Department for Communities and Local Government

Metadata Guidelines for Geospatial Datasets in the UK

Part 2
Creating Metadata using UK GEMINI

Version 1.0, June 2006

Rob Walker and Les Rackham, Rob Walker Consultancy Ltd have written this document which was commissioned by the Department for Communities and Local Government.

Contents

Preface

This is the second part of a set of guidelines for metadata for geospatial datasets. These Guidelines are intended for general use in the UK geographic information environment, and particularly in support of the national geospatial metadata service, *gigateway*. They are primarily concerned with geospatial data (i.e. that which references data to a location on the surface of the Earth), and which has a limited geographic extent (i.e. is restricted to a defined territory). They have been developed within the context of a national geospatial metadata service (currently *gigateway*), and the UK GEMINI metadata standard. However, they are sufficiently broadly based to be applicable in a wider context of geospatial metadata creation and management.

The Guidelines are aimed at data managers and creators of metadata, providers of metadata services and general data users. They include guidance on quality management such that they could be used in the context of a national metadata service.

This part of the guidelines provides a set of detailed guidelines for UK GEMINI metadata elements. Part 1 covers the basics of metadata and provides an introduction to the other two parts. It includes a glossary of terms and set of references. Part 3 deals with metadata quality and covers quality evaluation and quality management of metadata including guidance on establishing acceptable quality levels.

Any comments on these guidelines or on the UK GEMINI metadata standard should be sent to standards@agi.org.uk.

1. INTRODUCTION

UK GEMINI[1], produced jointly by AGI and the e-Government Unit, defines a core set of metadata elements for dataset discovery and other essential purposes. It provides details of what metadata should be collected for geospatial datasets and is designed for use in a metadata service such as *gigateway*[2].

This part of the *Metadata Guidelines for Geospatial Datasets* is aimed at those creating metadata conforming to UK GEMINI. It provides detailed guidance for the completion of each of the individual metadata elements in UK GEMINI. This expands on existing guidance given in UK GEMINI and also other guidance notes produced to support *gigateway*[3]. It provides detailed guidance for the application of UK GEMINI, but can be modified at a later stage to suit the proposed UK GEMINI2[4]. It also describes possible errors that might occur in such metadata and suggests actions to guard against them. It also explains how to expand the metadata elements in addition to those in UK GEMINI if required, and how to extend code lists of allowable values.

This Part should be read in conjunction with the other parts if these guidelines.

1 UK GEMINI Standard Version 1.0 2004-10-12 Cabinet Office e-Government Unit (see www.gigateway.org.uk)

2 see www.gigateway.org.uk

3 for example see www.gigateway.org.uk/metadata/downloads/Gigateway_metadata_guidelines_ukgemini.pdf

4 This will be based upon the European standard for core metadata for discovery, currently under development.

2. GEMINI GUIDELINES

2.1 Metadata elements

UK GEMINI comprises a set of 32 metadata elements. These elements are as follows:

Element number	Element name
1	Title
2	Alternative title
3	Dataset language
4	Abstract
5	Topic category
6	Subject
7	Date
8	Dataset reference date
9	Originator
10	Lineage
11	West bounding coordinate
12	East bounding coordinate
13	North bounding coordinate
14	South bounding coordinate
15	Extent
16	Vertical extent information
17	Spatial reference system
18	Spatial resolution
19	Spatial representation type
20	Presentation type
21	Data format
22	Supply media
23	Distributor
24	Frequency of update
25	Access constraint
26	Use constraints
27	Additional information source
28	Online resource
29	Browse graphic
30	Date of update of metadata
31	Metadata standard name
32	Metadata standard version

Annex A provides detailed guidance on how to create each of these elements. Each element is the subject of a separate table. The tables contain the following:

- Metadata element name – name of the UK GEMINI element;
- Definition – the formal definition of the element, as given in UK GEMINI;
- Purpose and meaning – an explanation of what the element is and why it is required;
- Obligation – whether the element is mandatory or optional;
- Occurrence – whether the element is single-valued or can have multiple values;

- Data type – the form of the entry, whether it is a character string, real number, integer, code or other class[5];
- Domain – the allowable set of values;
- Rules for how to fill in the entry – advice on how to complete the value;
- Examples – a range of example entries;
- Additional information – any other information of relevance
- Other comments – that relate to the element.

2.2 Additional metadata elements

In many organisations, there is a need to record additional items of metadata to meet specific local requirements. This may be to incorporate particular characteristics of the data resources, or for particular applications. Additional metadata elements may be included in a metadata implementation. These elements should be taken from ISO 19115[6], which includes a comprehensive collection of metadata elements for geographic information.

2.3 Extension of code lists

Several of the metadata elements specified in UK GEMINI use enumerated code lists. These are pre-defined sets of values identified by codes. They are useful to standardise the entries to aid searches of metadata for specified values. The code lists included in UK GEMINI are taken from ISO 19115. In some cases, the explanations of the values have been modified to make them more appropriate to the UK context.

Some of these code lists will require extension. Additional codes may be created as follows:

1. identify the new value, which should be distinct from existing values;
2. chose a name that encapsulates the essential concept;
3. provide a definition that is understandable and concise;
4. chose a new code that has not been used before for this element;
5. document the new codes, and disseminate them to users.

Such code extensions may be either specific to a metadata implementation in an organisation or sector, or for general usage. In the latter case, proposed new codes should be submitted[7] for inclusion in the next version of UK GEMINI. It is expected that future editions of UK GEMINI will incorporate such modified code lists.

[5] Where the data type is another class, it is implemented as an additional set of elements. Examples are Distributor and Vertical extent.
[6] ISO 19115: 2003 Geographic information – Metadata
[7] Proposed new codes should be sent to standards@agi.org.uk

3. ERRORS

3.1 Impact of metadata errors

Errors having the greatest impact are likely to be those that affect searches based on:

- where - geographical extent expressed in latitude and longitude or some named standard area (administrative area, postcode, country);
- what - theme, subject or topic;
- when - date when data resource was current

Errors in the metadata elements used by these searches will result in over- or under-selection of data resources and will degrade the quality of the service that is providing the search facility. Inconsistencies in the capture or updating of metadata, such as the categorisation of data subject(s) or topic(s), will further erode the quality of the service.

3.2 Effect on searches

Having discovered a number of candidate data resources, the service user then assesses the likelihood that any of these meet their requirements. They will need the information in the other metadata elements such as abstract, lineage, data format, and constraints to make their assessment. Inaccuracies, inconsistencies, or incompleteness will detract from the quality of the service.

Information also needs to be topical or up-to-date. Services are bedevilled by metadata containing information current at the inception of the service but never maintained since. The service user needs to have reliable information about where they can find out more about the data resource and how they can obtain that resource. It is not uncommon for this to be out-of-date or have incorrect URLs or contact telephone number.

