on which a data quality measure was applied		O	N		Class
107	4.3.8	result	value (or set of values) obtained from applying a data quality measure or the outcome of evaluating the obtained value (or set of values) against a specified acceptable conformance quality level		M	2		Class
			DQ_QuantitativeResult <Abstract>> (A.4.6) and/or DQ_ConformanceResult <Abstract>> (A.4.7)					
82	4.4	LI_Lineage	information about the events or source data used in constructing the data specified by the scope or lack of knowledge about lineage					
83	4.4.1	statement	general explanation of the data producer's knowledge about the lineage of a dataset		C	1	(DQ_DataQuality.scope.DQ_Scope.level = "dataset" or "series")?	CharacterString



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
85	4.4.2	source	information about the source data used in creating the data specified by the scope LI_Source (A.4.8)		C	N	mandatory if statement and processStep not provided?	Association
84	4.4.3	processStep	information aboutn events in the life of a dataset specified by the scope LI_ProcessStep (A.4.9)		C	N	mandatory if statement and source not provided?	Association
149	4.5	MD_ScopeDescription	description of the class of information covered by the information <<Union>> (A.4.5.1 – A.4.5.6)					
150	4.5.1	attributes	instances of attribute types to which the information applies		C	1	features, featureInstances, attributeInstances, dataset and other not documented?	GF_AttributeType (E.3)
151	4.5.2	features	instances of feature types to which the information applies		C	1	features, featureInstances, attributeInstances, dataset and other not documented?	GF_FeatureType (E.3)
152	4.5.3	featureInstances	feature instances to which the information applies		C	1	features, featureInstances, attributeInstances, dataset and other not documented?	GF_FeatureType (E.3)



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
153	4.5.4	attributeInstances	attribute instances to which the information applies		C	1	features, featureInstances, attributeInstances, dataset and other not documented?	GF_AttributeType (E.3)
154	4.5.5	dataset	dataset to which the information applies		C	1	features, featureInstances, attributeInstances, dataset and other not documented?	CharacterString
155	4.5.6	other	class of information that does not fall into the other categories to which the information applies		C	1	attributes, features, featureInstances, attributeInstances, and dataset not documented?	CharacterString
133	4.6	DQ_QuantitativeResult	the values or information about the value(s) (or set of values) obtained from applying a data quality measure					
134	4.6.1	valueType	value type for reporting a data quality result		O	1		Class
			RecordType <<Metaclass>> (E.2)					
135	4.6.2	valueUnit	value unit for reporting a data quality result		M	1		Class
			UnitOfMeasure (E.2)					
136	4.6.3	errorStatistic	statistical method used to determine the value		O	1		CharacterString



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
137	4.6.4	value	quantitative value or values, content determined by the evaluation procedure used		M	N		Class
			Record (E.2)					
129	4.7	DQ_ConformanceResult	Information about the outcome of evaluating the obtained value (or set of values) against a specified acceptable conformance quality level					
130	4.7.1	specification	citation of product specification or user requirement against which data is being evaluated		M	1		Class
			CI_Citation <<DataType>> (A.13.0)					
131	4.7.2	explanation	explanation of the meaning of conformance for this result		M	1		CharacterString
132	4.7.3	pass	indication of the conformance result where 0 = fail and 1 = pass		M	1		Boolean
92	4.8	LI_Source	information about the source data used in creating the data specified by the scope					
93	4.8.1	description	detailed description of the level of the source data		C	1	sourceExtent not provided?	CharacterString
94	4.8.2	scaleDenominator	denominator of the representative fraction on a source map		O	1		Class
			MD_RepresentativeFraction <<DataType>> (A.2.4)					



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
	4.8.3	sourceReferenceSystem	spatial reference system used by the source data		O	1		Class
			MD_ReferenceSystem (A.7.0)					
96	4.8.4	sourceCitation	recommended reference to be used for the source data		O	1		Class
			CI_Citation <<DataType>> (A.13.0)					
97	4.8.5	sourceExtent	information about the spatial, vertical and temporal extent of the source data		C	N	description not provided?	Class
			EX_Extent <<DataType>> (A.12.0)					
86	4.9	LI_ProcessStep	information about an event or transformation in the life of a dataset including the process used to maintain the dataset					
87	4.9.1	description	description of the event, including related parameters or tolerances		M	1		CharacterString
88	4.9.2	rationale	requirement or purpose for the process step		O	1		CharacterString
89	4.9.3	dateTime	date and time on which the process step occurred		O	1		Class
			DateTime (E.1)					
90	4.9.4	processor	identification of, and means of communication with, person(s) and organization(s) associated with the process step		O	N		Class



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
5.0 Maintenance Information								
142	5	MD_MaintenanceInformation	information about the scope and frequency of updating					
143	5.1	maintenanceAndUpdateFrequency	The report to identify how often the resource is updated or reviewed.		M	1		
			MD_MaintenanceFrequency Code <<CodeList>> (B.17)					
144	5.2	dateOfNextUpdate	scheduled revision date for resource		O	N		Class
			Date (E.1)					
145	5.3	userDefinedMaintenanceFrequency	maintenance period other than those defined		O	1		Class
			TM_PeriodDuration (E.4)					
146	5.4	updateScope	scope of data to which maintenance is applied		O	1		Class
			MD_ScopeCode <<CodeList>> (B.24)					
147	5.5	updateScopeDescription	additional information about the range or extent of the resource		O	N		Class
			MD_ScopeDescription <<Union>> (A.4.4)					
148	5.6	maintenanceNote	information regarding specific requirements for maintaining the resource		O	N		CharacterString
148.1	5.7	contact	The party responsible for managing the resource update.		M	N		Class
			CI_ResponsibleParty <<DataType>> (A.14.0)					



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
6.0 Spatial Representation Information								
157	6.1	MD_GridSpatialRepresentation	information about grid spatial objects in the dataset					
158	6.1.1	numberOfDimensions	number of independent spatial temporal axes		M	1		Integer
159	6.1.2	axisDimensionsProperties	information about spatial-temporal axis properties		M	1		Sequence (B.4.7)
			MD_Dimension <<DataType>> (A.6.5)					
160	6.1.3	cellGeometry	identification of grid data as point or cell		M	1		
			MD_CellGeometryCode <<CodeList>> (B.8)					
161	6.1.4	transformationParameterAvailability	indication of whether or not parameters for transformation between image coordinates and geographic or map coordinates exist (are available)		M	1		Boolean
176	6.2	MD_VectorSpatialRepresentation	information about the vector spatial objects in the dataset					
177	6.2.1	topologyLevel	code which identifies the degree of complexity of the spatial relationships		O	1		
			MD_TopologyLevelCode <<CodeList>> (B.27)					
178	6.2.2	geometricObjects	information about the geometric objects used in the dataset		O	N		
			MD_GeometricObjects <<DataType>> (A.6.6.6)					



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
162	6.3	MD_Georectified	grid whose cells are regularly spaced in a geographic (i.e., lat /long) or map coordinate system defined in the Spatial Referencing System (SRS) so that any cell in the grid can be geolocated given its grid coordinate and the grid origin, cell spacing, and orientation					
158	6.3.1	numberOfDimensions	number of independent spatialtemporal axes		M	1		Integer
159	6.3.2	axisDimensionsProperties	information about spatial-temporal axis properties		M	1		Sequence (E.6)
			MD_Dimension <<DataType>> (A.6.5)					
160	6.3.3	cellGeometry	identification of grid data as point or cell		M	1		
			MD_CellGeometryCode <<CodeList>> (B.8)					
161	6.3.4	transformationParameterAvailability	indication of whether or not parameters for transformation between image coordinates and geographic or map coordinates exist (are available)		M	1		Boolean
163	6.3.5	checkPointAvailability	indication of whether or not geographic position points are available to test the accuracy of the georeferenced grid data					
164	6.3.6	checkPointDescription	description of geographic position points used to test the accuracy of the georeferenced grid data		C	1	checkPointAvailability equals "yes"?	CharacterString



