

ECP 2005 GEO 038026 EGN

EGN

Metadata profile

| | |
|----------------------------|---|
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¹ OJ L 79, 24.3.2005, p. 1.

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1 Executive summary

Within WP3 a metadata profile according to OGC/ISO standards had to be defined, *“providing information about the identification, the extent, the quality, the spatial and temporal schema, spatial reference, and distribution of digital geographic data based on ISO 19115 standard.”*

The EuroGeoNames (EGN) infrastructure covers databases of 15 European mapping and cadastral agencies (NMCAs) in the first stage of the EU-funded period.

Deliverable “D3.3 – Metadata profile” deals with the metadata for the national contributions only. The profile/table contains information about the national databases maintained and any specialities that apply only for one country.

Due to the fact that EuroGeographics is a member of the EGN consortium and NCMAs have had prior exposure to EuroRegionalMap (ERM) and EuroGlobalMap (EGM), the same international standard for the metadata as well as a (only) slightly amended metadata sheet was used.

The metadata will be defined taking into account coherence needs with ERM, EGM and the INSPIRE initiative.

It is envisaged to catalogue the metadatasets through an existing metadata catalogue, e.g. EuroMapFinder (EMF), the metadata catalogue at EuroGeographics.

2 Change summary

| Version | Date | Author | Notes |
|---------|------------|--|---------------|
| 1.0 | 16/07/2007 | Pier-Giorgio Zaccheddu, Jörgen Spradau | Initial draft |
| 1.1 | 01/08/2007 | Georg Börner, Markus Stecker | Update |

3 Related documents

- ISO 19115:2003(E) standard and ISO 19115 Technical corrigendum I (2006-07-01)
- ISO 19119:2003(E) standard
- Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007
- INSPIRE DT Metadata – Draft Implementing Rules for Metadata, 2007-02-02

4 Contact

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5 Introduction

5.1 The EuroGeoNames (EGN) project

The EuroGeoNames (EGN) project was initiated in 2004 by BKG and integrated into the work program of EuroGeographics, in which BKG assumed the overall concept and the project coordination. The objective of this project launched on 1 September 2006 is to set up services for an internet-based infrastructure, which shall enable geographical names searches in all European languages. The EGN infrastructure is developed in close cooperation with 15 European national mapping and cadastral agencies (NMCAs), which make their names databases accessible for EGN. Data keeping and updating will continue to be the sole responsibility of the respective countries.

The EGN project is carried out by an international consortium comprising nine partners from the economy, science and public administration sectors and coming from five countries (Austria, Germany, the Netherlands, Slovenia, Great Britain) as well as EuroGeographics. Further agencies belonging to 12 countries (Cyprus, Czech Republic, Spain, Finland, France, Hungary, Lithuania, Latvia, the Netherlands, Norway, Slovakia, Turkey) presently constitute the EGN Reference Group and are the potential data suppliers having declared themselves prepared to make their national geographic names data stocks available for the requirements of the EGN project.

EGN will make a contribution to the setup of the European Spatial Data Infrastructure (ESDI), which will be established within the frame of the INSPIRE initiative.

5.2 Metadata in general

Metadata is data about a dataset. It gives information that allows a better understanding of the data and enables the user to determine whether the data is useful for the application in question and to apply the data in the most efficient way. It also enables the data producer to document and characterize the produced data.

5.3 Metadata in EuroGeoNames (EGN)

The EuroGeoNames (EGN) infrastructure covers databases of 15 European mapping and cadastral agencies (NMCAs) in the first stage of the EU-funded period.

Due to the fact that EuroGeographics is a member of the EGN consortium and NMCAs have had prior exposure to EuroRegionalMap (ERM) and EuroGlobalMap (EGM), the same international standard for the metadata as well as an only slightly amended metadata sheet was used.

Additionally, the inception of the EuroGeoNames (EGN) project predates the INSPIRE directive and this has been a complication. However, the EGN project is aiming to be as compliant as possible to requirements defined by the INSPIRE Drafting Teams¹, which although just available at time of writing, are still of draft status only. Thus, the INSPIRE process has to be observed as subsequent developments during implementation may necessitate the metadata profile revision.