3.3 Prevention and correction of errors

Prevention and correction of these errors is usually a combination of:

- understanding the nature of the errors;
- clear guidance on avoidance of errors at time of entry – metadata capture tools may help here in validating entries;
- staff trained in metadata capture who understand the nature of the data resources being documented;
- independent quality control with specified quality evaluation procedures, acceptable quality levels and procedures for dealing with metadatasets that fail;
- periodic reviews of existing metadata to check that all information is current;
- procedures for dealing with errors reported by service providers or service users;
- overall quality assurance process which reviews procedures in the light of experience and aims to improve overall metadata quality.

Further guidance on how to prevent and correct errors is given in Part 3 of these Guidelines.

3.4 Common errors

Some common errors that lead to inconsistent results when searching across metadatasets are:

- Documentation is too general;
- Extent is over-generalised;
- Subjects and topic and categories are under-reported;
- Incorrect or inconsistent date entries;
- Different names are used for the same item in different places;
- Missing values;
- Information is not current.

The nature and impact of these types of error are described in more detail in Table 1, together with suggested ways in which these errors can be prevented or corrected.

Other errors that may lead to misinterpretation of results are:

- Correct value, but for the wrong metadata element;
- Values incorrect, incomplete or inaccurate;
- Incomprehensible, misleading or uninformative entries.

The nature and impact of these types of error are described in more detail in Table 2, together with suggested ways in which these errors can be prevented or corrected.

Table 1. Some common errors leading to inconsistent results when searching across metadatasets

Type of error	Description and impact	Examples of errors	Prevention or correction
Documentation too general	There are no absolute rules about how data resources should be "chunked" and individually documented. A metadataset can therefore refer to a dataset covering a single topic relating to a small area or major dataset series covering all or parts of UK containing many topics. This can lead to inconsistent search results with either over- or under-selection of datasets	1. Topographic mapping covering whole of GB at different scales to different specifications documented using one metadataset. 2. Reports produced by an organisation relating to a variety of locations and dates documented using one metadataset.	Have clear guidance on the "chunking" of data resources for individual documentation[8] based on: (i) how the data is used (stand-alone or as part of wider set); (ii) continuity and extent of coverage; (iii) date of capture or maintenance; (iii) topics or subjects covered, and (iv) uniformity of specification within data resource. Introduce checks to ensure consistency of approach across all metadata.
Extent over-generalised	This particularly applies when extent is described in terms of standard geographical areas such as postcode districts, counties, or countries. Inconsistencies in relating data resource coverage to these areas and the use of different extent names to refer to the same coverage results in either over- or under-selection of datasets.	1. Coverage given as UK or GB when restricted to England. 2. Coverage of UK referred to as GB. 3. Coverage given as England when restricted to Hampshire only.	Have clear rules and user guidance on the relating of named extents to the coverage of data resources and guidelines on the types of extents to be used. Where named extents form part of a nesting hierarchy (e.g. administrative areas) then any guidance should cover if and when all areas in the hierarchy should be included.[9] Introduce checks to ensure consistency of approach across all metadata.

[8] see **4.4** and Table 1 of Part 1 of these Guidelines
[9] see **A.15** Extent for further guidance on UK GEMINI

Type of error	Description and impact	Examples of errors	Prevention or correction
Subjects and topic and categories under-reported	This particularly applies where there are enumerated lists of topics. Inconsistency in the inclusion of individual topics in metadata can lead to over- or under-selection of datasets.	Metadata for topographic map series does not include boundaries, elevation, inland waters, structure, and transportation as topics (examples taken from UK GEMINI).	Use guidance on the recording of subjects or themes to promote consistency.[10] Use closed lists wherever possible and discourage the use of free text. Introduce checks to ensure consistency of approach across all metadata.
Incorrect or inconsistent date entries	There is often confusion between (i) the date when the data resource was captured or last updated and (ii) the date when the data resource was released, published or made available. There can be further inconsistencies between the frequency of update and the recorded currency of the data resource. The impact of this is to give false returns for searches based on dates.	1. Date of capture of data resource later than date of publication. 2. Update reported as continuous but date of last update reported as 10 years ago.	Use guidance on the recording of different dates to promote consistency. Introduce checks, preferably by software, to ensure that the ordering of dates is consistent.[11]
Same item different name	This is particularly relevant where there is no closed list but a name or descriptor recurs which is common to many metadatasets. This may lead to inconsistent results or, more frequently misinterpretation of results.	National Grid, British National Grid, National Grid of Great Britain.	Include frequently used standard names in any internal guidance. Introduce checks to ensure consistency of approach across all metadata.
Missing values	Where values relating to date, time or topic are omitted then these will have greatest impact on searches since these are the usual criteria used.	1. Omission of geographical extent. 2. Omission of dataset reference date. 3. Missing distributor or publisher. 4. Missing contact details.	Introduce checks, preferably software checks, to ensure that mandatory fields contain values.

[10] see **A.5** and **A.6** for further guidance on UK GEMINI
[11] see **A.7**, **A.8**, **A.24** and **A.30** for further guidance on UK GEMINI

Type of error	Description and impact	Examples of errors	Prevention or correction
Information not current	This can impact both on searches and the interpretation of search results since the metadata does not reflect the current information or only does so partially.	1. Content of data resource extended but no change to topics. 2. Abstract not updated to reflect change of specification. 3. Dataset updated but later date not entered in the metadata. 4. Use constraints added but not entered in metadata.	Introduce a regime of regular checks on all metadata to ensure that currency is assessed and updates made where needed.

Table 2. Other errors leading to misinterpretation of results

Type of error	Description and impact	Examples of errors	Prevention or correction
Correct value wrong metadata element	Confusion between the definitions of metadata elements can lead to correct values entered against the wrong metadata element.	1. Data format given for supply media 2. Access constraints given for use constraints.	Use guidance on the definition and use of the metadata elements especially those most commonly confused (see examples). Introduce training and checks to ensure correct use of elements.
Values incorrect, incomplete or inaccurate	This can apply to both quantitative and non-quantitative entries and can impact on the way that results are interpreted and used.	1. URL given as additional information source incorrect and not accessible. 2. Contact details for obtaining data resource are incorrect.	Check values are correct as far as can be established e.g. independently check URLs, telephone contacts.
Incomprehensible, misleading or uninformative entries	Entries need to be understandable by the service user who needs to interpret the search results. The impact can be that results are misinterpreted and candidate datasets ignored.	1. Where dataset does not have a recognised title, uninformative title given. 2. Abstract is uninformative with no information on content or usage 3. Lineage contains no information about sources or reasons for creation. 4. Use of terms and abbreviations unlikely to be understood by service user.	Use guidance and checklists for compiling entries e.g. abstracts.