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
165	6.3.7	cornerPoints	earth location in the coordinate system defined by the Spatial Reference System and the grid coordinate of the cells at opposite ends of grid coverage along two diagonals in the grid spatial dimensions. There are four corner points in a georectified grid; at least two corner points along one diagonal are required. The first corner point corresponds to the origin of the grid.		M	1		Sequence (E.6)
			GM_Point <<Type>> (E.5)					
166	6.3.8	centerPoint	earth location in the coordinate system defined by the Spatial Reference System and the grid coordinate of the cell halfway between opposite ends of the grid in the spatial dimensions		O	1		Class
			GM_Point <<Type>> (E.5)					
167	6.3.9	pointInPixel	point in a pixel corresponding to the Earth location of the pixel		M	1		Class
			MD_PixelOrientationCode <<Enumeration>> (B.21)					
168	6.3.10	transformationDimensionDescription	general description of the transformation		O	1		CharacterString
169	6.3.11	transformationDimensionMapping	information about which grid axes are the spatial (map) axes		O	2		CharacterString



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
170	6.4	MD_Georeferenceable	grid with cells irregularly spaced in any given geographic/map projection coordinate system, whose individual cells can be geolocated using geolocation information supplied with the data but cannot be geolocated from the grid properties alone					
158	6.4.1	numberOfDimensions	number of independent spatialtemporal axes		M	1		Integer
159	6.4.2	axisDimensionsProperties	information about spatial-temporal axis properties		M	1		Sequence (E.6)
			MD_Dimension <<DataType>> (A.6.5)					
160	6.4.3	cellGeometry	identification of grid data as point or cell		M	1		
			MD_CellGeometryCode <<CodeList>> (B.8)					
161	6.4.4	transformationParameterAvailability	indication of whether or not parameters for transformation between image coordinates and geographic or map coordinates exist (are available)		M	1		Boolean
171	6.4.5	controlPointAvailability	indication of whether or not control point(s) exists		M	1		Boolean
172	6.4.6	orientationParameterAvailability	indication of whether or not orientation parameters are available		O	1		CharacterString
173	6.4.7	orientationParameterDescription	description of parameters used to describe sensor orientation		O	1		CharacterString
174	6.4.8	georeferencedParameters	terms which support grid data georeferencing		M	1		Class



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
			Record (E.2)					
175	6.4.9	parameterCitation	reference providing description of the parameters		O	N		Class
			CI_Citation <<DataType>> (A.13.0)					
179	6.5	MD_Dimension	axis properties					
180	6.5.1	dimensionName	name of the axis		M	1		Class
			MD_DimensionNameTypeCode <<CodeList>> (B.13)					
181	6.5.2	dimensionSize	number of elements along the axis		M	1		Integer
182	6.5.3	resolution	degree of detail in the grid dataset		O	1		Class
			Measure (E.2)					
183	6.6.6	MD_GeometricObjects	number of objects, listed by geometric object type, used in the dataset					
184	6.6.6.1	geometricObjectType	name of point or vector objects used to locate zero-, one-, two-, or three-dimensional spatial locations in the dataset		M	1		
			MD_GeometricObjectType Code <<CodeList>> (B.14)					
185	6.6.6.2	geometricObjectCount	total number of the point or vector object type occurring in the dataset		O	1		Integer
7.0 Reference System Information								
187	7.1	referenceSystemIdentifier	The unique identifier used to report the reference system being used for the		M	1		Class



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
			resource					
			RS_Identifier (A.21.2)					
206	7.1.1	authority	person or party responsible for maintenance of the namespace		O			
			CI_Citation <<DataType>> (A.13.0)					
207	7.1.2	code	The value identifying the source reference system.		M			CharacterString
208.1	7.1.3	codespace	The organization name or party responsible for the reference system resource.	"EPSG"	M	1		CharacterString
208.2	7.1.4	version	The version of the cited reference system.		M	1		CharacterString
8.0 Content Information								
233	8.1	MD_FeatureCatalogueDescription	information identifying the feature catalogue or the conceptual schema					
234	8.1.1	complianceCode	indication of whether or not the cited feature catalogue complies with ISO 19110		O	1		Boolean
235	8.1.2	language	language(s) used within the catalogue ISO 639-2, other parts can be used		O	N		CharacterString
		ISO 639-2, other parts can be used						
236	8.1.3	includedWithDataset	indication of whether or not the feature catalogue is included with the dataset	"no"	M	1		Boolean



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
237	8.1.4	featureTypes	subset of feature types from cited feature catalogue occurring in dataset		O	N		Class
			GenericName (To be defined in Appendix E)					
238	8.1.5	featureCatalogueCitation	complete bibliographic reference to one or more external feature catalogues		M	N		Class
			CI_Citation <<DataType>> (A.13.0)					
239	8.2	MD_CoverageDescription	information about the content of a grid data cell					
240	8.2.1	attributeDescription	description of the attribute described by the measurement value		M	1		Class
			RecordType <<Metaclass>> (E.2)					
241	8.2.2	contentType	type of information represented by the cell value		M	1		Class
			MD_CoverageContentType Code <<CodeList>> (B.11)					
242	8.2.3	dimension	information on the dimensions of the cell measurement value		O	N		Class
			MD_RangeDimension (A.8.4)					
243	8.3	MD_ImageDescription	information about an image's suitability for use					
240	8.3.1	attributeDescription	description of the attribute described by the measurement value		M	1		Class
			RecordType <<Metaclass>> (E.2)					



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
241	8.3.2	contentType	type of information represented by the cell value		M	1		Class
			MD_CoverageContentType Code <<CodeList>> (B.11)					
242	8.3.3	dimension	information on the dimensions of the cell measurement value		O	N		Class
			MD_RangeDimension (A.8.4)					
244	8.3.4	illuminationElevationAngle	illumination elevation measured in degrees clockwise from the target plane at intersection of the optical line of sight with the Earth's surface. For images from a scanning device, refer to the centre pixel of the image		O	1		Real
245	8.3.5	illuminationAzimuthAngle	illumination azimuth measured in degrees clockwise from true north at the time the image is taken. For images from a scanning device, refer to the centre pixel of the image		O	1		Real
246	8.3.6	imagingCondition	conditions affected the image		O	1		Class
			MD_ImagingConditionCode <<CodeList>> (B.15)					
247	8.3.7	imageQualityCode	specifies the image quality		O	1		Class
			MD_Identifier <<DataType>> (A.21.1)					



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
248	8.3.8	cloudCoverPercentage	area of the dataset obscured by clouds, expressed as a percentage of the spatial extent		O	1		Real
249	8.3.9	processingLevelCode	image distributor's code that identifies the level of radiometric and geometric processing that has been applied		O	1		Class
			MD_Identifier <<DataType>> (A.21.1)					
250	8.3.10	compressionGenerationQuantity	count of the number of lossy compression cycles performed on the image		O	1		Integer
251	8.3.11	triangulationIndicator	indication of whether or not triangulation has been performed upon the image		O	1		Boolean
252	8.3.12	radiometricCalibrationDataAvailability	indication of whether or not the radiometric calibration information for generating the radiometrically calibrated standard data product is available		O	1		Boolean
253	8.3.13	cameraCalibrationInformationAvailability	indication of whether or not constants are available which allow for camera calibration corrections		O	1		Boolean
254	8.3.14	filmDistortionInformationAvailability	indication of whether or not Calibration Reseau information is available		O	1		Boolean