- The EuroGeoNames metadata follows the ISO standard 19115. It contains information about the national databases.
- The EuroGeoNames metadata will be defined, taking into account coherence needs with EuroRegionalMap and the INSPIRE initiative.

¹ Responsible for metadata: INSPIRE DT Metadata – Draft Implementing Rules for Metadata, 2007-02-02

Generally, within EGN a hierarchical structure of the metadata with three levels are to be defined:

1. EuroGeoNames (EGN) Central service (output)
2. National contributions (input)
3. Variant Names and exonyms database (output)

Deliverable “D3.3 – Metadata profile”, which will be submitted to the EC in August 2007 deals with the metadata for the national contributions only. The profile/table contains information about the national databases maintained and any specialities that apply only for one country.

The metadata for the EGN Central Service (output) will contain all the information that applies to the whole EGN infrastructure /services output. The metadata for the Variant Names (exonyms) database (output) contains all the information that applies to the respective central database maintained by BKG. Both information will not be provided with deliverable “D3.3 – Metadata profile”. These will be gained after having connected all national databases as well as the variant names (exonyms) database to the EGN infrastructure. Furthermore information about the business and pricing model, which still has to be approved by the EGN Reference Group, is required.

Hence, D3.3 will provide a common profile for storing and maintaining a metadata set for each participating country after the EU-funded project duration, and if applicable, one for the EuroGeoNames Central Service and one for the variant names (exonyms) database.

The file "EGN_metadata_national.xls" contains all elements that apply to the national contributions. It is structured into three Excel Worksheets: “Introduction”, “Metadata” (comprising all fields to be completed by the NMCAs), “Code Lists”.

All 15 NMCAs, being members of the EGN Reference Group, are requested to complete the “Metadata” worksheet.

The metadata for the EGN Central Service and for the variant names (exonyms) database will be filled in by BKG Germany.

All metadata for EuroGeoNames (EGN and national contributions) will be stored and maintained in the EuroGeographics metadata service *EuroMapFinder*.

6 Instructions for filling in the metadata

6.1 Structure and content

The metadata for EuroGeoNames follows mainly the ISO 19115 standard and is structured in packages, classes and attributes . There are mandatory, optional and conditional elements. Most elements are text, some attributes can be coded values, dates, integers, URLs or other data types.

Where possible, the EGN project aims at being as compliant as possible to requirements defined by the INSPIRE Drafting Team Metadata, which although just available at time of writing, are still of draft status only. This INSPIRE documentation “Draft Implementation Rules for Metadata” is mainly written in an abstract manner. The documentation recommends a mapping for ISO 19115 / 19119 or Dublin Core.

| | |
|-------------|--|
| | Data identification (MD_Identification & MD_DataIdentification) |
| packages: | |
| main class: | <i>MD_Identification</i> |
| sub class: | <i>citation</i> |
| sub class: | <i>CI_Citation</i> |
| attributes: | title |
| | |
| class: | <i>CI_Citation</i> |
| attribute: | title |

The column "Obligation" shows if an element is mandatory (M), optional (O) or conditional (C) as given in the ISO 19115 standard.

The column "Data type" shows which data type should be used for the element.

- "Text": free text may be used
- "Code": an element from the code lists has to be used
- "URL": example: www.eurogeographics.org
- ...

The column "F" (grey fields only) is for filling in your metadata information:

| |
|---|
| These fields will be filled in by the EGN Project Coordinator |
| These fields do not have to be filled in. They are the generic terms of the following class/sub-class. |
| These fields should be filled in! They contain the metadata you want to include. They can be either mandatory, conditional or optional. |

The last column "Definition" gives a short explanation concerning the content of the class/sub-class.

All necessary code lists are given in the worksheet "Code Lists".