Annex A. Guidance for individual metadata elements

A.1 Title

Metadata element name	Title
Definition	name given to the data resource
Purpose and meaning	The purpose of this element is to provide a readily recognisable and unique name for the data resource.
Obligation	Mandatory
Occurrence	single
Data type	Character String
Domain	free text
Rules for how to fill in the entry	1. The title should be the formal or product name for the resource if existing. 2. If no name exists, then a title should be created that is short, encapsulates the subject, temporal and spatial coverage of the resource, and does not contain terms or jargon that makes it incomprehensible.
Examples	OS MasterMap® topography Voter participation in Liverpool local elections, 1994, by ward
Additional information	-
Other comments	-

A.2 Alternative title

Metadata element name	Alternative title
Definition	short name, other name, acronym or alternative language title
Purpose and meaning	The purpose of this element is to record any alternative titles by which the data resource is known.
Obligation	Optional
Occurrence	multiple
Data type	Character String
Domain	free text
Rules for how to fill in the entry	1. There is no need to fill in this entry unless there are other names used for the dataset, for example historic names. 2. Commonly used abbreviations or acronyms should be recorded. 3. Other language equivalents should be recorded where they exist, for example the Welsh language title (although this title may refer to a different data resource). 4. Entries should be short and concise.
Examples	OS large-scale data
Additional information	-
Other comments	-

A.3 Dataset language

Metadata element name	Dataset language
Definition	language used in the dataset
Purpose and meaning	This is the written language used for any text in the dataset.
Obligation	Mandatory
Occurrence	multiple
Data type	Character String
Domain	free text
Rules for how to fill in the entry	It is recommended to select a value from a controlled vocabulary, for example that provided by ISO 639-2[12] which uses three-letter primary tags with optional subtags. The commonly used values for the UK are: English ENG Welsh CYM Gaelic (Irish) GLE Gaelic (Scottish) GLA Cornish COR In many cases, a default value of ENG can be applied.
Examples	CYM
Additional information	-
Other comments	1. Note that according to ISO 639-2, codes should be in lower case. UK GEMINI needs to be modified accordingly. 2. UK GEMINI (and ISO 639-2) allows either CYM or WEL for Welsh. One of these should be used consistently. UK GEMINI needs to be modified accordingly.

[12] ISO 639-2 Codes for the representation of the names of languages – Alpha-3 code

A.4 Abstract

Metadata element name	Abstract
Definition	brief narrative summary of the dataset
Purpose and meaning	The abstract should provide a clear and concise statement that enables the reader to understand the content of the dataset.
Obligation	Mandatory
Occurrence	single
Data type	Character String
Domain	free text
Rules for how to fill in the entry	1. State what the 'things' are that are recorded. 2. State the key aspects recorded about these things. 3. State what form the data takes. 4. State any other limiting information, such as time period of validity of the data. 5. Add purpose of data resource where relevant (e.g. for survey data). 6. Aim to be understood by non-experts. 7. Do not include general background information. 8. Avoid jargon and unexplained abbreviations.
Examples	Sites of Special Scientific Interest in Wales, classified by habitat type, with the limit of each SSSI recorded as a polygon, as at 2001-06-30.
Additional information	-
Other comments	-

A.5 Topic category

Metadata element name	Topic category
Definition	main theme(s) of the data resource
Purpose and meaning	The purpose of this element is to provide a basic classification for the data resource for use in initial searches
Obligation	Mandatory
Occurrence	multiple
Data type	enumerated class
Domain	code list MD_TopicCategory Code taken ISO 19115 (see below)
Rules for how to fill in the entry	Select one or more categories that most closely represent the topic of the data resource. If in doubt, go by the topic categories rather than the examples. It is not necessary to include all categories which may be applicable, but only a limited number of most relevant should be chosen (e.g. topographic maps should not be classified as farming).
Examples	013
Additional information	-
Other comments	For greater detail within a topic, use the element 'Subject'

MD_Topic Category

Name	**Domain code**	**Definition**
farming	001	rearing of animals and/or cultivation of plants Examples: agriculture, plantations, herding, pests and diseases affecting crops and livestock
biota	002	flora and/or fauna in natural environment Examples: wildlife, vegetation, biological sciences, ecology, sea-life, habitat
boundaries	003	legal land descriptions Examples: political and administrative boundaries
climatology/meteorology /atmosphere	004	processes and phenomena of the atmosphere Examples: weather, climate, atmospheric conditions
economy	005	economic activities, conditions and employment Examples: production, labour, revenue, commerce, industry
elevation	006	height above or below sea level Examples: altitude, bathymetry, digital elevation models, slope
environment	007	environmental resources, protection and conservation Examples: environmental pollution, waste storage and treatment, environmental impact assessment, monitoring environmental risk, nature reserves, landscape

Name	Domain code	Definition
geoscientific information	008	information pertaining to earth sciences Examples: geophysical features and processes, geology, minerals, soils
health	009	health, health services, human ecology, and safety Examples: disease and illness, factors affecting health, health services
imagery/basemaps/earth cover	010	base maps Examples: land cover, topographic maps, imagery, unclassified images
military intelligence	011	military bases, structures, activities Examples: barracks, training grounds, military transportation
inland waters	012	inland water features, drainage systems and their characteristics Examples: rivers, salt lakes, dams, 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
planning/cadastre	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, 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
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
utilities/communication	019	energy, water and waste systems and communications infrastructure and services Examples: sources of energy, water purification and distribution, sewage collection and disposal, electricity and gas distribution, data communication, telecommunication, radio

A.6 Subject

Metadata element name	Subject
Definition	topic of the content of the dataset
Purpose and meaning	The purpose of this element is to indicate the general subject area of the data resource using keywords. This enables searches to eliminate resources that are of no interest. Ideally, a standardised set of keywords should be used, so that resources can be identified in any search. This element is similar to Topic, which has a coded list of high-level categories, whereas Subject allows more appropriate terms to describe the data resource.
Obligation	Mandatory
Occurrence	multiple
Data type	Character String
Domain	free text
Rules for how to fill in the entry	1. Terms covering the subject of the data resource should be selected. 2. For a list of possible subjects, see the Integrated Public Sector Vocabulary (IPSV) from the e-Government Unit, at www.esd.org.uk/standards/ipsv/. This should be used by government departments. 3. Other standard subject category areas may be used. 4. Other sectors may need to create their own lists of subject areas.
Examples	Rural economy Careers Centres Environmental monitoring Local government structure Disabled toilets Mobile phone base stations Unemployed people Flooding
Additional information	-
Other comments	-

A.7 Date

Metadata element name	Date
Definition	date and time for the content of the dataset
Purpose and meaning	This is the date or date range that identifies the currency of the data. It may refer to the period of collection, or the date at which it is deemed to be current.
Obligation	Mandatory
Occurrence	single
Data type	Date
Domain	Date, or two dates defining the duration of the period, as defined by BS ISO 8601[13]. Periods are recorded as (fromdate/todate). Either fromdate or todate (but not both) may be left blank to indicate uncertainty. The extended date format (YYYY-MM-DD) should be used, where YYYY is the year, MM is the month and DD is the day. Time (-HH:MM:SS, where HH is the hour, MM the minutes and SS the seconds) may be added if required.
Rules for how to fill in the entry	Dates may be to any degree of precision, from century (YY) to full date and time,
Examples	2001-01-01 1939/1945 /2003-03-31 2000/ 19
Additional information	If the data resource relates to a historic period, then this is part of the subject, e.g. “cretaceous period”. In this case the date is the date of discovery or observation.
Other comments	This element should not be confused with Dataset Reference Date