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
255	8.3.15	lensDistortionInformationAvailability	indication of whether or not lens aberration correction information is available		O	1		Boolean
256	8.4	Dimension (MD_RangeDimension)	information on the range of each dimension of a cell measurement value					
257	8.4.1	sequenceIdentifier	number that uniquely identifies instances of bands of wavelengths on which a sensor operates		O	1		Class
			MemberName (To be defined in Appendix E)					
258	8.4.2	descriptor	description of the range of a cell measurement value		O	1		CharacterString
259	8.5	MD_Band	range of wavelengths in the electromagnetic spectrum					
257	8.5.1	sequenceIdentifier	number that uniquely identifies instances of bands of wavelengths on which a sensor operates		O	1		Class
258	8.5.2	descriptor	description of the range of a cell measurement value		O	1		CharacterString
260	8.5.3	maxValue	longest wavelength that the sensor is capable of collecting within a designated band		O	1		Real
261	8.5.4	minValue	shortest wavelength that the sensor is capable of collecting within a designated band		O	1		Real



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
262	8.5.5	units	units in which sensor wavelengths are expressed		C	1	minValue or maxValue provided?	Class
			UomLength (E.2)					
263	8.5.6	peakResponse	wavelength at which the response is the highest		O	1		Real
264	8.5.7	bitsPerValue	maximum number of significant bits in the uncompressed representation for the value in each band of each pixel		O	1		Integer
265	8.5.8	toneGradation	number of discrete numerical values in the grid data		O	1		Integer
266	8.5.9	scaleFactor	scale factor which has been applied to the cell value		O	1		Real
267	8.5.10	offset	the physical value corresponding to a cell value of zero		O	1		Real
9.0 Portrayal Catalog Information								
268	9.0	MD_PortrayalCatalogueReference						
269	9.1	portrayalCatalogueCitation	bibliographic reference to the portrayal catalogue cited		M	N		Class
			CI_Citation <<DataType>> (A.13.0)					
10.0 Distribution Information								
270		MD_Distribution	information about the distributor of and options for obtaining the resource					Aggregated Class (MD_Met



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
								adata)
273	10.1	transferOptions	provides information about technical means and media by which a resource is obtained from the distributor		O	N		Association
			MD_DigitalTransferOptions (A.10.1.1)					
272	10.2	distributor	The information to identify organizations authorized to distribute the resource.		M	N		Association
			MD_Distributor (A.10.2.1)					
271	10.3	distributionFormat	provides a description of the format of the data to be distributed		M	N		Association
			MD_Format (A.10.3.1)					
274	10.1.1	MD_DigitalTransferOptions	technical means and media by which a resource is obtained from the distributor					
275	10.1.1.1	unitsOfDistribution	tiles, layers, geographic areas, etc., in which data is available		O	1		CharacterString
276	10.1.1.2	transferSize	estimated size of a unit in the specified transfer format, expressed in megabytes. The transfer size is > 0.0		O	1		Real
277	10.1.1.3	onLine	information about online sources from which the resource can be obtained		O	N		Class
			CI_OnlineResource <<DataType>> (A.18.0)					



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
278	10.1.1.4	offLine	information about offline media on which the resource can be obtained		O	1		Class
			MD_Medium <<DataType>> (A.10.4)					
279	10.2.1	MD_Distributor	information about the distributor					
280	10.2.1.1	distributorContact	The party from whom the resource may be obtained.		M	1		Class
			CI_ResponsibleParty <<DataType>> (A.14.0)					
298	10.2.1.2	distributionOrderProcess	provides information about how the resource may be obtained, and related instructions and fee information		O	N		Association
			MD_StandardOrderProcess (A.10.5)					
284	10.3.1	MD_Format	description of the computer language construct that specifies the representation of data objects in a record, file, message, storage device or transmission channel					
285	10.3.1.1	name	name of the data transfer format(s)		M	1		CharacterString
286	10.3.1.2	version	version of the format (date, number, etc.)		M	1		CharacterString
287	10.3.1.3	amendmentNumber	amendment number of the format version		O	1		CharacterString
288	10.3.1.4	specification	name of a subset, profile, or product specification of the format		O	1		CharacterString



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
289	10.3.1.5	fileDecompressionTechnique	recommendations of algorithms or processes that can be applied to read or expand resources to which compression techniques have been applied		O	1		CharacterString
291	10.4	MD_Medium	information about the media on which the resource can be distributed					
292	10.4.1	name	name of the medium on which the resource can be received		O	1		Class
			MD_MediumNameCode <<CodeList>> (B.19)					
293	10.4.2	density	density at which the data is recorded		O	N		Real
294	10.4.3	densityUnits	units of measure for the recording density		C	1	density documented?	CharacterString
295	10.4.4	volumes	number of items in the media identified		O	1		Integer
296	10.4.5	mediumFormat	method used to write to the medium		O	N		Class
			MD_MediumFormatCode <<CodeList>> (B.18)					
297	10.4.6	mediumNote	description of other limitations or requirements for using the medium		O	1		CharacterString
298	10.5	MD_StandardOrderProcess	common ways in which the resource may be obtained or received, and related instructions and fee information					
299	10.5.1	fees	fees and terms for retrieving the resource. Include monetary units (as specified in		O	1		CharacterString



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
			ISO 4217)					
300	10.5.2	plannedAvailableDateTime	date and time when the resource will be available		O	1		Class
			DateTime (E.1)					
301	10.5.3	orderingInstructions	general instructions, terms and services provided by the distributor		O	1		CharacterString
302	10.5.4	turnaround	typical turnaround time for the filling of an order		O	1		CharacterString
11.0 Application Schema Information								
320	11.0	MD_ApplicationSchemaInformation	information about the application schema used to build the dataset					
321	11.1	name	name of the application schema used		M	1		Class
			CI_Citation <<DataType>> (A.13.0)					
322	11.2	schemaLanguage	identification of the schema language used		M	1		CharacterString
323	11.3	constraintLanguage	formal language used in Application Schema		M	1		CharacterString
324	11.4	schemaAscii	full application schema given as an ASCII file		O	1		CharacterString
325	11.5	graphicsFile	full application schema given as a graphics file		O	1		Binary



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
326	11.6	softwareDevelopmentFile	full application schema given as a software development file		O	1		CharacterString
327	11.7	softwareDevelopmentFileFormat	software dependent format used for the application schema software dependent file		O	1		CharacterString
12.0 Extent Information								
334	12.0	EX_Extent	information about horizontal, vertical, and temporal extent					
335	12.1	description	The spatial and temporal extent for the referring object.		C	1	geographicElement and temporalElement and verticalElement not documented?	CharacterString
336	12.2	geographicElement	The spatial extent for the referring object.		M	N		Association
			EX_GeographicExtent <<Abstract>> (A.12.6 and/or A.12.7)					
337	12.3	temporalElement	The date and time extent for the referring object.		O	N	description and geographicElement and verticalElement not documented?	
			EX_TemporalExtent (A.12.8)					
354	12.4	EX_VerticalExtent (Vertical Element)						
355	12.4.1	minimumValue	The lowest vertical extent contained within the dataset.		M	1		Real



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
356	12.4.2	maximumValue	The highest vertical extent contained within the dataset.		M	1		Real
358	12.4.3	verticalCRS	The information representing the vertical coordinate reference system to which the maximum and minimum elevation values are measured.		M	1		Association
			SC CRS (E.7)					
341	12.5	EX_BoundingPolygon	boundary enclosing the dataset, expressed as the closed set of (x,y) coordinates of the polygon (last point replicates first point)					
340	12.5.1	extentTypeCode	indication of whether the bounding polygon encompasses an area covered by the data or an area where data is not present		O	1		Boolean
342	12.5.2	polygon	sets of points defining the bounding polygon		M	N		
343	12.6	EX_GeographicBoundingBox	The spatial and temporal extent for the referring object.					
340	12.6.1	extentTypeCode	indication of whether the bounding polygon encompasses an area covered by the data or an area where data is not present		O	1		Boolean
344	12.6.2	westBoundLongitude	This longitudinal value shall be reported in decimal degrees (positive East).		M	1		Decimal
345	12.6.3	eastBoundLongitude	Easternmost limit of the dataset's extent.		M	1		Decimal