6.2 General comments

1. Please fill in all grey fields. Metadata is only helpful for others if it contains enough information.
2. The metadata information should be given in English and, where applicable, in all official languages.
3. In some text fields it may be necessary to write longer statements than possible in Excel, like Lineage/Statement, descriptions or reports. If your text does not fit into the space given please add a separate text file (*.doc or *.txt) that contains all additional information. It will be added to the database by BKG later.
4. The "contact" is mandatory for the metadata part (first package). If the same point of contact applies also for the metadata part, the data identification part and the distribution information part, you don't have to give all the information again, just state "same as MD_Metadata -> contact info". If there are different points of contact for the different parts please give all the information for all contacts.

6.3 Additional explanations for some fields

6.3.1 Role (ISO-ID 379)

Most NMCAs should be:

- "003": owner
- "005": distributor
- "006": originator
- "007": point of contact.

Of course there may be exceptions for some NMCAs.

6.3.2 Distribution (MD_Distribution)

Please fill in these elements if possible:

linkage (ISO-ID 397): can the data be accessed and/or ordered and/or downloaded from some national web site?

6.4 Contacts for technical questions regarding the metadata of the EGN project

If you have any questions concerning the metadata profile or if you are not sure how to fill in the fields please ask the

- EGN Project Manager, Pier-Giorgio Zaccheddu, pier.zaccheddu@bkg.bund.de,
- or send an email to the EGN technical staff member
- Jörgen Spradau, joergen.spradau@bkg.bund.de.

Attachment:

"EGN_metadata_national.xls"



EGN_Metadata_natio
nal.xls

EGN Metadata profile (national contribution level)

This tables contain only those packages, entities, elements and sub-elements that apply to the national contributions.

This metadata draft is in accordance with the ISO 19115:2003(E) and ISO 19115 Technical corrigendum I (2006-07-01). Additional elements have been added according to the INSPIRE requirements, which although just available at time of writing, are still of draft status only. This INSPIRE documentation "Draft Implementation Rules for Metadata" is mainly written in an abstract manner. The documentation recommends a mapping for ISO 19115 / 19119 or Dublin Core.

The metadata is structured in packages, entities and elements (with sub-elements).

| | |
|-------------|--|
| | Data identification (MD_Identification & MD_DataIdentification) |
| packages: | |
| mainclass: | <i>MD_Identification</i> |
| subclass: | <i>citation</i> |
| subclass: | <i>CI_Citation</i> |
| attributes: | title |
| | |
| class: | <i>CI_Citation</i> |
| attribute: | title |

All core metadata elements defined as "mandatory" in the ISO 19115 standard are included.

Some additional elements ("optional") from the standard were included.

The column "obligation" shows if an element is mandatory (M), optional (O) or conditional (C) as mentioned in the ISO standard.

Instructions for filling out the metadata fields

Only the fields marked grey should be filled in (please, see MS-Word file named "D3.3_Metadata profile.doc" containing some explanations as well as instructions for filling in the metadata profile /national contribution (see chapter 7).

| Metadata (MD_Metadata) | ISO-ID | Obligation | INSPIRE* | Data type | root entity which defines metadata about a resource or resources | Definition |
|---------------------------|--------|------------|----------|-----------|--|--|
| fileIdentifier | 2 | O | | Text | DE | unique identifier for this metadata file, ISO 3166-1 |
| language | 3 | C | X | Text | ENG | INSPIRE name: Metadata language language used for documenting metadata, ISO 639-2 |
| character set | 4 | C | | Class | | full name of the character coding standard used for the metadata set |
| MD_CharacterSetCode | | | | Code | 004 | Code List B.5.10 |
| hierarchyLevel | 6 | C | | Class | | scope to which the metadata applies |
| MD_ScopeCode | | | | Code | 016 | Code List B.5.25 |
| hierarchyLevelName | 7 | C | | Text | national contribution | name of the hierarchy levels for which the metadata is provided |
| contact | 8 | M | | Class | | party responsible for the metadata information |
| CI_ResponsibleParty | 374 | | | Class | | identification of, and means of communication with, person(s) and organizations associated with the dataset |
| individualName | 375 | C | X | Text | Endrullis, Dr. Manfred | INSPIRE name: Metadata point of contact -> individual name |
| organisationName | 376 | C | X | Text | Federal Agency for Cartography and Geodesy (BKG) | INSPIRE name: Metadata point of contact -> organisation name if this attribute is not set, than the individualName should be filled for INSPIRE |
| contactInfo | 378 | O | | Class | | address of the responsible party |
| CI_Contact | 387 | | | Class | | information required to enable contact with the responsible person and/or organization |
| phone | 388 | O | | Class | | |
| CI_Telephone | 407 | | | Class | | telephone numbers |
| voice | 408 | O | | Text | +49-341-5634-369 | telephone number |
| facsimile | 409 | O | | Text | +49-341-5634-415 | fax number |
| address | 389 | O | | Class | | |
| CI_Address | 380 | | | Class | | |
| deliverypoint | 381 | O | | Text | Karl-Rothe-Straße 10-14 | |
| city | 382 | O | | Text | Leipzig | |
| postalCode | 384 | O | | Text | 04105 | |
| country | 385 | O | | Text | DE | ISO 3166-1 |
| electronicMailAddress | 386 | O | | Text | manfred.endrullis@bkg.bund.de | |

