Guidance notes for the production of discovery metadata for the Marine Environmental Data and Information Network (MEDIN)

Metadata standards are evolving at an international level and these guidelines are therefore subject to change.

It is recommended that you use a download of this document from the Marine Environmental Data and Information Network (MEDIN) website (www.oceannet.org) rather than storing a local copy. A log of changes will be available on the website.

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Interim Draft 1.0	BS	2008-12-05	2008-12-20	Draft for comment
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Version 2.2	BS		2009-03-31	Mapped to 19115

MEDIN Elements

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1.0 Introduction

Standards are essential to enable easy discovery and use of data. There are different sorts of standards which are applied depending on what is aimed to achieve. The most common standard is one that sets out a specific format to record details of a dataset so that in the future other people can easily discover datasets that may be of use to them. This is termed a 'metadata discovery standard' and this guidance sets out the format used by MEDIN. Discovery metadata provides people with the information they require to find resources. All metadata released via the MEDIN portal must comply with a number of international and national metadata standards. The MEDIN metadata schema is based on the ISO 19115 standard, and includes all core INSPIRE metadata elements. It also complies with the UK GEMINI 2.2 draft metadata standard.

This document is designed to assist those creating metadata for MEDIN and provides guidance on how to complete each element. Please refer to the INSPIRE metadata implementing rules, http://inspire.jrc.ec.europa.eu/ rules and UK GEMINI 2.2 draft specification http://www.gigateway.org.uk/metadata/standards.html for additional information.

Metadata standards may change over time. It is recommended that the most current version is downloaded. Latest version controlled copies can be accessed from www.oceannet.org.

1.1. Ensuring that a dataset or service will be easily discovered and used

It is important that other users of MEDIN can find out how to access the raw data or products by using the information held in this standard. Therefore, where available, links are provided to web pages and/or contact details of the person who holds the dataset are given. If there is a direct link to the dataset or service then it should be stated in Element 5 ‘Resource Locator’. Further information such as, related documents and links to other portals that may also hold information on the dataset, should be given in Element 19 ‘Additional Information Source’ and the contact details of the person who holds the dataset should be given in Element 22 ‘Responsible Party’.

1.2 Using this document

This document outlines the elements that make up the MEDIN discovery metadata standard. It encompasses the INSPIRE standards which specifically covers datasets, series of datasets and services (e.g. web services). In addition MEDIN allows metadata on other data types such as, reports to be created. The elements required for different types of resource are listed below along with guidance about filling in an element.

If you are preparing metadata about a dataset, a series or a report (nonGeographic Dataset) the following fields are relevant:

Element 1 - Resource title (M)
Element 2 - Alternative resource title (O)
Element 3 - Resource abstract (M)

Element 4 - Resource type (M)
Element 5 - Resource locator (C)
Element 6 - Unique resource identifier (M)
Element 8 - Resource language (C)
Element 9 - Topic category (C)
Element 11 - Keywords (M)
Element 12 - Geographical bounding box (M)
Element 13 - Extent (M)
Element 14 - Vertical extent information (O)
Element 15 - Spatial reference system (M)
Element 16 - Temporal reference (M)
Element 17 - Lineage (M)
Element 18 - Spatial resolution (M)
Element 19 - Additional information source (O)
Element 20 - Limitations on public access (M)
Element 21 - Conditions for access and use constraints (M)
Element 22 - Responsible party
Element 23 - Data format (O)
Element 24 - Frequency of update (C)
Element 25 - INSPIRE conformity (C)
Element 26 - OAI Harvesting (C)
Element 27 - Date of update of metadata (M)
Element 28 - Metadata standard name (M)
Element 29 - Metadata standard version (M)
Element 30 - Metadata language (M)

If you are preparing metadata about a service the following fields are relevant:

Element 1 - Resource title (M)
Element 2 - Alternative resource title (O)
Element 3 - Resource abstract (M)
Element 4 - Resource type (M)
Element 5 - Resource locator (C)
Element 7 - Coupled resource (C)
Element 10 - Spatial data service type (C)
Element 11 - Keywords (M)
Element 12 - Geographical bounding box (M)
Element 13 - Extent (M)
Element 14 - Vertical extent information (O)
Element 15 - Spatial reference system (M)
Element 16 - Temporal reference (M)
Element 17 - Lineage (M)
Element 19 - Additional information source (O)
Element 20 - Limitations on public access (M)
Element 21 - Conditions for access and use constraints (M)
Element 22 - Responsible party (M)
Element 24 - Frequency of update (C)
Element 25 - INSPIRE conformity (C)
Element 26 - OAI Harvesting (C)
Element 27 - Date of update of metadata (M)
Element 28 - Metadata standard Name (M)
Element 29 - Metadata standard Version (M)
Element 30 - Metadata language (M)

1.3 Filling in an element

The element descriptions are made up of 8 parts which are outlined below.

a) Element number – The MEDIN reference number of the element

b) Element name – The MEDIN name of the element

c) and d) Requirement – One of three codes as specified below**:**

Mandatory (M): the element must be filled in under all circumstances.
Conditional (C): the element must be completed if certain conditions are met e.g. Resource language must be completed if the resource contains textual information.
Optional (O): the element may be filled in if desired.

e) Occurrence – The number of times an element can occur in the schema, which will be either one or many.

e) Field type – The data allowed in a field (as specified below).

Free text – enter text in this field.
Controlled vocabulary – you must select an option from a list of values.
Numeric – enter only numbers into this field.
Date or Date/time – specify a date or a date and time in the format yyyy-mm-dd for dates and hh:mm:ss for times

g) Description – A description of the data with links to codelist used or websites where vocabularies can be found.

h) Example(s) – An example of the element.

An example element layout:

i) Example xml fragment:

A fragment of an xml output from an ISO compliant schema. The mapping of MEDIN elements to the ISO schema can be found in section 8.0 of this document.

a) Element 100 – b) Resource Example c)(M)

d) Mandatory element. e) Only one resource title allowed. f) Free text.

g) Each element listed in this document has accompanying text which describes its purpose and how to fill it in.

h) Examples

Example 1: 1992 Centre for Environment, Fisheries and Aquaculture Science (Cefas) North Sea 2m beam trawl survey.

i) Example xml fragment:

<gmd:identificationInfo>
<gmd:MD_DataIdentification>
<gmd:CI_Citation>

<gmd:title>1992 Centre for Environment, Fisheries and Aquaculture Science (Cefas) North Sea 2m beam trawl survey.</gmd:title>
</gmd:CI_Citation>
<!--other metadata elements may be present here-->
</gmd:MD_DataIdentification>
</gmd:identificationInfo>

2.0 Elements for identifying a resource

Element 1 - Resource title (M)

Mandatory element. Only one resource example allowed. Free text.

The title is used to provide a brief and precise description of the dataset. The following format is recommended:

'Date' 'Originating organization/programme' 'Location' 'Type of survey'. It is advised that acronyms and abbreviations are reproduced in full. Example: Centre for Environment, Fisheries and Aquaculture Science (Cefas).

Examples

Example 1: 1992 Centre for Environment, Fisheries and Aquaculture Science (Cefas) North Sea 2m beam trawl survey.

Example 2: 1980-2000 Marine Life Information Network UK (MarLIN) Sealife Survey records.

Example xml fragment:

```
<gmd:identificationInfo>
<!--other metadata elements may be present here-->
<gmd:MD_DataIdentification>
<gmd:CI_Citation>
<gmd:title>
<gco:CharacterString>1980-2000 Marine Life Information Network UK (MarLIN) Sealife Survey records. </gco:CharacterString>
</gmd:title>
</gmd:CI_Citation>
<!--other metadata elements may be present here-->
</gmd:MD_DataIdentification>
</gmd:identificationInfo>
```

Element 2 - Alternative resource title (O)

Optional element. Multiple alternative resource titles allowed. Free text.