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
346	12.6.4	southBoundLatitude	This latitudinal value shall be reported in decimal degrees (positive North).		M	1		Decimal
347	12.6.5	northBoundLatitude	Northernmost limit of the dataset's extent.		M	1		Decimal
348	12.7	EX_GeographicDescription						
340	12.7.1	extentTypeCode	indication of whether the bounding polygon encompasses an area covered by the data or an area where data is not present		O	1		Boolean
349	12.7.2	geographicIdentifier	identifier used to represent a geographic area		M	1		
350	12.8	EX_TemporalExtent (Temporal Element)	The time period covered by the content of the dataset.					
351	12.8.1	extent	The date and time for the content of the resource.		M	1		Class
			TM_Primitive (E.4)					
352	12.9	EX_SpatialTemporalExtent (Spatial Temporal Element)	time period covered by the content of the dataset					
351	12.9.1	extent	date and time for the content of the dataset		M	1		Class
			TM_Primitive (E.4)					
353	12.9.2	spatialExtent	spatial extent component of composite spatial and temporal extent		M	N		Association
			EX_GeographicExtent <<Abstract>> (A.12.6 and/or A.12.7)					



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
13.0 Citation								
359		CI_Citation	Citation for the dataset					
360	13.1	title	The descriptive heading assigned to the resource being described.		M	1		CharacterString
361	13.2	alternateTitle	short name or other language name by which the cited information is known. Example: "DCW" as an alternative title for "Digital Chart of the World"		O	N		CharacterString
362	13.3	Date	The time or period to which the resource's citation has been assigned or established.		M	N		Class
			CI_Date (A.17) <<DataType>>					
363	13.4	edition	version of the cited resource		O	1		CharacterString
364	13.5	editionDate	date of the edition		O	1		
365	13.6	identifier	value uniquely identifying an object within a namespace		O	N		Class
			MD_Identifier <<DataType>> (A.21.1)					
367	13.7	citedResponsibleParty	The information necessary to identify the authority responsible for the cited work.		M	N		Class
			CI_ResponsibleParty <<DataType>> (A.14.0)					
368	13.8	presentationForm	The particular physical mode of the resource being cited.		M	N		Class



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
			CI_PresentationFormCode <<CodeList>> (B.3)					
369	13.9	series	information about the series, or aggregate dataset, of which the dataset is a part		O	1		Class
			CI_Series <<DataType>> (A.19.0)					
370	13.1	otherCitationDetails	other information required to complete the citation that is not recorded elsewhere		O	1		CharacterString
371	13.11	collectiveTitle	common title with holdings note NOTE title identifies elements of a series collectively, combined with information about what volumes are available at the source cited		O	1		CharacterString
372	13.12	ISBN	international Standard Book Number		O	1		CharacterString
373	13.13	ISSN	international Standard Serial Number		O	1		CharacterString
14.0 Responsible Party								
374	14.0	CI_ResponsibleParty	identification of, and means of communication with, person(s) and organizations associated with the dataset					
375	14.1	individualName	name of the responsible persons surname, given name, title separated by a delimiter		O	1		CharacterString
376	14.2	organisationName	The name of the responsible organization of the resource being identified.		M	1		CharacterString



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
377	14.3	positionName	The given name or title of the individual post within the organization for the resource being identified.		M	1		CharacterString
378	14.4	contactInfo	The attribution necessary to establish communication with the resource's responsible party.		M	1		Class
			CI_Contact <<DataType>> (A.16.0)					
379		role	The function of the resource's responsible party.		M	1		Class
			CI_RoleCode <<CodeList>> (B.4)					
15.0 Address								
380	15.0	CI_Address	location of the responsible individual or organization					
381	15.1	deliveryPoint	The attribute representing the address line of the mailing address.		M	N		CharacterString
382	15.2	city	The town representing the location of the delivery point.		M	1		CharacterString
383	15.3	administrativeArea	The state or province representing the location of the delivery point.		M	1		CharacterString
384	15.4	postalCode	The zip code representing the location of the delivery point.		M	1		CharacterString
385	15.5	country	The country associated with the delivery point.		M	1		CharacterString



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
386	15.6	electronicMailAddress	Address of the electronic mailbox of the responsible organization or individual for the resource.		M	N		CharacterString
16.0 Contact								
387	16.0	CI_Contact	information required to enable contact with the responsible person and/or organization					
388	16.1	phone	The telephone number used to communicate with the organization or individual responsible for the referenced resource.		M	1		Class
			CI_Telephone <<DataType>> (A.20.0)					
389	16.2	address	The physical and electronic mail address used to contact the responsible organization or individual.		M	1		Class
			CI_Address <<DataType>> (A.15.0)					
390	16.3	onlineResource	on-line information that can be used to contact the individual or organization		O	1		
			CI_OnlineResource <<DataType>> (A.18.0)					
391	16.4	hoursOfService	time period (including time zone) when individuals can contact the organization or individual		O	1		CharacterString
392	16.5	contactInstructions	supplemental instructions on how or when to contact the individual or organization		O	1		CharacterString



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
17.0 Date								
393	17.0	CI_Date	reference date and event used to describe it					
394	17.1	Date	The resources referenced time.		M	N		Class
								Date (E.1)
395	17.2	dateType	event used for reference date		M	N		Class
			CI_DateTypeCode <<CodeList>> (B.1)					
18.0 Online Resource								
396	18.0	CI_OnlineResource	information about on-line sources from which the dataset, specification, or community profile name and extended metadata elements can be obtained					
397	18.1	linkage	location (address) for on-line access using a Uniform Resource Locator address or similar addressing scheme		M	1		Class
398	18.2	protocol	connection protocol to be used		O	1		CharacterString
399	18.3	applicationProfile	name of an application profile that can be used with the online resource		O	1		CharacterString
400	18.4	name	name of the online resource		O	1		CharacterString
401	18.5	description	detailed text description of what the online resource is/does		O	1		CharacterString



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
402	18.6	function	code for function performed by the online resource		O	1		
			CI_OnLineFunctionCode <<CodeList>> (B.2)					
19.0 Series								
403	19.0	CI_Series	information about the series, or aggregate dataset, to which a dataset belongs					
404	19.1	Name	name of the series, or aggregate dataset, of which the dataset is a part		O	1		CharacterString
405	19.2	issueIdentification	information identifying the issue of the series		O	1		CharacterString
406	19.3	page	details on which pages of the publication the article was published		O	1		CharacterString
20.0 Telephone								
407	20.0	CI_Telephone	telephone numbers for contacting the responsible individual or organization					
408	20.1	voice	The telephone number representing a direct line to the individual or organization responsible for the resource referenced.		M	1		CharacterString
409	20.2	facsimile	telephone number of a facsimile machine for the responsible organization or individual		O	1		CharacterString



ISO Number	DISDI Number	Element Name	Description	Default Value	Obligation	Max Occur	Condition	Data Type
21.0 Identifier								
205	21.1	MD_Identifier	value uniquely identifying an object within a namespace					
206	21.1.1	authority	person or party responsible for maintenance of the namespace		M			
			CI_Citation <<DataType>> (A.13.0)					
207	21.1.2	code	An alphanumeric value used to uniquely identify an instance of the referencing object.		M			CharacterString
208	21.2	RS_Identifier	identifier used for reference systems					
208.1	21.2.1	codespace	The organization name or party responsible for the reference system resource.	"EPSG"	M	1		CharacterString
208.2	21.2.2	version	The version of the cited reference system.		M	1		CharacterString



Appendix B Code Lists and Enumerations

List of all the relevant DISDI Metadata Profile Code Lists and Enumerations used from ISO 19115.