[13] ISO 8601 Data elements and interchange formats – Information interchange – Representation of dates and times

A.8 Dataset reference date

Metadata element name	Dataset reference date
Definition	reference date for the dataset
Purpose and meaning	Dataset reference date is an identifying date for the data resource. It is a notional date of "publication" of the resource. It is different from Date which is the actual date of the currency of the data. For example, an atlas might have the reference date '2004', but the data will have been collected over a period prior to this.
Obligation	Mandatory
Occurrence	single
Data type	Date
Domain	The extended date format (YYYY-MM-DD) defined in BS ISO 8601 should be used, where YYYY is the year, MM is the month and DD is the day. It may be extended to include time (-HH:MM:SS), where HH is the hour, MM the minutes and SS the seconds.
Rules for how to fill in the entry	1. The date should be completed to a resolution sufficient to identify the version. Thus if the data resource is updated annually, only a year is required, whilst if it is updated weekly, a day is required. 2. If the resource is continuously updated or is a dataset series (e.g. a map series), then a notional current data should be provided at a suitable level of resolution.
Examples	2001 2005-05 1997-10-01
Additional information	-
Other comments	-

A.9 Originator

Metadata element name	Originator
Definition	person or organisation having primary responsibility for the intellectual content of the data
Purpose and meaning	The purpose of this element is to identify the person(s) or organisation(s) that are the major holders of the intellectual property for the dataset. The originator may not be the organisation that carried out the production of the resource (who might be a contractor), or the organisation that supplies the resource (the Distributor).
Obligation	Optional
Occurrence	multiple
Data type	Character String
Domain	free text
Rules for how to fill in the entry	1. The name of the organisation should be held as succinctly as possible, to enable further enquiries to be made. 2. Additional information such as address details is not normally required if the organisation is well-known and can be located by a web search on its name. 3. There may be several entries where data comes from a range of sources. It may not always be possible to identify all of these. 4. Names of organisations should be given in full. 5. Individual names or positions should not be used for this. 6. If there is a commonly used abbreviation for the name, then this should be given in brackets, e.g. (OS).
Examples	Ordnance Survey (OS)
Additional information	This entry is indicative and does not carry any legal implications.
Other comments	-

A.10 Lineage

Metadata element name	Lineage
Definition	information about the events or source data used in the construction of the dataset
Purpose and meaning	The purpose of this element is to give an indication of how the dataset was created. It is useful in determining its fitness for purpose.
Obligation	Optional
Occurrence	single
Data type	Character String
Domain	free text
Rules for how to fill in the entry	Include statements on the following: • source material • process used to create the data. including resolution of measurement • method of updating • any quality control processes
Examples	Addresses are taken from the Postcode Address File (PAF) and the property found on the large-scale Ordnance Survey map. The coordinates of an approximate centroid for the property are recorded to a resolution of 1metre. The dataset is updated from the PAF monthly updates. All results are checked by plotting a group of related addresses on the map and visually checking for errors.
Additional information	Further details included in an external file may be referenced under 'Additional information source'.
Other comments	This element is similar to Abstract, and some information may be included in either element.

A.11 West bounding coordinate

Metadata element name	West bounding coordinate
Definition	western-most limit of the dataset extent, expressed in longitude in decimal degrees (positive east)
Purpose and meaning	The purpose of this element is, with the other bounding coordinates, to define a box. This needs to be in a common coordinate system, which is why latitude and longitude are used rather than a local grid. Spatial searches can then be carried out over all geospatial datasets.
Obligation	Mandatory
Occurrence	single
Data type	Real
Domain	- 180.0 <= value <= 180.0
Rules for how to fill in the entry	Only approximate values are required, sufficient to identify the extent on a global basis, e.g. to a tenth of a degree.
Examples	-10.7
Additional information	The West bounding coordinate usually has a value less than the value of the East bounding coordinate, except when the extent straddles the 180 degree meridian. There are several services that can convert National Grid coordinates into latitude and longitude (e.g. http://gps.ordnancesurvey.co.uk/convert.asp).
Other comments	Strictly speaking, this element should be called “West bounding longitude”.

A.12 East bounding coordinate

Metadata element name	East bounding coordinate
Definition	eastern-most limit of the dataset extent, expressed in longitude in decimal degrees (positive east)
Purpose and meaning	The purpose of this element is, with the other bounding coordinates, to define a box. This needs to be in a common coordinate system, which is why latitude and longitude are used rather than a local grid. Spatial searches can then be carried out over all geospatial datasets.
Obligation	Mandatory
Occurrence	single
Data type	Real
Domain	- 180.0 <= value <= 180.0
Rules for how to fill in the entry	Only approximate values are required, sufficient to identify the extent on a global basis, e.g. to a tenth of a degree.
Examples	2.8
Additional information	The East bounding coordinate usually has a value greater than the value of the West bounding coordinate, except when the extent straddles the 180 degree meridian. There are several services that can convert National Grid coordinates into latitude and longitude (e.g http://gps.ordnancesurvey.co.uk/convert.asp).
Other comments	Strictly speaking, this element should be called “East bounding longitude”

A.13 North bounding coordinate

Metadata element name	North bounding coordinate
Definition	northern-most limit of the dataset extent, expressed in latitude in decimal degrees (positive north)
Purpose and meaning	The purpose of this element is, with the other bounding coordinates, to define a box. This needs to be in a common coordinate system, which is why latitude and longitude are used rather than a local grid. Spatial searches can then be carried out over all geospatial datasets.
Obligation	Mandatory
Occurrence	single
Data type	Real
Domain	- 90.0 <= value <= 90.0
Rules for how to fill in the entry	Only approximate values are required, sufficient to identify the extent on a global basis, e.g. to a tenth of a degree.
Examples	61.6
Additional information	The North bounding coordinate must have a value greater than the value of the South bounding coordinate. There are several services that can convert National Grid coordinates into latitude and longitude (e.g. http://gps.ordnancesurvey.co.uk/convert.asp).
Other comments	Strictly speaking, this element should be called “North bounding longitude”

A.14 South bounding coordinate

Metadata element name	South bounding coordinate
Definition	southern-most limit of the dataset extent, expressed in longitude in decimal degrees (positive north)
Purpose and meaning	The purpose of this element is, with the other bounding coordinates, to define a box. This needs to be in a common coordinate system, which is why latitude and longitude are used rather than a local grid. Spatial searches can then be carried out over all geospatial datasets.
Obligation	Optional
Occurrence	single
Data type	Real
Domain	- 90.0 <= value <= 90.0
Rules for how to fill in the entry	Only approximate values are required, sufficient to identify the extent on a global basis, e.g. to a tenth of a degree.
Examples	49.6
Additional information	The South bounding coordinate must have a value less than the value of the North bounding coordinate. There are several services that can convert National Grid coordinates into latitude and longitude (e.g. http://gps.ordnancesurvey.co.uk/convert.asp).
Other comments	Strictly speaking, this element should be called “South bounding latitude”