The alternative title is used to add the names by which a dataset may be known and may include short name, other name, acronym or alternative language title.

Example

1980-2000 MarLIN Volunteer Sighting records.

Example xml fragment (showing title element and alternate title element):

```
<gmd:identificationInfo>
<!--other metadata elements may be present here-->
<gmd:MD_DataIdentification>
<gmd:CI_Citation>
<gmd:title>
```

<gco:CharacterString>1980-2000 Marine Life Information Network UK (MarLIN) Sealife Survey records. </gco:CharacterString>
</gmd:title>
<gmd:alternativeTitle>
<gco:CharacterString>1980-2000 MarLIN Volunteer Sighting records.</gco:CharacterString>
</gmd:alternativeTitle>
</gmd:CI_Citation>
<!--other metadata elements may be present here-->
</gmd:MD_DataIdentification>
</gmd:identificationInfo>

Element 3 - Resource abstract (M)

Mandatory element. Only one resource abstract allowed. Free text.

The abstract should provide a clear and brief statement of the content of the resource. Include what has been recorded, what form the data takes, what purpose it was collected for, and any limiting information, i.e. limits or caveats on the use and interpretation of the data. Background methodology and quality information should be entered into the Lineage element (element 10). It is recommended that acronyms and abbreviations are reproduced in full. e.g. Centre for Environment, Fisheries and Aquaculture Science (Cefas).

Examples

Example 1: Benthic marine species abundance data from an assessment of the cumulative impacts of aggregate extraction on seabed macro-invertebrate communities. The purpose of this study was to determine whether there was any evidence of a large-scale cumulative impact on benthic macro-invertebrate communities as a result of the multiple sites of aggregate extraction located off Great Yarmouth in the southern North Sea.

Example 2: As part of the UK Department of Trade and Industry's (DTI's) ongoing sectorial Strategic Environmental Assessment (SEA) programme, a seabed survey programme (SEA2) was undertaken in May/June 2001 for areas in the central and southern North Sea UKCS. This report summarizes the sediment total hydrocarbon and aromatic data generated from the analyses of selected samples from three main study areas:

Area 1: the major sandbanks off the coast of Norfolk and Lincolnshire in the Southern North Sea (SNS);

Area 2: the Dogger Bank in the SNS; and

Area 3: the pockmarks in the Fladen Ground vicinity of the central North Sea (CNS).

Example 3: Survey dataset giving port soundings in Great Yarmouth.

Example 4: Conductivity, Temperature, Depth (CTD) grid survey in the Irish Sea undertaken in August 1981. Only temperature profiles due to conductivity sensor malfunction.

Example xml fragment:

<gmd:identificationInfo>
<!--other metadata elements may be present here-->

<gmd:MD_DataIdentification>
<!--other metadata elements may be present here-->
<gmd:abstract>
<gco:CharacterString>Conductivity, Temperature, Depth (CTD) grid survey in the Irish Sea undertaken in August 1981. Only temperature profiles due to conductivity sensor malfunction.<gco:CharacterString>
<gmd:abstract>
<!--other metadata elements may be present here-->
</gmd:MD_DataIdentification>
</gmd:identificationInfo>

Element 4 - Resource type (M)

Mandatory element. One occurrence allowed. Controlled vocabulary.

Identify the type of resource e.g. a dataset using the controlled vocabulary, MD_ScopeCode from ISO 19115. (See Annex 2 for codelist). In order to comply with INSPIRE the resource type must be a dataset, a series (collection of datasets with a common specification) or a service.

Example

series

Example xml fragment:

<gmd:hierarchyLevel>
<gmd:MD_ScopeCode
codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO_19139_Schemas/resources/Codelist/gmxCodelists.xml#MD_ScopeCode" codeListValue="service"
>service</gmd:MD_ScopeCode>
</gmd:hierarchyLevel>

Element 5 - Resource locator (C)

Conditional element. Multiple resource locators are allowed. Free text.