| | | | | | | | |
|--|--|---------------|-------------------|-----------------|------------------|--|---|
| | role | 379 | M | X | Code | 001 | INSPIRE name: Metadata point of contact -> role Code List B.5.5 (CI_RoleCode) |
| | dateStamp | 9 | M | X | Class | 2007-07-10 | INSPIRE name: Metadata date stamp ISO 8601 (example: YYYY-MM-DD --> 2002-09-01) (B.4.2) |
| | referenceSystemInfo | 13 | O | | Class | | Abstract Class --> see MD_ReferenceSystem |
| | identificationInfo | 15 | M | | Class | | Abstract Class --> see MD_Identification |
| | distributionInfo | 17 | O | | Class | | Class --> see MD_Distribution |
| | dataQualityInfo | 18 | O | | Class | | Class --> see DQ_DataQuality |
| | metadataConstraints | 20 | O | | Class | | Class --> see MD_Constraints |
| | | | | | | | |
| | Reference system information (MD_ReferenceSystem) | ISO-ID | Obligation | INSPIRE* | Data type | basic information required to uniquely identify a resource or resources | Definition |
| | referenceSystemIdentifier | 187 | C | | Class | | name of reference system |
| | code | 207 | M | | Text | Gauss-Krüger | alphanumeric value identifying an instance in the namespace (example: codeSpace (208.1): urn:ogc:def:crs:EPSG) |
| | | | | | | | |
| | Data identification (MD_Identification & MD_DataIdentification) | ISO-ID | Obligation | INSPIRE* | Data type | basic information required to uniquely identify a resource or resources | Definition |
| | MD_Identification | 23 | | | Class | MAINCLASS | basic information required to uniquely identify a resource or resources |
| | citation | 24 | M | | Class | | citation data for the resource(s) |
| | CI_Citation | 359 | | | Class | | standardized resource reference |
| | title | 360 | M | X | Text | Geographische Namen Deutschland | INSPIRE name: Resource title name by which the cited resource is known |
| | alternateTitle | 361 | O | | Text | GN-DE | |
| | date | 362 | M | | Class | | |
| | CI_Date | 393 | | | Class | | |
| | | | | | | | |
| | date | 394 | M | X | date | 2007-07-10 | INSPIRE name: Temporal reference ISO 8601 (example: YYYY-MM-DD --> 2002-09-01) (B.4.2) |