B.1 CI_DateTypeCode

Name	Domain code	Definition
CI_DateTypeCode	DateTypCd	identification of when a given event occurred
creation	001	date identifies when the resource was brought into existence
publication	002	date identifies when the resource was issued
revision	003	date identifies when the resource was examined or re-examined and improved or amended

B.2 CI_OnlineFunctionCode

Name	Domain code	Definition
CI_OnLineFunctionCode	OnFuncCd	function performed by the resource
download	001	online instructions for transferring data from one storage device or system to another
information	002	online information about the resource
offlineAccess	003	online instructions for requesting the resource from the provider
order	004	online order process for obtaining the resource
search	005	online search interface for seeking out information about the resource

B.3 CI_PresentationFormCode

Name	Domain code	Definition
CI_PresentationFormCode	PresFormCd	mode in which the data is represented
documentDigital	001	digital representation of a primarily textual item (can contain illustrations also)
documentHardcopy	002	representation of a primarily textual item (can contain illustrations also) on paper; photographic material; or other media
imageDigital	003	likeness of natural or man-made features
imageHardcopy	004	likeness of natural or man-made features
mapDigital	005	map represented in raster or vector form
mapHardcopy	006	map printed on paper; photographic material; or other media for use directly by the human user
modelDigital	007	multi-dimensional digital representation of a feature; process; etc.
modelHardcopy	008	3-dimensional; physical model
profileDigital	009	vertical cross-section in digital form
profileHardcopy	010	vertical cross-section printed on paper; etc.
tableDigital	011	digital representation of facts or figures systematically displayed; especially in columns
tableHardcopy	012	representation of facts or figures systematically displayed; especially in columns; printed on paper; photographic material; or other media
videoDigital	013	digital video recording
videoHardcopy	014	video recording on film



B.4 CI_RoleCode

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

B.5 DQ_EvaluationMethodTypeCode

Name	Domain	code Definition
DQ_EvaluationMethodTypeCode	EvalMethTypeCd	type of method for evaluating an identified data quality measure
directInternal	001	method of evaluating the quality of a dataset based on inspection of items within the dataset where all data required is internal to the dataset being evaluated
directExternal	002	method of evaluating the quality of a dataset based on inspection of items within the dataset where reference data external to the dataset being evaluated is required
indirect	003	method of evaluating the quality of a dataset based on external knowledge

B.6 DS_AssociationTypeCode

Name	Domain code	Definition
DS_AssociationTypeCode	AscTypeCd	justification for the correlation of two datasets
crossReference	001	reference from one dataset to another
largerWorkCitation	002	reference to a master dataset of which this one is a part
partOfSeamlessDatabase	003	part of same structured set of data held in a computer mapping and charting information from which the dataset content originates
source	004	part of a set of imagery that when used together, provides three-dimensional images
stereoMate	005	part of a set of imagery that when used together, provides three-dimensional images



B.7 DS_InitiativeTypeCode

Name	Domain code	Definition
DS_InitiativeTypeCode	InitTypCd	type of aggregation activity in which datasets are related
campaign	001	series of organized planned actions
collection	002	accumulation of datasets assembled for a specific purpose
exercise	003	specific performance of a function or group of functions
experiment	004	process designed to find if something is effective or valid
investigation	005	search or systematic inquiry
mission	006	specific operation of a data collection system
sensor	007	device or piece of equipment which detects or records
operation	008	action that is part of a series of actions
platform	009	vehicle or other support base that holds a sensor
process	010	method of doing something involving a number of steps
program	011	specific planned activity
project	012	organized undertaking, research, or development
study	013	examination or investigation
task	014	piece of work
trial	015	process of testing to discover or demonstrate something

B.8 DS_CellGeometryCode

Name	Domain code	Definition
MD_CellGeometryCode	CellGeoCd	code indicating whether grid data is point or area
point	001	each cell represents a point
area	002	each cell represents an area

B.9 MD_CharacterSetCode

Name	Domain code	Definition
MD_CharacterSetCode	CharSetCd	name of the character coding standard used for the resource
ucs2	001	16-bit fixed size Universal Character Set- based on ISO/IEC 10646
ucs4	002	32-bit fixed size Universal Character Set- based on ISO/IEC 10646
utf7	003	7-bit variable size UCS Transfer Format based on ISO/IEC 10646
utf8	004	8-bit variable size UCS Transfer Format based on ISO/IEC 10646
utf16	005	16-bit variable size UCS Transfer Format based on ISO/IEC 10646
8859part1	006	ISO/IEC 8859-1- Information technology – 8-bit single-byte coded graphic character sets – Part 1: Latin alphabet No. 1
8859part2	007	ISO/IEC 8859-2- Information technology – 8-bit single-byte coded graphic character sets – Part 2: Latin alphabet No. 2
8859part3	008	ISO/IEC 8859-3- Information technology – 8-bit single-byte coded graphic character sets – Part 3: Latin alphabet No. 3
8859part4	009	ISO/IEC 8859-4- Information technology – 8-bit single-byte coded graphic character sets – Part 4: Latin alphabet No. 4
8859part5	010	ISO/IEC 8859-51- Information technology – 8-bit single-byte coded graphic character sets – Part 5: Latin/Cyrillic alphabet
8859part6	011	ISO/IEC 8859-6- Information technology – 8-bit single-byte coded graphic character sets – Part 6: Latin/Arabic alphabet



Name	Domain code	Definition
MD_CharacterSetCode	CharSetCd	name of the character coding standard used for the resource
8859part7	012	ISO/IEC 8859-7- Information technology – 8-bit single-byte coded graphic character sets – Part 7: Latin/Greek alphabet
8859part8	013	ISO/IEC 8859-8- Information technology – 8-bit single-byte coded graphic character sets – Part 8: Latin/Hebrew alphabet
8859part9	014	ISO/IEC8859-9- Information technology – 8-bit single-byte coded graphic character sets – Part 9: Latin alphabet No. 5
8859part10	015	ISO/IEC 8859-10- Information technology – 8-bit single-byte coded graphic character sets – Part 10: Latin alphabet No. 6
8859part11	016	ISO/IEC 8859-11- Information technology – 8-bit single-byte coded graphic character sets – Part 11: Latin/Thai alphabet
(reserved for future use)	017	a future ISO/IEC 8-bit single-byte coded graphic character set (e.g. possibly 8859 part 12)
8859part13	018	ISO/IEC 8859-13- Information technology – 8-bit single-byte coded graphic character sets – Part 13: Latin alphabet No. 7
8859part14	019	ISO/IEC 8859-14- Information technology – 8-bit single-byte coded graphic character sets – Part 14: Latin alphabet No. 8 (Celtic)
8859part15	020	ISO/IEC 8859-15
8859part16	021	ISO/IEC 8859-16
jis	022	Japanese code set used for electronic transmission
shiftJIS	023	Japanese code set used on MS-DOS based machines
eucJP	024	Japanese code set used on UNIX based machines
usAscii	025	united states ASCII code set (ISO 646 US)
ebcdic	026	ibm mainframe code set
eucKR	027	Korean code set
big5	028	traditional Chinese code set used in Taiwan; Hong Kong of China and other areas
GB2312	029	simplified Chinese code set

B.10 MD_ClassificationCode

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

B.11 MD_CoverageContentTypeCode

Name	Domain code	Definition
MD_CoverageContentTypeCode	ContentTypCd	specific type of information represented in the cell
image	001	meaningful numerical representation of a physical parameter that is not the actual value of the physical parameter
thematicClassification	002	code value with no quantitative meaning; used to represent a physical quantity
physicalMeasurement	003	value in physical units of the quantity being measured



B.12 MD_DataTypeCode

Name	Domain code	Definition
MD_DatatypeCode	DatatypeCd	datatype of element or entity 001 descriptor of a set of objects that share the same attributes, operations, methods, relationships, and behavior
class	001	descriptor of a set of objects that share the same attributes, operations, methods, relationships, and behavior
codelist	002	flexible enumeration useful for expressing a long list of values, can be extended
enumeration	003	data type whose instances form a list of named literal values, not extendable
codelistElement	004	permissible value for a codelist or enumeration
abstractClass	005	class that cannot be directly instantiated
aggregateClass	006	class that is composed of classes it is connected to by an aggregate relationship
specifiedClass	007	subclass that may be substituted for its superclass
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
interfaceClass	009	named set of operations that characterize the behavior of an element
unionClass	010	class describing a selection of one of the specified types
metaClass	011	class whose instances are classes
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
characterString	013	free text field
integer	014	numerical field
association	015	semantic relationship between two classes that involves connections among their instances