Formerly named online resource. If the resource is available online you must provide a web address (URL) that links to the resource.

Element 5.1 - Resource locator url (C)

Conditional element. Free text.

The URL (web address).

Element 5.2 - Resource locator name (O)

Optional element. Free text.

The name of the web resource.

Example

Resource locator url:

http://www.defra.gov.uk/marine/science/monitoring/merman.htm

Resource locator name: The Marine Environment National Monitoring and Assessment Database

Example xml fragment:

```
<gmd:distributionInfo>
<!--other metadata elements may be present here-->
<gmd:MD_Distribution>
<gmd:transferOptions>
<gmd:MD_DigitalTransferOptions>
<gmd:onLine>
<gmd:CI_OnlineResource>
<gmd:linkage>
<gmd:URL>http://www.defra.gov.uk/marine/science/monitoring/merman.htm</gmd:URL>
</gmd:linkage>
<gmd:name>
<gco:characterString>The Marine Environment National Monitoring and Assessment Database</gco:characterString>
</gmd:name>
</gmd:CI_OnlineResource>
</gmd:onLine>
</gmd:MD_DigitalTransferOptions>
</gmd:transferOptions>
<!--other metadata elements may be present here-->
</gmd:MD_Distribution>
</gmd:distributionInfo>
```

Element 6 - Unique resource identifier (M)

Mandatory element (for datasets and series of datasets). One occurrence allowed. Free text.

Provide a code uniquely identifying the resource. You may also specify a code space.

6.1 - Code (M)

Mandatory sub-element (for datasets and series of datasets). One occurrence allowed. Free text.

A unique identification code for the resource.

6.2 - Code Space (O)

Optional sub-element. One occurrence allowed. Free text.

A name space associated with the code.

Examples

Example 1:

code: MRMLN0010000006B

Example 2:

code: 0036527495
codeSpace: http://www.example.eu

Example xml fragment:

```
<gmd:identificationInfo>
<!--other metadata elements may be present here-->
<gmd:MD_DataIdentification>
<!--other metadata elements may be present here-->
<gmd:citation>
<gmd:CI_Citation>
<!--other metadata elements may be present here-->
<gmd:identifier>
<gmd:RS_Identifier>
<gmd:code>
<gco:characterString>0036527495</gco:characterString>
</gmd:code>
<gmd:codeSpace>
<gco:characterString>http://www.example.eu</gco:characterString>
</gmd:codeSpace>
</gmd:RS_Identifier>
</gmd:identifier>
</gmd:CI_Citation>
</gmd:citation>
<!--other metadata elements may be present here-->
</gmd:MD_DataIdentification>
<!--other metadata elements may be present here-->
</gmd:identificationInfo>
```

Element 7 - Coupled resource (C)

Conditional element. Mandatory if the datasets a service operates on are available. Multiple coupled resource occurrences allowed.

An INSPIRE element referring to data services such as a data download or mapping web services. It identifies the data resource(s) used by the service if these are available separately from the service. You should supply the Unique resource identifiers of the relevent datasets (See element 6).

Example

MRMLN0000345

Example xml fragment:

```
<gmd:identificationInfo>
<!--other metadata elements may be present here-->
<srv:SV_ServiceIdentification>
<srv:operatesOn>JNCC000982</srv:operatesOn>
<srv:operatesOn>BODC000985</srv:operatesOn>
<srv:operatesOn>BGS000989</srv:operatesOn>
</srv:SV_ServiceIdentification>
```

```
<!--other metadata elements may be present here-->
</gmd:identificationInfo>
```

Element 8 - Resource language (C)

Conditional element. Mandatory when the described resource contains textual information. Multiple resource languages allowed. This element is not required if a service[1] is being described rather than a dataset or series of datasets. Controlled vocabulary.