| description | | 335 | C | X | Text | Federal Republic of Germany | INSPIRE name: EX_GeographicDescription |
|--|--|--------|-----------|----------|-----------|---|---|
| | | | | | | | spatial and temporal extent for the referring object |
| Distribution Information (MD_Distribution) | | ISO-ID | Obligatio | INSPIRE* | Data type | information about the distributor of and options for obtaining the resource | Definition |
| distributor | | 272 | O | | Class | | provides information about the distributor |
| MD_Distributor | | 279 | | | Class | | information about the distributor |
| distributorContact | | 280 | M | | Class | | party from whom the resource may be obtained. This list need not be exhaustive |
| CI_ResponsibleParty | | 374 | | | Class | | identification of, and means of communication with, person(s) and organizations associated with the dataset |
| individualName | | 375 | C | | Text | Retzek, Reiner | |
| organisationName | | 376 | C | | Text | Federal Agency for Cartography and Geodesy (BKG) | |
| contactInfo | | 378 | O | | Class | | address of the responsible party |
| CI_Contact | | 387 | | | Class | | information required to enable contact with the responsible person and/or organization |
| phone | | 388 | O | | Class | | |
| CI_Telephone | | 407 | | | Class | | telephone numbers |
| voice | | 408 | O | | Text | +49-69-6333-349 | telephone number |
| facsimile | | 409 | O | | Text | +49-69-6333-441 | fax number |
| address | | 389 | O | | Class | | |
| CI_Address | | 380 | | | Class | | |
| deliverypoint | | 381 | O | | Text | Richard-Strauss-Allee 11 | |
| city | | 382 | O | | Text | Frankfurt am Main | |
| postalCode | | 384 | O | | Text | 60598 | |
| country | | 385 | O | | Text | DE | ISO 3166-1 |
| electronicMailAddress | | 386 | O | | Text | reiner.retzek@bkg.bund.de | |
| role | | 379 | M | | Code | 005 | Code List B.5.5 (CI_RoleCode) |
| transferOptions | | 273 | O | | Class | | provides information about technical means and media by which a resource is obtained from the distributor |
| MD_DigitalTransferOptions | | 274 | | | Class | | technical means and media by which a resource is obtained from the distributor |
| onLine | | 277 | O | | Class | | information about online sources from which the resource can be obtained |

| | | | | | | |
|---------------------------------------|---------------|-------------------|-----------------|------------------|---|--|
| <i>DQ_Element</i> | 99 | C | | Class | | |
| <i>result</i> | 107 | M | | Class | | |
| <i>DQ_Result</i> | 128 | | | Class | | <i>generalization of more specific result classes</i> |
| <i>DQ_ConformanceResult</i> | 129 | | | Class | | |
| <i>specification</i> | 130 | M | | Class | | <i>citation of product specification or user requirement against which data is being evaluated</i> |
| <i>citation</i> | 24 | M | | Class | | <i>citation data for the resource(s)</i> |
| <i>CI_Citation</i> | 359 | | | Class | | <i>standardized resource reference</i> |
| <i>title</i> | 360 | M | | Text | Geographische Namen Deutschland | <i>name by which the cited resource is known</i> |
| <i>date</i> | 362 | M | | Class | | |
| <i>CI_Date</i> | 393 | | | Class | | |
| <i>date</i> | 394 | M | | date | 2007-07-10 | ISO 8601 (example: YYYY-MM-DD --> 2002-09-01) (B.4.2) |
| <i>dateType</i> | 395 | M | | Code | 001 | identification of when a given event occurred (Code List B.5.2) (CI_DateTypeCode) |
| <i>explanation</i> | 131 | M | | Text | Data description according to the data maintenance and description of the data provided by the service are identical | <i>explanation of the meaning of conformance for this result</i> |
| <i>pass</i> | 132 | M | | Bool | 1 | <i>indication of the conformance result where 0 = false and 1 = pass</i> |
| <i>lineage</i> | 81 | C | | Class | | <i>non-quantitative quality information about the lineage of the data specified by the scope</i> |
| <i>LI_Lineage</i> | 82 | | | Class | | <i>information about the events or source data used in constructing the data specified by the scope or lack of knowledge about lineage</i> |
| <i>statement</i> | 83 | C | X | Text | Several products/datasets were amalgamated for the GN-DE: Digital Landscape Model 1:250 000 / 1:1 000 000 (DLM 250/1000), Administrative Units 1:250 000 (VG250) and Geographical Names 1:250 000 / 1:1 000 000 (GN250/1000). (It is possible to store feature life-cycle rules here) | INSPIRE name: Lineage <i>general explanation of the data producer's knowledge about the lineage of a dataset</i> |
| additional INSPIRE Information | ISO-ID | Obligation | INSPIRE* | Data type | information about the distributor of and options for obtaining the resource | Definition |