B.13 MD_DimensionNameTypeCode

Name	Domain code	Definition
MD_DimensionNameTypeCode	DimNameTypCd	name of the dimension
row	001	ordinate (y) axis
column	002	abscissa (x) axis
vertical	003	vertical (z) axis
track	004	along the direction of motion of the scan point
crossTrack	005	perpendicular to the direction of motion of the scan point
line	006	scan line of a sensor
sample	007	element along a scan line
time	008	duration



B.14 MD_GeometricObjectTypeCode

Name	Domain code	Definition
MD_GeometricObjectTypeCode	GeoObjTypCd	name of point or vector objects used to locate zero-, one-, two-, or three-dimensional spatial locations in the dataset
complex	001	set of geometric primitives such that their boundaries can be represented as a union of other primitives
composite	002	connected set of curves, solids or surfaces
curve	003	bounded, 1-dimensional geometric primitive, representing the continuous image of a line
point	004	zero-dimensional geometric primitive, representing a position but not having an extent
solid	005	bounded, connected 3-dimensional geometric primitive, representing the continuous image of a region of space
surface	006	bounded, connected 2-dimensional geometric primitive, representing the continuous image of a region of a plane

B.15 MD_ImagingConditioningCode

Name	Domain code	Definition
MD_ImagingConditionCode	ImgCondCd	code which indicates conditions which may affect the image
blurredImage	001	portion of the image is blurred
cloud	002	portion of the image is partially obscured by cloud cover
degradingObliquity	003	acute angle between the plane of the ecliptic (the plane of the Earth's orbit) and the plane of the celestial equator
fog	004	portion of the image is partially obscured by fog
heavySmokeOrDust	005	portion of the image is partially obscured by heavy smoke or dust
night	006	image was taken at night
rain	007	image was taken during rainfall
semiDarkness	008	image was taken during semi-dark conditions—twilight conditions
shadow	009	portion of the image is obscured by shadow
snow	010	portion of the image is obscured by snow
terrainMasking	011	the absence of collection data of a given point or area caused by the relative location of topographic features which obstruct the collection path between the collector(s) and the subject(s) of interest

B.16 MD_KeywordTypeCode

Name	Domain code	Definition
MD_KeywordTypeCode	KeyTypCd	methods used to group similar keywords
discipline	001	keyword identifies a branch of instruction or specialized learning
place	002	keyword identifies a location
stratum	003	keyword identifies the layer(s) of any deposited substance
temporal	004	keyword identifies a time period related to the dataset
theme	005	keyword identifies a particular subject or topic



B.17 MD_ MaintenanceFrequencyCode

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

B.18 MD_ MediumFormatCode

Name	Domain code	Definition
MD_MediumFormatCode	MedFormCd	method used to write to the medium
cpio	001	CoPy In / Out (UNIX file format and command)
tar	002	Tape Archive
highSierra	003	high sierra file system
iso9660	004	information processing – volume and file structure of CD-ROM
iso9660RockRidge	005	rock ridge interchange protocol (UNIX)
iso9660AppleHFS	006	hierarchical file system (Macintosh)

B.19 MD_ MediumNameCode

Name	Domain code	Definition
MD_MediumNameCode	MedNameCd	name of the medium
cdRom	001	read-only optical disk
dvd	002	digital versatile disk
dvdRom	003	digital versatile disk, read only
3halfInchFloppy	004	3,5 inch magnetic disk
5quarterInchFloppy	005	5,25 inch magnetic disk
7trackTape	006	7 track magnetic tape
9trackTape	007	9 track magnetic tape
3480Cartridge	008	3480 cartridge tape drive
3490Cartridge	009	3490 cartridge tape drive
3580Cartridge	010	3580 cartridge tape driveatures which obstruct the collection path between the collector(s) and the subject(s) of interest
4mmCartridgeTape	011	4 millimetre magnetic tape
8mmCartridgeTape	012	8 millimetre magnetic tape
1quarterInchCartridgeTape	013	0,25 inch magnetic tape
digitalLinearTape	014	half inch cartridge streaming tape drive



Name	Domain code	Definition
MD_MediumNameCode	MedNameCd	name of the medium
onLine	015	direct computer linkage
satellite	016	linkage through a satellite communication system
telephoneLink	017	communication through a telephone network
hardcopy	018	pamphlet or leaflet giving descriptive information

B.20 MD_ ObligationCode

Name	Domain code	Definition
MD_ObligationCode	ObCd	obligation of the element or entity
mandatory	001	element is always required
optional	002	element is not required
conditional	003	element is required when a specific condition is met

B.21 MD_ PixelOrientationCode

Name	Domain code	Definition
MD_PixelOrientationCode	PixOrientCd	point in a pixel corresponding to the Earth location of the pixel
center	001	point halfway between the lower left and the upper right of the pixel
lowerLeft	002	the corner in the pixel closest to the origin of the SRS; if two are at the same distance from the origin, the one with the smallest x-value
lowerRight	003	next corner counterclockwise from the lower left
upperRight	004	next corner counterclockwise from the lower right
upperLeft	005	next corner counterclockwise from the upper right

B.22 MD_ ProgressCode

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



B.23 MD_ RestrictionCode

Name	Domain code	Definition
MD_RestrictionCode	RestrictCd	limitation(s) placed upon the access or use of the data
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
patent	002	government has granted exclusive right to make, sell, use or license an invention or discovery
patentPending	003	produced or sold information awaiting a patent
trademark	004	a name, symbol, or other device identifying a product, officially registered and legally restricted to the use of the owner or manufacturer
license	005	formal permission to do something
intellectualPropertyRights	006	rights to financial benefit from and control of distribution of non-tangible property that is a result of creativity
restricted	007	rights to financial benefit from and control of distribution of non-tangible property that is a result of creativity
otherRestrictions	008	limitation not listed

B.24 MD_ ScopeCode

Name	Domain code	Definition
MD_ScopeCode	ScopeCd	class of information to which the referencing entity applies
attribute	001	information applies to the attribute class
attributeType	002	information applies to the characteristic of a feature
collectionHardware	003	information applies to the collection hardware class
collectionSession	004	information applies to the collection session
dataset	005	information applies to the dataset
series	006	information applies to the series
nonGeographicDataset	007	information applies to non-geographic data
dimensionGroup	008	information applies to a dimension group
feature	009	information applies to a feature
featureType	010	information applies to a feature type
propertyType	011	information applies to a property type
fieldSession	012	information applies to a field session
software	013	information applies to a computer program or routine
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
model	015	information applies to a copy or imitation of an existing or hypothetical object
tile	016	information applies to a tile- a spatial subset of geographic data



B.25 MD_ SpatialRepresentationTypeCode

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

B.26 MD_ TopicCategoryCode

Name	Domain code	Definition
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.
Farming	001	rearing of animals and/or cultivation of plants Examples: agriculture; irrigation; aquaculture; plantations; herding; pests and diseases affecting crops and livestock
biota	002	flora and/or fauna in natural environment Examples: wildlife; vegetation; biological sciences; ecology; wilderness; sealife; wetlands; habitat
boundaries	003	legal land descriptions Examples: political and administrative boundaries
climatologyMeteorologyAtmosphere	004	processes and phenomena of the atmosphere Examples: cloud cover; weather; climate; atmospheric conditions; climate change; precipitation
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
elevation	006	height above or below sea level Examples: altitude; bathymetry; digital elevation models; slope; derived products
environment	007	environmental resources protection and conservation Examples: environmental pollution; waste storage and treatment; environmental impact assessment; monitoring environmental risk; nature reserves, landscape
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