[1] See Element 4 resource type for definition of a 'service'

Describes the language(s) of any textual information contained within the resource.

Select the relevant 3-letter code(s) from the ISO 639-2 code list of languages. Additional languages may be added to this list if required. A full list of UK language codes is listed in Annex 3 and a list of recognized languages available online http://www.loc.gov/standards/iso639-2.

Examples

Example 1: eng (English)

Example 2: cym (Welsh)

```
<gmd:identificationInfo>
<!--other metadata elements may be present here-->
<gmd:MD_DataIdentification>
<!--other metadata elements may be present here-->
<gmd:language>cym</gmd:language>
<!--other metadata elements may be present here-->
</gmd:MD_DataIdentification>
<!--other metadata elements may be present here-->
</gmd:identificationInfo>
```

3.0 Elements classifying spatial data and services

Element 9 - Topic category (C)

Conditional element. Mandatory for datasets and series of datasets. Multiple topic categories are allowed. This element is not required if a service[1] is being described. Controlled vocabulary.

This element is mandatory for INSPIRE and must be included, however, MEDIN will use the Keywords as these are more valuable to allow users to search for datasets. This indicates the main theme(s) of the data resource. It is required for INSPIRE compliance. The relevant topic category should be selected from the ISO MD_TopicCategory list. The full list can be found in Annex 4.

[1] See Element 4 resource type for definition of a 'service'

Examples

Example 1: biota

Example 2: oceans

Example xml fragment:

```
<gmd:identificationInfo>
<!--other metadata elements may be present here-->
<gmd:MD_DataIdentification>
<!--other metadata elements may be present here-->
<gmd:topicCategory>
<gmd:MD_TopicCategoryCode> biota </gmd:MD_TopicCategoryCode>
<gmd:MD_TopicCategoryCode>oceans</gmd:MD_TopicCategoryCode>
</gmd:topicCategory>
<!--other metadata elements may be present here-->
</gmd:MD_DataIdentification>
<!--other metadata elements may be present here-->
</gmd:identificationInfo>
```

Element 10- Spatial data service type (C)

Conditional element. Mandatory if the described resource is a service[1]. One occurrence allowed.

An element required by INSPIRE for metadata about data services e.g. web services[1]. If a service is being described (from Element 4) it must be assigned a service type from the INSPIRE Service type codelist. See Annex 5 for list.

[1] See Element 4 resource type for definition of a 'service'

Example

Download

Example xml fragment:

```
<gmd:identificationInfo>
<!--other metadata elements may be present here-->
<srv:SV_ServiceIdentification>
<!--other metadata elements may be present here-->
<srv:serviceType>
<gco:LocalName>Download</ gco:LocalName >
</srv:serviceType>
<!--other metadata elements may be present here-->
</srv:SV_ServiceIdentification>
<!--other metadata elements may be present here-->
</gmd:identificationInfo>
```

Element 11 - Keywords (M)

Mandatory element. Multiple keywords allowed. Controlled vocabularies.

The entry should consist of two sub-elements the keywords and reference to the controlled vocabulary used. To allow searching of the dataset keywords should be chosen from 2 codelists. At least one keyword from the Gemet controlled vocabulary should be used in order to comply with INSPIRE regulations.

A list of keywords is available here:

http://www.eionet.europa.eu/gemet.

MEDIN also uses the SeaDataNet Parameter Discovery Vocabulary to provide further ability to search by terms that are more related to the marine domain. This is available at: http://vocab.ndg.nerc.ac.uk/clients/getList?recordKeys=http://vocab.ndg.nerc.ac.uk/list/P021/current&earliestRecord=&submit=submit

Other vocabularies may be added. Please contact MEDIN if further vocabularies are required.

11.1 - Originating controlled vocabulary (M)

Mandatory element. Multiple controlled vocabularies allowed. Controlled vocabulary.

The controlled vocabulary from which keywords are derived should be specified in this element.