| | | | | | | |
|---|--|----------|----------|------|-----------------|---|
| Service type | | M | X | Text | WFS | Specify a service type in a standardized format (INSPIRE code list), ISO 19119 |
| Service type version | | O | X | Text | 1.1.0 | Specify the version number of a well known service type, ISO 19119 (mandatory if a service is available) |
| Operation name | | M | X | Text | GetCapabilities | Specify the invocation name for a service interface, ISO 19119 |
| Distributed computing platform | | M | X | Text | WebServices | Specify the distributed computing platform(s) the service instance is developed to, ISO 19119 |
| * INSPIRE DT Metadata – Draft Implementing Rules for Metadata, 2007-02-02 | | | | | | |

B.5.2 Date type Code

| Name | Domain | Code | Definition |
|------|-----------------|-----------|---|
| 1 | CI_DateTypeCode | DateTypCd | identification of when a given event occurred |
| 2 | creation | 001 | date identifies when the resource was brought into existence |
| 3 | publication | 002 | date identifies when the resource was issued |
| 4 | revision | 003 | date identifies when the resource was examined or re-examined and improved or amended |

B.5.5 Role Code

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

B.5.10 Character Set Code

| Name | Domain | code | Definition |
|------|---------------------|-----------|---|
| 1 | MD_CharacterSetCode | CharSetCd | name of the character coding standard used for the resource |
| 2 | ucs2 | 001 | 16-bit fixed size Universal Character Set, based on ISO/IEC 10646 |
| 3 | ucs4 | 002 | 32-bit fixed size Universal Character Set, based on ISO/IEC 10646 |
| 4 | utf7 | 003 | 7-bit variable size UCS Transfer Format, based on ISO/IEC 10646 |
| 5 | utf8 | 004 | 8-bit variable size UCS Transfer Format, based on ISO/IEC 10646 |
| 6 | utf16 | 005 | 16-bit variable size UCS Transfer Format, based on ISO/IEC 10646 |
| 7 | 8859part1 | 006 | latin-1, west European code set |
| 8 | 8859part2 | 007 | latin-2, central European code set |
| 9 | 8859part3 | 008 | latin-3, south European code set |
| 10 | 8859part4 | 009 | latin-4, north European code set |
| 11 | 8859part5 | 010 | cyrillic code set |
| 12 | 8859part6 | 011 | arabic code set |

| | | | |
|----|---------------------------|-----|--|
| 13 | 8859part7 | 012 | greek code set |
| 14 | 8859part8 | 013 | hebrew code set |
| 15 | 8859part9 | 014 | latin-5, Turkish code set |
| 16 | 8859part10 | 015 | latin-6 code set |
| 17 | 8859part11 | 016 | thai code set |
| 18 | (reserved for future use) | 017 | e.g. possibly 8859 part12 |
| 19 | 8859part13 | 018 | latin-7 code set |
| 20 | 8859part14 | 019 | latin-8 code set |
| 21 | 8859part15 | 020 | latin-9 code set |
| 22 | 8859part16 | 021 | latin-10 code set |
| 23 | jis | 022 | japanese code set used for electronic transmission |
| 24 | shiftJIS | 023 | japanese code set used on MS-DOS based machines |
| 25 | eucJP | 024 | japanese code set used on UNIX based machines |
| 26 | usAscii | 025 | united states ASCII code set (ISO 646 US) |
| 27 | ebcdic | 026 | ibm mainframe code set |
| 28 | eucKR | 027 | korean code set |
| 29 | big5 | 028 | taiwanese code set |
| 30 | GB2312 | 029 | simplified Chinese code set |