A.15 Extent

<table>
<tr><td>Metadata element name</td><td>Extent</td></tr>
<tr><td>Definition</td><td>extent of dataset by country or subdivision of country</td></tr>
<tr><td>Purpose and meaning</td><td>This element defines the geographical extent of coverage of the data resource relative to an administrative hierarchy. It enables searches to be carried out to find data relevant to the area of interest. Extent polygons can be implied through reference to an external gazetteer. Note that Extent is the coverage of the data resource, not the individual objects in the data resource. Thus if the data resource was national parks in England, the Extent would be ‘England’, even though many parts of England do not have National Parks.</td></tr>
<tr><td>Obligation</td><td>Mandatory</td></tr>
<tr><td>Occurrence</td><td>multiple</td></tr>
<tr><td>Data type</td><td>Enumerated class</td></tr>
<tr><td>Domain</td><td>Code list as defined in ISO 3166[14].</td></tr>
<tr><td>Rules for how to fill in the entry</td><td>1. An area approximating to the extent of coverage of the data resource should be chosen. This should not be over-generalised (i.e. do not take it as Great Britain if it only covers England and Wales).

2. Where the extent is the whole of a country, the two-character country code should be given. (Note that UK (code GB) is a country in this context is not England, Wales, Scotland or Northern Ireland).

3. Where the extent is the whole of one or more of the primary sub-divisions of the UK, then the sub-division code or codes should be given, without a country code. Codes for higher level sub-divisions of the UK are as follows:

<table><tr><th>Code</th><th>Area</th></tr><tr><td>CHA</td><td>Channel Islands</td></tr><tr><td>ENG</td><td>England</td></tr><tr><td>IOM</td><td>Isle of Man</td></tr><tr><td>NIR</td><td>Northern Ireland</td></tr><tr><td>SCT</td><td>Scotland</td></tr><tr><td>WLS</td><td>Wales</td></tr></table>
4. Where the extent is a combination of several of these areas, they should be given separately, e.g. “ENG, WLS” for England and Wales”, “ENG, WLS, SCT” for Great Britain. The composite codes EAW, GBN and UKM given in ISO 3166 should not be used.</td></tr>
</table>

[14] ISO 3166 Codes for the representation of names of countries and their sub-divisions

	5. Where the extent is one or more local authority areas, the subdivision codes should be given in full, preceded by the country code e.g. GB-BNH for Brighton and Hove. 6. Where the extent of the dataset does not coincide with any defined area or areas, then either the nearest equivalent including the area of coverage, or a set of multiple areas that make up the coverage should be provided. Thus for the South Downs National Park, the Extent would be described by GB-HAM, GB-WSX, GB-ESX 7. Where the extent is primarily an area of water, (e.g. for hydrographic data), then an associated nearby land area should be used. (e.g. ENG for the southern part of the North Sea).
Examples	ENG ENG, SCT GB-ESX, GB-WSX IE, GB-NIR
Additional information	ISO 3166 defines codes for countries (part 1) and their subdivisions (part 2). see www.iso.org/iso/en/prods-services/iso3166ma/index.html for country codes list.
Other comments	Codes for areas of water may be produced at a later date.

A.16 Vertical extent information

Metadata element name	Vertical extent information
Definition	vertical domain of the dataset
Purpose and meaning	The purpose of this element is to describe the vertical range of the data resource (where relevant). Use only where vertical extent is significant, e.g. in geology, mining, meteorology etc.
Obligation	Optional
Occurrence	multiple
Data type	Class
Domain	This class comprises four elements: 1. minimum value 2. maximum value 3. unit of measure 4. vertical datum
Rules for how to fill in the entry	See separate entries for each element
Examples	-
Additional information	This is rarely used.
Other comments	Although UK GEMINI allows multiple values for this element, it is recommended that only a single value should be included.

Metadata element name	minimum value
Definition	lowest vertical extent contained in the dataset
Purpose and meaning	The purpose of this element is to describe the lowest vertical extent of the data resource.
Obligation	Mandatory
Occurrence	single
Data type	Real
Domain	Real number
Rules for how to fill in the entry	Identify approximate lowest altitude relative to the vertical datum (positive where above vertical datum).
Examples	-100
Additional information	-
Other comments	-

Metadata element name	maximum value
Definition	highest vertical extent contained in the dataset
Purpose and meaning	The purpose of this element is to describe the highest vertical extent of the data resource.
Obligation	Mandatory
Occurrence	single
Data type	Real
Domain	Real number
Rules for how to fill in the entry	Identify approximate highest altitude relative to the vertical datum (positive where above vertical datum).
Examples	0
Additional information	-
Other comments	-

Metadata element name	Unit of Measure
Definition	vertical units used for vertical extent
Purpose and meaning	The purpose of this element is to describe the units used in the vertical extent measurements.
Obligation	Mandatory
Occurrence	single
Data type	Character String
Domain	free text
Rules for how to fill in the entry	Describe units used for the vertical extent measurements.
Examples	metres
Additional information	-
Other comments	-

Metadata element name	Vertical datum
Definition	the origin from which the elevation values are measured
Purpose and meaning	The purpose of this element is to establish the origin of the vertical extent measurements
Obligation	mandatory
Occurrence	single
Data type	Character String
Domain	free text
Rules for how to fill in the entry	Identify vertical datum (zero level) for the vertical extent measurements
Examples	Ordnance Survey datum (Newlyn)
Additional information	-
Other comments	-