11.1 - Keyword value (M)

Mandatory element. Multiple keywords allowed from each vocabulary. Controlled vocabulary.

Name of the formally registered thesaurus or a similar authoritative source of keywords.

11.2.1 - Thesaurus name (M)

Free text. Title of vocabulary or thesaurus (mandatory).

11.2.2 - Date type (M)

Controlled vocabulary. Select one of the following three values: Creation, Revision or Publication.

11.2.3 - Date (M)

Date format. Date of creation, revision or publication as defined in 11.1.2 Date type.

Example

This example shows entries from one vocabulary.

keywordValue: Fish taxonomy-related counts
keywordValue: Temperature of the water column
thesaurusName: SeaDataNet p021
dateType: Revision
date: 2008-09-01

Example xml fragment:

```
<gmd:identificationInfo>
<!--other metadata elements may be present here-->
<gmd:MD_DataIdentification>
<!--other metadata elements may be present here-->
<gmd:descriptiveKeywords>
<gmd:MD_Keywords>
```

```
<gmd:keyword>
<gco:characterString>Ocean temperature</gco:characterString>
</gmd:keyword>
<gmd:thesaurusName>
<gmd:CI_Citation>
<gmd:title>
<gco:characterString>GEMET – INSPIRE themes, version 1.0</gco:characterString>
</gmd:title>
<gmd:date>
<gmd:CI_Date>
<gmd:date>
<gco:Date>2008-09-01</gco:Date>
</gmd:date>
<gmd:dateType>
<gmd:CI_DateTypeCode
codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO_19139_Schemas/res
ources/Codelist/ML_gmxCodelists.xml#CI_DateTypeCode"
codeListValue="revision">revision</gmd:CI_DateTypeCode>
</gmd:dateType>
</gmd:CI_Date>
</gmd:date>
</gmd:CI_Citation>
</gmd:thesaurusName>
</gmd:MD_Keywords>
<gmd:MD_Keywords>
<gmd:keyword>
<gco:characterString>Temperature of the water column</gco:characterString>
</gmd:keyword>
<gmd:thesaurusName>
<gmd:CI_Citation>
<gmd:title>
<gco:characterString>SeaDataNet p021</gco:characterString>
</gmd:title>
<gmd:date>
<gmd:CI_Date>
<gmd:date>
<gco:Date>2008-06-01</gco:Date>
</gmd:date>
<gmd:dateType>
<gmd:CI_DateTypeCode
codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO_19139_Schemas/res
ources/Codelist/ML_gmxCodelists.xml#CI_DateTypeCode"
codeListValue="publication">publication</gmd:CI_DateTypeCode>
</gmd:dateType>
</gmd:CI_Date>
</gmd:date>
</gmd:CI_Citation>
</gmd:thesaurusName>
</gmd:MD_Keywords>
</gmd:descriptiveKeywords>
<!--other metadata elements may be present here-->
</gmd:MD_DataIdentification>
```

<!--other metadata elements may be present here-->
</gmd:identificationInfo>

Element 12 - Geographical bounding box (M)

Mandatory element. One occurrence of each sub-element allowed. Numeric and controlled vocabulary.

These four sub-elements represent the geographical bounding box of the resource's extent and should be kept as small as possible. The co-ordinates of this bounding box should be expressed as decimal degrees longitude and latitude. A minimum of two and a maximum of four decimal places should be provided.

Latitudes between 0 and 90N, and longitudes between 0 and 180E should be expressed as positive numbers, and latitudes between 0 and 90S, and longitudes between 0 and 180W should be expressed as negative numbers.

12.1 - West bounding longitude (M)

Mandatory element. One occurrence allowed. Numeric decimal (2 - 4 decimal places).

The western-most limit of the data.

12.2 - East bounding longitude (M)

Mandatory element. One occurrence allowed. Numeric decimal (2 - 4 decimal places).