B.5.18 Maintenance Frequency Code

| Name | Domain | code | Definition |
|------|-----------------------------|-------------|--|
| 1 | MD_MaintenanceFrequencyCode | MaintFreqCd | frequency with which modifications and deletions are made to the data after it is first produced |
| 2 | continual | 001 | data is repeatedly and frequently updated |
| 3 | daily | 002 | data is updated each day |
| 4 | weekly | 003 | data is updated on a weekly basis |
| 5 | fortnightly | 004 | data is updated every two weeks |
| 6 | monthly | 005 | data is updated each month |
| 7 | quarterly | 006 | data is updated every three months |
| 8 | biannually | 007 | data is updated twice each year |
| 9 | annually | 008 | data is updated every year |
| 10 | asNeeded | 009 | data is updated as deemed necessary |
| 11 | irregular | 008 | data is updated in intervals that are uneven in duration |
| 12 | notPlanned | 009 | there are no plans to update the data |
| 13 | unknown | 998 | frequency of maintenance for the data is not known |

B.5.20 Medium Name Code

| Name | Domain | code | Definition |
|------|--------------------|-----------|-----------------------------------|
| 1 | MD_MediumNameCode | MedNameCd | name of the medium |
| 2 | cdRom | 001 | read-only optical disk |
| 3 | dvd | 002 | digital versatile disk |
| 4 | dvdRom | 003 | digital versatile disk, read only |
| 5 | 3halfInchFloppy | 004 | 3,5 inch magnetic disk |
| 6 | 5quarterInchFloppy | 005 | 5,25 inch magnetic disk |
| 7 | 7trackTape | 006 | 7 track magnetic tape |
| 8 | 9trackTape | 007 | 9 track magnetic tape |
| 9 | 3480Cartridge | 008 | 3480 cartridge tape drive |
| 10 | 3490Cartridge | 009 | 3490 cartridge tape drive |
| 11 | 3580Cartridge | 010 | 3580 cartridge tape drive |
| 12 | 4mmCartridgeTape | 011 | 4 millimetre magnetic tape |
| 13 | 8mmCartridgeTape | 012 | 8 millimetre magnetic tape |

| | | | |
|----|---------------------------|-----|--|
| 14 | 1quarterInchCartridgeTape | 013 | 0,25 inch magnetic tape |
| 15 | digitalLinearTape | 014 | half inch cartridge streaming tape drive |
| 16 | onLine | 015 | direct computer linkage |
| 17 | satellite | 016 | linkage through a satellite communication system |
| 18 | telephoneLink | 017 | communication through a telephone network |
| 19 | hardcopy | 018 | pamphlet or leaflet giving descriptive information |

B.5.23 Progress Code

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

B.5.24 Restriction Code

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

B.5.25 Scope Code

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

| | | | |
|----|----------------------|-----|--|
| 11 | featureType | 010 | information applies to a feature type |
| 12 | propertyType | 011 | information applies to a property type |
| 13 | fieldSession | 012 | information applies to a field session |
| 14 | software | 013 | information applies to a computer program or routine |
| 15 | service | 014 | information applies to a capability which a service provider entity makes available to a service user entity through a set of interfaces that define a behaviour, such as a use case |
| 16 | model | 015 | information applies to a copy or imitation of an existing or hypothetical object |
| 17 | nationalContribution | 016 | information applies to the national contribution to the dataset |

B.5.26 Spatial Representation Type Code

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

B.5.27 Topic Category Code

| Name | Domain | code | Definition |
|------|----------------------------------|------------|--|
| 1 | MD_TopicCategoryCode | TopicCatCd | high-level geographic data thematic classification to assist in the grouping and search of available geographic data sets. Can be used to group keywords as well. Listed examples are not exhaustive. NOTE It is understood there are overlaps between general categories and the user is encouraged to select the one most appropriate. |
| 2 | farming | 001 | rearing of animals and/or cultivation of plants Examples: agriculture, irrigation, aquaculture, plantations, herding, pests and diseases affecting crops and livestock |
| 3 | biota | 002 | flora and/or fauna in natural environment Examples: wildlife, vegetation, biological sciences, ecology, wilderness, sealife, wetlands, habitat |
| 4 | boundaries | 003 | legal land descriptions Examples: political and administrative boundaries |
| 5 | climatologyMeteorologyAtmosphere | 004 | processes and phenomena of the atmosphere Examples: cloud cover, weather, climate, atmospheric conditions, climate change, precipitation |
| 6 | economy | 005 | economic activities, conditions and employment Examples: production, labour, revenue, commerce, industry, tourism and ecotourism, forestry, fisheries, commercial or subsistence hunting, exploration and exploitation of resources such as minerals, oil and gas |
| 7 | elevation | 006 | height above or below sea level Examples: altitude, bathymetry, digital elevation models, slope, derived products |