A.17 Spatial reference system

<table>
<tr><td>Metadata element name</td><td>Spatial reference system</td></tr>
<tr><td>Definition</td><td>Name or description of the system of spatial referencing, whether by coordinates or geographic identifiers, used in the dataset</td></tr>
<tr><td>Purpose and meaning</td><td>The purpose of this element is to identify the way in which the data is spatially referenced in the resource. This may be a coordinates (e.g. in the National Grid of Great Britain) or geographic identifiers (e.g. in unit postcodes).</td></tr>
<tr><td>Obligation</td><td>Mandatory</td></tr>
<tr><td>Occurrence</td><td>single</td></tr>
<tr><td>Data type</td><td>enumerated list</td></tr>
<tr><td>Domain</td><td>
<table>
<tr><th>Domain code</th><th>Definition</th></tr>
<tr><td>001</td><td>National Grid of Great Britain</td></tr>
<tr><td>002</td><td>Irish Grid</td></tr>
<tr><td>003</td><td>Irish Transverse Mercator</td></tr>
<tr><td>004</td><td>WGS84</td></tr>
<tr><td>011</td><td>postcode</td></tr>
<tr><td>012</td><td>parish</td></tr>
<tr><td>013</td><td>ward</td></tr>
<tr><td>014</td><td>electoral constituency</td></tr>
<tr><td>015</td><td>census area</td></tr>
<tr><td>016</td><td>local authority (county/unitary/district/borough)</td></tr>
<tr><td>017</td><td>region</td></tr>
<tr><td>018</td><td>country</td></tr>
<tr><td>019</td><td>Health Authority area</td></tr>
<tr><td>020</td><td>travel-to-work area</td></tr>
<tr><td>021</td><td>other area type</td></tr>
</table>
</td></tr>
<tr><td>Rules for how to fill in the entry</td><td>Identify the spatial reference system or systems used in the resource. Where there appears to be more than one spatial reference system used, take the one that is used in resolving any conflict between the spatial referencing systems (e.g. if the data is recorded referenced by unit postcodes, and a coordinate is then associated, then ‘unit postcode’ is the spatial reference system, whereas if the data is recorded by coordinate, and unit postcodes are added as an attribute, then it is ‘National Grid of Great Britain’).</td></tr>
<tr><td>Examples</td><td>001</td></tr>
<tr><td>Additional information</td><td>-</td></tr>
<tr><td>Other comments</td><td>The code list may need to be extended to cover additional spatial referencing systems (e.g. from the OGP Surveying and Positioning Committee formerly known as EPSG - see www.epsg.org, or for street name or property address).</td></tr>
</table>

A.18 Spatial resolution

Metadata element name	Spatial resolution
Definition	measure of the granularity of the data (in metres)
Purpose and meaning	The purpose of this element is to provide an indication of how detailed the spatial data is. It is equivalent to the ground sample distance. It should not be confused with the scale of a map which is purely a display attribute (the spatial resolution should be defined in the specification of the data resource).
Obligation	Optional
Occurrence	single
Data type	Real
Domain	value > 0
Rules for how to fill in the entry	1. For data capture in the field, it is the precision at which the data is captured. This may be the accuracy for topographic surveys, or the granularity of sampling in an environmental survey. 2. For data taken from maps, it is the positional accuracy of the map (defined in the specification of the map series). 3. For image data, it is the resolution of the image.
Examples	10.0 0.001
Additional information	-
Other comments	This should not be confused with precision which refers to the resolution of the measurements themselves. Thus for a buildings dataset, a building seed could be recorded to a precision of 0.1 metres, but since the requirement is for the seed only to be within the building footprint for the purpose of discriminating between buildings, the spatial resolution of the buildings dataset would be the typical size of the building, i.e. about 10 metres.

A.19 Spatial representation type

<table>
<tr><td>Metadata element name</td><td>Spatial representation type</td></tr>
<tr><td>Definition</td><td>method used to represent the spatial aspect of the data</td></tr>
<tr><td>Purpose and meaning</td><td>The purpose of this element is to identify the way in which the real world is represented in the data resource (e.g. as lines or as entries in a table).</td></tr>
<tr><td>Obligation</td><td>Optional</td></tr>
<tr><td>Occurrence</td><td>multiple</td></tr>
<tr><td>Data type</td><td>enumerated list</td></tr>
<tr><td>Domain</td><td>
<table>
<tr><th>Name</th><th>Domain code</th><th>Definition</th></tr>
<tr><td>vector</td><td>001</td><td>vector data used to represent geographic data</td></tr>
<tr><td>grid</td><td>002</td><td>grid data used to represent geographic data</td></tr>
<tr><td>text/table</td><td>003</td><td>textual or tabular data used to represent geographic data</td></tr>
<tr><td>tin</td><td>004</td><td>triangulated irregular network</td></tr>
<tr><td>stereo model</td><td>005</td><td>three-dimensional view formed by the intersecting homologous rays of an overlapping pair of images</td></tr>
<tr><td>video</td><td>006</td><td>scene from a video recording</td></tr>
</table>
</td></tr>
<tr><td>Rules for how to fill in the entry</td><td>Select the entry from the above table that corresponds to the data resource. If none apply (e.g. for a paper map) then do not use this element, but mention this in the Abstract.</td></tr>
<tr><td>Examples</td><td>001</td></tr>
<tr><td>Additional information</td><td>The code list is taken from MD_SpatialRepresentationTypeCode in ISO 19115.</td></tr>
<tr><td>Other comments</td><td>This is similar to Presentation Type. The code list may need to be extended in the future to cover additional spatial representation types.</td></tr>
</table>

A.20 Presentation type

Metadata element name	Presentation type
Definition	form in which the data is represented to the user
Purpose and meaning	The purpose of this element is to identify the physical form of the resource.
Obligation	Optional
Occurrence	multiple
Data type	enumerated list
Domain	Code list from ISO 19115 CI_PresentationFormCode (see below)
Rules for how to fill in the entry	1. Identify the entry in the code list that most closely corresponds to the presentation type of the resource 2. Where none corresponds exactly, take the nearest that is reasonable 3. If the presentation type is completely different to all in the list, then do not use, and mention it in the abstract.
Examples	001
Additional information	-
Other comments	This is similar to Spatial Representation Type. The code list will need to be extended as new types of presentation are introduced.

CI_PresentationFormCode

Name	**Domain code**	**Definition**
document digital	001	digital representation of a primarily textual item (can contain illustrations also)
document hardcopy	002	representation of a primarily textual item (can contain illustrations also) on paper, photographic material, or other media
image digital	003	likeness of something acquired through sensing and stored in digital format
image hardcopy	004	likeness of something acquired through sensing and reproduced on paper, photographic material, or other media for use directly by the human user
map digital	005	map represented in raster or vector form
map hardcopy	006	map printed on paper, photographic material, or other media
model digital	007	multi-dimensional digital representation of a feature, process, etc.
model hardcopy	008	3-dimensional, physical model
profile digital	009	vertical cross-section in digital form
profile hardcopy	010	vertical cross-section printed on paper, etc.
table digital	011	digital representation of facts or figures systematically displayed, especially in columns
table hardcopy	012	representation of facts or figures systematically displayed, especially in columns, printed on paper, photographic material, or other media
video digital	013	digital video recording
video hardcopy	014	video recording on film

A.21 Data format

Metadata element name	Data format
Definition	format in which the digital data can be provided
Purpose and meaning	The purpose of this element is to identify the various options for data formats that may be provided.
Obligation	Mandatory
Occurrence	multiple
Data type	Character String
Domain	free text
Rules for how to fill in the entry	1. Entries should be recognised formats for data transfer, either standard or proprietary. 2. If the data is not transferable (e.g. is view only), then do not use this element.
Examples	GML NTF DTF6.3
Additional information	-
Other comments	-