Name	Domain code	Definition
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.
		earthquakes; volcanic activity; landslides; gravity information; soils; permafrost; hydrogeology; erosion
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
imageryBaseMapsEarthCover	010	base maps – Examples: land cover, topographic maps, imagery, unclassified images, annotations
intelligenceMilitary	011	military bases, structures, activities Examples: barracks, training grounds, military transportation, information collection
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
location	013	positional information and services Examples: addresses, geodetic networks, control points, postal zones and services, place names
oceans	014	features and characteristics of salt water bodies (excluding inland waters) Examples: tides, tidal waves, coastal information, reefs
planningCadastre	015	information used for appropriate actions for future use of the land Examples: land use maps, zoning maps, cadastral surveys, land ownership
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
structure	017	man-made construction Examples: buildings, museums, churches, factories, housing, monuments, shops, towers
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
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.27 MD_ TopologyLevelCode

Name	Domain code	Definition
MD_TopologyLevelCode	TopoLevCd	degree of complexity of the spatial relationships
geometryOnly	001	geometry objects without any additional structure which describes topology
topology1D	002	1-dimensional topological complex – commonly called “chain-node” topology
planarGraph	003	1-dimensional topological complex that is planar. (A planar graph is a graph that can be drawn in a plane in such a way that no two edges intersect except at a vertex.)
fullPlanarGraph	004	2-dimensional topological complex that is planar. (A 2-dimensional topological complex is commonly called “full topology” in a cartographic 2D environment.)
surfaceGraph	005	1-dimensional topological complex that is isomorphic to a subset of a surface. (A geometric complex is isomorphic to a topological complex if their elements are in a one-to-one, dimensional-and-boundary-preserving correspondence to one another.)
fullSurfaceGraph	006	2-dimensional topological complex that is isomorphic to a subset of a surface
topology3D	007	3-dimensional topological complex. (A topological complex is a collection of topological primitives that are closed under the boundary operations.)
fullTopology3D	008	complete coverage of a 3D Euclidean coordinate space
abstract	009	topological complex without any specified geometric realisation



Appendix C Extensions and Profiles

C.1 Extensions

The concept of *extending* this DISDI Metadata Profile denotes a means to modify the existing standard in a manner that streamlines its structure to better meet the needs of the end user. There are a variety of extension types and provided as followed:

- a. addition of a new metadata section
- b. replacing existing entities with characterString data types with a code list
- c. addition of code list elements whereby a code list is expanded
- d. new metadata element additions
- e. assigning a more stringent obligation on existing metadata elements
- f. assigning domains a higher level restriction for existing metadata elements

C.2 Extension Rules

When creating an extension the most recent version of the DISDI Geospatial Metadata Profile and ISO 19115 shall be thoroughly reviewed to ensure that suitable metadata entities do not exist. Each extended section, entity, and/or element shall be defined following, at a minimum, the format provided in section 6 and Appendix A in order to establish the appropriate schema.

- a. Metadata elements that have been extended shall not change the name, definition, or data type of an existing element.
- b. Metadata extensions can be defined as an entity which can include other valid extensions and existing metadata elements as components.
- c. Extensions are allowed to implement stricter obligations of existing metadata elements.
- d. Extensions are allowed to impose more restrictive domain values on metadata elements
 - i. *If the standard contains five values in the domain of an existing metadata element, the extension may specify that its domain consists of three domain values. The extension shall require that the user select a value from the three domain values.*
- e. Extensions can expand the number of values in a code list.
- f. Extensions shall not permit anything not allowed by the standard.

C.3 Profiles

When there is a requirement to significantly enhance the DISDI Geospatial Metadata Profile whereby there are many modifications within a metadata entity, documentation of a community profile of the standard is recommended. A community profile is usually the result of a community or discipline coordinating and proposing a series of modifications to better meet their needs. ISO 19106 establishes the requirements for developing a



community profile and shall be consulted when/if this section and/or ISO 19115 does not provide adequate insight.

C.4 Profile Rules

- a. Registered profiles shall be consulted before embarking on the development of a new profile.
- b. Extension rules apply to the development of a new profile.
- c. Profiles shall not change the name, definition, or data type of metadata elements.
- d. Profiles shall include:
 - i. the core DISDI metadata elements collected for a dataset
 - ii. all mandatory metadata elements for each mandatory section
 - iii. all conditional metadata elements in all mandatory sections, if the dataset meets the condition required by the metadata element
 - iv. all mandatory metadata elements in all conditional sections, if the dataset meets the condition required by the section
 - v. all conditional metadata elements in all conditional sections, if the dataset meets the condition required by the metadata element and the section.
- e. The relationships shall be defined following the format outlined in section 6 and appendix A in order to establish a structure and schema.
- f. The profile shall be provided to anyone receiving metadata that was created according to that profile.



Appendix D DISDI Metadata Test Suite

All metadata claiming conformance to this profile shall be capable of successfully meeting each of the requirements outlined herein. This suite of tests applies only to the data elements defined by this profile.

1. Test Case Identifier: Basic Completeness Test

Purpose –

Determine conformance by the inclusion of all classes/sub-classes/attributes with a mandatory and/or conditional obligation.

Method –

Compare the respective metadata package against the xml metadata claiming conformance to the DISDI Geospatial Metadata Profile to ensure the inclusion of all mandatory and applicable conditional elements.

2. Test Case Identifier: Maximum Occurrence Test

Purpose –

To confirm metadata classes, sub-classes, and attribute inclusion occur within or meets the “maximum occurrence” specification.

Method –

Compare the number of occurrences for each metadata class, sub-class, and attribute against the designated “maximum occurrence” requirement within Appendix B of the DISDI Geospatial Metadata Profile.

3. Test Case Identifier: Data Type Test

Purpose –

To determine if each metadata class, sub-class, attribute used in the metadata uses the data type specified in this profile.

Method –

The value for each metadata class, sub-class, attribute provided is tested to ensure its data type adheres to that which is specified within this profile.



4. Test Case Identifier: Domain Test;

Purpose –

To confirm that each metadata attribute value used falls within the respective domain specified in this profile.

Method –

Attribute values are tested to ensure that each metadata class or sub-class utilizing an enumeration or code list corresponds to a value within the domain specified in this profile.

5. Test Case Identifier: Schema Test

Purpose –

To determine if the metadata classes, sub-classes, and attributes follow the schema specified in this profile.

Method –

Attribute values are tested to ensure that each metadata attribute is contained within its respective class.



Appendix E External Domain Entities

Annex A *Data Dictionary for DISDI Geospatial Metadata* captures the elements of each entity where a domain value is assigned according to the data type. Many of the entities within this implementation are more fully documented by other standards external to this documentation. This appendix provides the pertinent information necessary to articulate how those values shall be populated.

E.1 Date and DateTime information

The **Date** provides the value for which an event occurred given any month, day, and year. This implementation of the DISDI metadata profile shall utilize the following 8-digit format:

YYYY-MM-DD

- YYYY represents the calendar year
- MM represents the ordinal number of the calendar month
- DD represents the ordinal number of a day within the calendar month

The **DateTime** provides the value for which an event occurred given any date and time. This DISDI Metadata implementation shall always utilize the Coordinated Universal Time (UTC) and incorporate the hour, minute, and second by utilizing the following alphanumeric extension denoting the specific time of a particular day:

YYYY-MM-DDThh:mm:ss.sZ

- YYYY-MM-DD represents the basic Date format
- T designates the start of the time of day representation
- hh represents the hour of the day
- mm represent the minute of the hour
- ss. represents the second of the minute
- Z is the designator for universal coordinated time

ISO 8601 *Data elements and interchange formats – Information interchange – Representation of dates and times* fully documents the representation of the Gregorian calendar and 24-hour local or Coordinated Universal Time (UTC) to support information exchange.

E.2 Distance, Angle, Measure, Number, Record, RecordType, Scale, and UomLength information

Distance: the length of a traverse between two points.

Decimal: a data type in which the number represents an exact value as a finite representation of a decimal number.

Measure: the result of performing the act or process of ascertaining the extent, dimensions or quantity of some entity.



Number: the abstract class that can be sub-typed to a specific number type (i.e. real, integer, decimal, etc).