| | | | |
|----|---------------------------|-----|---|
| 8 | environment | 007 | environmental resources, protection and conservation Examples: environmental pollution, waste storage and treatment, environmental, impact assessment, monitoring environmental risk, nature reserves, landscape |
| 9 | geoscientificInformation | 008 | information pertaining to earth sciences Examples: geophysical features and processes, geology, minerals, sciences, dealing with the composition, structure and origin of the earth's rocks, risks of earthquakes, volcanic activity, landslides, gravity information, soils, permafrost, hydrogeology, erosion |
| 10 | health | 009 | health, health services, human ecology, and safety Examples: disease and illness, factors affecting health, hygiene, substance abuse, mental and physical health, health services |
| 11 | imageryBaseMapsEarthCover | 010 | base maps Examples: land cover, topographic maps, imagery, unclassified images, annotations |
| 12 | intelligenceMilitary | 011 | military bases, structures, activities Examples: barracks, training grounds, military transportation, information collection |
| 13 | inlandWaters | 012 | inland water features, drainage systems and their characteristics Examples: rivers and glaciers, salt lakes, water utilization plans, dams, currents, floods, water quality, hydrographic charts |
| 14 | location | 013 | positional information and services Examples: addresses, geodetic networks, control points, postal zones and services, place names |
| 15 | oceans | 014 | features and characteristics of salt water bodies (excluding inland waters) Examples: tides, tidal waves, coastal information, reefs |
| 16 | planningCadastre | 015 | information used for appropriate actions for future use of the land Examples: land use maps, zoning maps, cadastral surveys, land ownership |
| 17 | society | 016 | characteristics of society and cultures Examples: settlements, anthropology, archaeology, education, traditional beliefs, manners and customs, demographic data, recreational areas and activities, social impact assessments, crime and justice, census information |
| 18 | structure | 017 | man-made construction Examples: buildings, museums, churches, factories, housing, monuments, shops, towers |
| 19 | transportation | 018 | means and aids for conveying persons and/or goods Examples: roads, airports/airstrips, shipping routes, tunnels, nautical charts, vehicle or vessel location, aeronautical charts, railways |
| 20 | utilitiesCommunication | 019 | energy, water and waste systems and communications infrastructure and services Examples: hydroelectricity, geothermal, solar and nuclear sources of energy, water purification and distribution, sewage collection and disposal, electricity and gas distribution, data communication, telecommunication, radio, communication networks |

B.5.28 MD_TopologyLevelCode

| Name | Domain | code | Definition |
|------|----------------------|-----------|---|
| 1 | MD_TopologyLevelCode | TopoLevCd | degree of complexity of the spatial relationships |

| | | | |
|----|------------------|-----|--|
| 2 | geometryOnly | 001 | geometry objects without any additional structure which describes topolog |
| 3 | topology1D | 002 | 1-dimensional topological complex |
| 4 | planarGraph | 003 | 1-dimensional topological complex which is planar |
| 5 | fullPlanarGraph | 004 | 2-dimensional topological complex which is planar |
| 6 | surfaceGraph | 005 | 1-dimensional topological complex which is isomorphic to a subset of a surface |
| 7 | fullSurfaceGraph | 006 | 2-dimensional topological complex which is isomorphic to a subset of a surface |
| 8 | topology3D | 007 | 3-dimensional topological complex |
| 9 | fullTopology3D | 008 | complete coverage of a 3D coordinate space |
| 10 | abstract | 009 | topological complex without any specified geometric |