A.22 Supply media

<table>
<tr><td>Metadata element name</td><td>Supply media</td></tr>
<tr><td>Definition</td><td>type of media in which the data can be supplied</td></tr>
<tr><td>Purpose and meaning</td><td>The purpose of this element is to identify the various types of media on which the resource can be supplied</td></tr>
<tr><td>Obligation</td><td>Optional</td></tr>
<tr><td>Occurrence</td><td>multiple</td></tr>
<tr><td>Data type</td><td>enumerated list</td></tr>
<tr><td>Domain</td><td>
<table>
<tr><th>Name</th><th>Domain code</th></tr>
<tr><td>cd Rom</td><td>001</td></tr>
<tr><td>dvd</td><td>002</td></tr>
<tr><td>dvd Rom</td><td>003</td></tr>
<tr><td>3.5 inch magnetic disk</td><td>004</td></tr>
<tr><td>5.25 inch magnetic disk</td><td>005</td></tr>
<tr><td>7 track magnetic tape</td><td>006</td></tr>
<tr><td>9 track magnetic tape</td><td>007</td></tr>
<tr><td>3480 cartridge tape drive</td><td>008</td></tr>
<tr><td>3490 cartridge tape drive</td><td>009</td></tr>
<tr><td>3580 cartridge tape drive</td><td>010</td></tr>
<tr><td>4 millimetre magnetic tape</td><td>011</td></tr>
<tr><td>8 millimetre magnetic tape</td><td>012</td></tr>
<tr><td>0.25 inch magnetic tape</td><td>013</td></tr>
<tr><td>half inch cartridge streaming tape drive</td><td>014</td></tr>
<tr><td>online</td><td>015</td></tr>
<tr><td>satellite</td><td>016</td></tr>
<tr><td>telephone Link</td><td>017</td></tr>
<tr><td>hardcopy</td><td>018</td></tr>
</table>
</td></tr>
<tr><td>Rules for how to fill in the entry</td><td>1. Select the entries from the list that match the available supply media formats.
2. If the available supply media formats are not known, or if there is great flexibility in the formats available, then this entry should not be used.</td></tr>
<tr><td>Examples</td><td>015</td></tr>
<tr><td>Additional information</td><td>The values in the code list are taken from MD_MediumNameCode in ISO 19115</td></tr>
<tr><td>Other comments</td><td>These codes may need to be revised.</td></tr>
</table>

A.23 Distributor

Metadata element name	Distributor
Definition	details of the organisation(s) from whom the resource can be obtained
Purpose and meaning	This informs the user where to obtain the data resource
Obligation	Mandatory
Occurrence	multiple
Data type	Class
Domain	This class comprises seven elements relating to the distributor: 1. contact name or title 2. name of the distributor 3. full postal address 4. telephone number 5. facsimile number 6. email address 7. web address
Rules for how to fill in the entry	1. See separate entries for each element. The first two elements are mandatory. 2. Other entries should only be given that are relevant and known. 3. Where there are several distributors, then a separate entry should be given for each.
Examples	-
Additional information	-
Other comments	The list of elements is incorrect in UK GEMINI.

Metadata element name	Distributor contact title
Definition	role or position of the responsible person
Purpose and meaning	This is the person to contact in the distributor organisation
Obligation	Mandatory
Occurrence	single
Data type	Character String
Domain	free text
Rules for how to fill in the entry	1. A general job title should be identified for someone in a position of responsibility for the data resource. 2. Do not identify an individual by name, as this is subject to change without warning and the information is impossible to keep up-to-date. 3. Where no single individual is responsible, a generic role may be given.
Examples	The mapping product manager
Additional information	-
Other comments	-

Metadata element name	Name of distributor
Definition	name of organisation supplying the data resource
Purpose and meaning	This is the name of the organisation
Obligation	Mandatory
Occurrence	single
Data type	Character String
Domain	free text
Rules for how to fill in the entry	The name of the organisation should be given in full, without abbreviations
Examples	The Ordnance Survey of Great Britain
Additional information	-
Other comments	-

Metadata element name	Postal address of the distributor
Definition	postal address of the organisation
Purpose and meaning	This enables the user to contact the distributor organisation by post
Obligation	Optional
Occurrence	single
Data type	Character String
Domain	free text
Rules for how to fill in the entry	The full formal postal address (as defined for example by Royal Mail) should be given, including the postcode.
Examples	Romsey Road, Maybush, Southampton. SO16 4GU. UK
Additional information	-
Other comments	-

Metadata element name	telephone number of the distributor
Definition	telephone number by which individuals can talk to the organisation or individual
Purpose and meaning	This enables the user to contact the distributor organisation by telephone
Obligation	Optional
Occurrence	single
Data type	Character String
Domain	free text
Rules for how to fill in the entry	The full telephone number should be given.
Examples	08456 050505
Additional information	-
Other comments	-

Metadata element name	Facsimile number of the distributor
Definition	telephone number by which individuals can communicate with the organisation or individual by facsimile
Purpose and meaning	This enables the user to contact the distributor organisation by fax
Obligation	Optional
Occurrence	single
Data type	Character String
Domain	free text
Rules for how to fill in the entry	The full telephone number should be given.
Examples	0238079 2615
Additional information	-
Other comments	-

Metadata element name	email address of the distributor
Definition	internet email address which individuals can use to contact the organisation or individual
Purpose and meaning	This enables the user to contact the distributor organisation by email
Obligation	Optional
Occurrence	single
Data type	Character String
Domain	free text
Rules for how to fill in the entry	A valid email address should be given.
Examples	customerservices@ordnancesurvey.co.uk
Additional information	-
Other comments	-

Metadata element name	web address of the distributor
Definition	distributing organisation's World Wide Web address
Purpose and meaning	This enables the user to locate further information about the distributor
Obligation	Optional
Occurrence	single
Data type	Character String
Domain	free text
Rules for how to fill in the entry	A valid World Wide Web address should be given.
Examples	www.ordnancesurvey.co.uk
Additional information	-

A.24 Frequency of update

<table>
<tr><td>Metadata element name</td><td>Frequency of update</td></tr>
<tr><td>Definition</td><td>frequency with which modifications and deletions are made to the data after it is first produced</td></tr>
<tr><td>Purpose and meaning</td><td>This identifies how often the updated data resource is made available to the user (for instance a dataset may be updated continuously, but released to the user only monthly).</td></tr>
<tr><td>Obligation</td><td>Mandatory</td></tr>
<tr><td>Occurrence</td><td>single</td></tr>
<tr><td>Data type</td><td>enumerated list</td></tr>
<tr><td>Domain</td><td>
<table>
<tr><th>Name</th><th>Domain code</th></tr>
<tr><td>continual</td><td>001</td></tr>
<tr><td>daily</td><td>002</td></tr>
<tr><td>weekly</td><td>003</td></tr>
<tr><td>fortnightly</td><td>004</td></tr>
<tr><td>monthly</td><td>005</td></tr>
<tr><td>quarterly</td><td>006</td></tr>
<tr><td>biannually</td><td>007</td></tr>
<tr><td>annually</td><td>008</td></tr>
<tr><td>as Needed</td><td>009</td></tr>
<tr><td>irregular</td><td>010</td></tr>
<tr><td>not Planned</td><td>011</td></tr>
<tr><td>unknown</td><td>012</td></tr>
</table>
</td></tr>
<tr><td>Rules for how to fill in the entry</td><td>1. Pick a value from the table that most closely corresponds to the update frequency for the data resource.
2. Where no value corresponds exactly to reality, the nearest should be chosen.
3. If there are two values that apply equally, then select the one indicating less frequency.
4. Where the data resource is not updated, use 011 (not Planned)</td></tr>
<tr><td>Examples</td><td>005</td></tr>
<tr><td>Additional information</td><td>The domain codes are taken from ISO 19115 (MD_MaintenanceFrequencyCode)</td></tr>
<tr><td>Other comments</td><td>-</td></tr>
</table>