Record: a structure of logically related elements that may be used as an implementation representation for features, by keeping a list of (name, value) pairs in a dictionary. This represents a generic storage structure for features.

RecordType: the predetermined annotation (name) attributed to the information within the record.

Scale: the ratio of one quantity to another.

UnitOfMeasure: any of the systems devised to measure some physical quantity such as distance or area or a system devised to measure the passage of time.

UomLength: measuring system devised to interpret the length/distance between two entities.

A fully documented explanation for this information is provided within ISO/TS 19103.

E.3 Feature Type and Attribute Type information

GF_FeatureType: textual information describing the concept of a feature type, containing all feature types.

GF_AttributeTypes: the class of attribute definition for a feature type.

A fully documented explanation for this information is provided within ISO 19109.

E.4 PeriodDuration and temporal primitive information

TM_Object defines temporal, geometric, and topological objects that shall be used as values for the temporal characteristics of features and datasets.

TM_Primitive is an abstract class representing a non-decomposed, fundamental element of geometry or topology of time.

A fully documented explanation for this information is provided within ISO 19108
Geographic Information – Temporal schema

E.5 Point and Object information

GM_Object: root class of the geometric object taxonomy and supports interfaces to all geographically referenced geometric objects.

GM_Point: 0-dimensional geometric primitive, representing a position but not having extent.

A fully documented explanation for this information is provided within ISO 19107
Geographic Information – Spatial schema.

E.6 Set and Sequence information

A **set** refers to the finite collection of objects, where each object appears in the collection only once. A set shall not contain any duplicated instances and the order of the elements of the set is not specified.

A **sequence** refers to an ordered collection of elements. Sequences can be repeated and may be used as a list or an array.



This class is documented in full in ISO/TS 19103:2005 *Geographic information – Conceptual schema language*.

E.7 Vertical Datum information

SC_VerticalDatum is a set of parameters used to describe the relation of gravity-related heights to the Earth.

A fully documented explanation for this information is provided within ISO 19111 *Geographic information — Spatial referencing by coordinates*.



Appendix F DISDI Metadata Implementation Example

The following metadata layout represents the mandatory classes and respective attribution required by this version of the DISDI Metadata Profile. It is merely an outline that denotes a simple view of how the necessary metadata elements are reported. As the DISDI Geospatial Metadata Profile XML schema are established, transformation style sheets (.xslt) can then be developed and used to provide a user-friendly view.

Note that this fictitious metadata documentation represents information for a hierarchy level equal to a dataset. While this version of the metadata profile specification does have the capability to support a variety of hierarchy levels, its scope is limited to support for the most commonly shared types of geospatial data – the dataset.

The next version of this metadata profile specification will provide more robust explanation and examples that support dataset series where parent-child type metadata relationships could exist (for example, service headquarters/installation).

+ Metadata Entity Set Information

File Identifier: 2546

Language: eng

Character Set Code: 004 (utf-8)

Heirarchy Level: 005 (dataset)

Date: 19991224

Date Type: 001 (creation)

Contact:

Responsible Party:

Organization: OACSIM IGI&S

Position: Geo Integration Project Officer

Role: 010 (Publisher)

Contact Information:

Phone:

Voice: 555-555-1234

Address:

Delivery Point: 400 Army Navy Drive, Suite 5

City: Arlington

Administrative Area: VA

Postal Code: 22202

Country: USA

Electronic Mail Address: Army.helpdesk@army.hq.mil

Metadata Standard Name: DISDI Metadata Profile

Metadata Standard Version: 1.0

**+ Identification Information****Citation:****Title:** Wetland Area Fort X**Date:** 19971209**Date Type:** 001 (Creation)**Cited Responsible Party:****Organization:** OACSIM Environmental Office**Position:** Environmental Project Officer**Role:** 011 (Author)**Contact Information:****Phone:****Voice:** 555-123-4567**Address:****Delivery Point:** 1234 Harrier Drive, Suite 200**City:** Arlington**Administrative Area:** VA**Postal Code:** 22056**Country:** USA**Electronic Mail Address:** Envirohelp@hq.army.mil**Presentation Form:** 005 (MapDigital)**Abstract:** This dataset is a representation of Fort X wetlands as collected from aerial photography by the Fort X environmental group 2 days after hurricane Camilla.**Purpose:** Not intended for display at greater than 1:5000 or analysis requiring geographic accuracy of better than 10 m. Intended for display in conjunction with Army Common Installation Picture Series of data sets and may not align with other non-DoD data sets.**Status:** 001 (Completed)**Point of Contact:****Responsible Party:****Organization:** OACSIM Environmental Office**Position:** Environmental GIS Analyst**Role:** 002 (Custodian)**Contact Information:****Phone:****Voice:** 555-987-6543**Address:****Delivery Point:** 1234 Harrier Drive, Suite 507**City:** Arlington**Administrative Area:** VA**Postal Code:** 22056**Country:** USA**Electronic Mail Address:** Envirohelp@hq.army.mil**Spatial Representation Type:** 001 (vector)**Language:** eng**Character Set Code:** 004 (utf-8)



Topic Category: Inland Waters

Extent:

Geographic Bounding Box:

West Bounding Longitude: -91.863725

East Bounding Longitude: -91.334371

South Bounding Latitude: 41.856719

North Bounding Latitude: 42.302217

+ **Descriptive Keywords:**

Keyword: wetland

Keyword: hydrography

Keyword: marsh

+ **Constraint Information**

Metadata Constraints:

Legal Constraints:

Use Limitation: Appropriate for public dissemination

Access Constraints: None

Use Constraints: None

Security Constraints:

Use Limitation: This document contains information exempt from mandatory disclosure under the Freedom of Information Act.

Classification: 001 (Unclassified)

Classification System: Department of Defense Information Security Program – DoD Directive 5200.1

Handling Description: Approved for public release; distribution is unlimited.

Resource Constraints:

Legal Constraints:

Use Limitation: Not to be used for navigation

Access Constraints: 001 (copyright)

Use Constraints: 005 (license)

Security Constraints:

Use Limitation: This document contains information exempt from mandatory disclosure under the Freedom of Information Act.

Classification: 001 (Unclassified)

Classification System: Department of Defense Information Security Program – DoD Directive 5200.1

Handling Description: Approved for public release; distribution is unlimited.

+ **Maintenance Information**

Maintenance and Update Frequency: Annually

Contact:

Responsible Party:

Organization: OACSIM Environmental Office

Position: Environmental GIS Analyst

Role: (002) Custodian

Contact Information:



Phone:

Voice: 555-987-6543

Address:

Delivery Point: 1234 Harrier Drive, Suite 507

City: Arlington

Administrative Area: VA

Postal Code: 22056

Country: USA

Electronic Mail Address: Envirohelp@hq.army.mil

+ **Reference System Information**

Reference System Identifier:

Code: WGS_1984_UTM_Zone_13N

Code Space: EPSG

Version: 6.11

Authority:

Citation:

Title: EPSG Geodetic Parameter Dataset

Date: 20060907

Date Type: 001 (creation)

Cited Responsible Party:

Organization: Geodesy Subcommittee of the Surveying and Positioning Committee of the International Association of Oil and Gas Producers (OGP)

Position: Chairman

Role: 010 (Publisher)

Contact Information:

Phone:

Voice: Unknown

Address:

Delivery Point: 12418 Stafford Springs Drive

City: Houston

Administrative Area: TX

Postal Code: 77077

Country: USA

Electronic Mail Address: <http://www.epsg.org/>

+ **Distribution Information**

Distributor:

Distributor Contact

Responsible Party:

Organization: OACSIM IGI&S

Position: Geo Integration Project Officer

Role: 010 (Publisher)

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Delivery Point: 400 Army Navy Drive, Suite 5

City: Arlington

Administrative Area: VA

Postal Code: 22202

Country: USA

Electronic Mail Address: Army.helpdesk@army.hq.mil

Distribution Format:

Name: ArcGIS Personal Geodatabase

Version: 9.2