A.25 Access constraint

Metadata element name	Access constraint
Definition	restrictions and legal prerequisites for the access of the data
Purpose and meaning	The purpose of this element is to identify any external restrictions on access to the data such as licence arrangements.
Obligation	Optional
Occurrence	multiple
Data type	enumerated list
Domain	Sub-set of code list from ISO 19115 MD_RestrictionCode (see below). This list is a sub-set of MD_RestrictionCode given in ISO 19115, without those codes applicable to Use Constraints.
Rules for how to fill in the entry	1. The most common access restriction should be identified. 2. The appropriate code should be recorded. 3. More than one value may be included.
Examples	001
Additional information	Access constraints are different from Use constraints which are warnings about its suitability for particular types of usage.
Other comments	IN UK GEMINI, the name of the element should be “access constraints” to match ISO 19115, there is a wrong spelling of “licence” and the code list.

Code list

Name	**Domain code**	**Definition**
licence	005	formal permission required for use, usually requiring payment of a fee
restricted	007	withheld from general circulation or disclosure
other restrictions	008	limitation not listed

A.26 Use constraints

Metadata element name	Use constraint
Definition	restrictions and legal restraints on using the data
Purpose and meaning	The purpose of this element is to describe any restrictions on usage of the data (as opposed to access)
Obligation	Optional
Occurrence	multiple
Data type	enumerated list
Domain	Sub-set of code list from ISO 19115 MD_RestrictionCode (see below). This list is a sub-set of MD_RestrictionCode given in ISO 19115, without those codes applicable to Access Constraints.
Rules for how to fill in the entry	1. The most common use restriction should be identified. 2. The appropriate code should be recorded. 3. More than one value may be included. 4. If code 008 (other restrictions) is used, e.g. when the data resource is not to be used for navigation, then this additional information should be given in Lineage.
Examples	005
Additional information	Use constraints are different from Access constraints which describe limitations on access to the data. A dataset can have open access (e.g. to look at it), but restricted use.
Other comments	This will need to be modified to a free text field as the codes are not really suitable to convey the likely use constraints

Code list

Name	**Domain code**	**Definition**
copyright	001	exclusive right to the publication, production, or sale of the rights to a data resource, or to the use of a commercial print or label
patent	002	exclusive right to make, sell, use or license data resource
patent pending	003	produced or sold information awaiting a patent
intellectual property rights	006	rights to financial benefit from and control of distribution of non-tangible property that is a result of creativity
other restrictions	008	limitation not listed

A.27 Additional information source

Metadata element name	Additional information source
Definition	source of further information about the dataset
Purpose and meaning	The purpose of this element is to record references to relevant information held externally, for example a reference (e.g. a URL) to background information.
Obligation	Optional
Occurrence	single
Data type	Character String
Domain	free text
Rules for how to fill in the entry	1. Any references to external information that are considered useful may be recorded. 2. Do not use this to record additional information.
Examples	"For full details about this dataset, see http:// www.ordnancesurvey.co.uk/oswebsite/products/osmastermap/address"
Additional information	-
Other comments	-

A.28 Online resource

Metadata element name	Online resource
Definition	information about the online sources from which the resource can be obtained
Purpose and meaning	The purpose of this element is to point to where the dataset may be downloaded. This may be different from where it may be ordered online, which should be included in the web address of the distributor.
Obligation	Optional
Occurrence	multiple
Data type	Character String
Domain	free text
Rules for how to fill in the entry	1. Identify whether the resource may be downloaded (if it cannot be downloaded, do not use this element). 2. Determine the location of the resource (may be a URL).
Examples	www.iso.org/iso/en/prods-services/iso3166ma/index.html
Additional information	-
Other comments	-

A.29 Browse graphic

Metadata element name	Browse graphic
Definition	graphic that illustrates the data
Purpose and meaning	The purpose of this element is to enable access to an example of the data. The entry contains the location of, or a valid path to, a picture or a sample of the data.
Obligation	Optional
Occurrence	multiple
Data type	Character String
Domain	free text
Rules for how to fill in the entry	The entry should be a valid instruction, for example a URL.
Examples	http://www.citiesrevealed.com/aware/aware_fr.htm
Additional information	-
Other comments	ISO 19115 implies that the graphic is embedded in the metadata. This is not recommended.

A.30 Date of update of Metadata

Metadata element name	Date of update of metadata
Definition	date on which the metadata was last changed
Purpose and meaning	This is the date at which the metadata can be considered current (rather than the dataset itself). It may be the date at which the metadata was reviewed and confirmed as being 'current'.
Obligation	Mandatory
Occurrence	single
Data type	Date
Domain	Single date as specified by ISO 8601 in the extended date format (YYYY-MM-DD), where YYYY is the year, MM is the month and DD is the day.
Rules for how to fill in the entry	1. This should be updated whenever the metadata is updated due to a change in the dataset, or when it is reviewed and confirmed as wholly correct. 2. It should not be updated when the metadata is only corrected, i.e. there have been no changes to the data resource itself and the rest of the metadata is not reviewed or confirmed as wholly correct. 3. The date should be at an appropriate level of resolution (e.g. the day, or the day and month) may be left blank if not known. 4. The date should not be in the future.
Examples	2001-09-02
Additional information	-
Other comments	-

A.31 Metadata standard name

Metadata element name	Metadata standard name
Definition	name of the metadata standard (including profile name) used
Purpose and meaning	The user needs to know the standard to which the metadata conforms.
Obligation	Optional
Occurrence	single
Data type	Character String
Domain	free text
Rules for how to fill in the entry	Use UK GEMINI. A default value may be set.
Examples	UK GEMINI FGDC ISO 19115
Additional information	-
Other comments	-

A.32 Metadata standard version

Metadata element name	Metadata standard version
Definition	version (profile) of the metadata standard used
Purpose and meaning	There may be different versions (editions) of the metadata standard used, and this element is required to define the standard completely.
Obligation	Optional
Occurrence	single
Data type	Character String
Domain	free text
Rules for how to fill in the entry	Identify the version of the metadata standard from the metadata system being used, if recorded. This is likely to be a year or amendment number. A default value may be set.
Examples	2003 Amd. 1
Additional information	This element requires that the Metadata standard name is also used.
Other comments	-