The eastern-most limit of the data.

12.3 - North bounding latitude (M)

Mandatory element. One occurrence allowed. Numeric decimal (2 - 4 decimal places).

The northern-most limit of the data.

12.4 - South bounding latitude (M)

Mandatory element. One occurrence allowed. Numeric decimal (2 - 4 decimal places).

The southern-most limit of the data.

Example

westBoundingLongitude: -4.351
eastBoundingLongitude: -1.348
northBoundingLatitude: 52.949
southBoundingLatitude: 52.117

Example xml fragment:

(Can be in either Data_identification or SV_Identification)

<!--other metadata elements may be present here-->
<gmd:extent>

```
<gmd:EX_Extent>
<!--other metadata elements may be present here-->
<gmd:geographicElement>
<gmd:EX_GeographicBoundingBox>
<gmd:westBoundLongitude>
<gco:Decimal>-3.93</gco:Decimal>
</gmd:westBoundLongitude>
<gmd:eastBoundLongitude>
<gco:Decimal>1.07</gco:Decimal>
</gmd:eastBoundLongitude>
<gmd:southBoundLatitude>
<gco:Decimal>53.10</gco:Decimal>
</gmd:southBoundLatitude>
<gmd:northBoundLatitude>
<gco:Decimal>53.70</gco:Decimal>
</gmd:northBoundLatitude>
</gmd:EX_GeographicBoundingBox>
</gmd:geographicElement>
<!--other metadata elements may be present here-->
</gmd:EX_Extent>
</gmd:extent>
```

Element 13 - Extent (M)

Mandatory element. Multiple occurrences of extents allowed. Controlled vocabulary.

Keywords selected from controlled vocabularies to describe the spatial extent of the resource. A number of controlled vocabularies can be used including ISO 3166: higher level area in the United Kingdom, ICES areas and rectangles www.ices.dk , Charting Progress Regional sea areas.

13.1 - Originating controlled vocabulary (M)

Mandatory sub-element. Multiple controlled vocabularies allowed. Controlled vocabulary.

A list of extent vocabularies is available from the MEDIN website. Other vocabularies may be added if required. Please contact MEDIN if further vocabularies are required.

13.1.1 - Vocabulary name

Free text. Title of vocabulary or thesaurus (mandatory).

13.1.2 - Date type

Controlled vocabulary. Select one of the following three values: Creation, Revision or Publication.

13.1.3 - Date

Date format. Date of creation, revision or publication as defined in 13.1.2 Date type.

13.2 - Extent name (M)

Mandatory element. Multiple extents allowed. Controlled vocabulary.

Name of the formally registered thesaurus or a similar authoritative source of extents. Derived from a controlled vocabulary held on the MEDIN website.

Example

This example includes multiple extents from different vocabularies.

extentName: Scotland
vocabularyName: ISO3166 Countries
dateType: Creation
date: 2005-04-29

extentName: Ices Area IVb
vocabularyName: ICES Regions
dateType: Revision
date: 2006-01-01

extentName: Northern North Sea
vocabularyName: Charting Progress 2 regions.
dateType: Revision
date: 2008-09-01

extentName: North Sea
thesaurusName: IHO Sea Areas 1952
dateType: creation
date: 1952-01-01

Example xml fragment:

(Can be in either Data_identification or SV_Identification)

```
<gmd:extent>
<gmd:EX_Extent>
<!--other metadata elements may be present here-->
<gmd:EX_geographicDescription>
<gmd:geographicIdentifier>
<gmd:MD_Identifier>
<gmd:authority>
<gmd:CI_Citation>
<gmd:title>
<gco:characterString>ICES Regions</gco:characterString>
</gmd:title>
<gmd:date>
<gmd:CI_Date>
<gmd:date>
<gco:Date>2006-01-01</gco:Date>
</gmd:date>
<gmd:dateType>
<gmd:CI_DateTypeCode
```

codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO_19139_Schemas/resources/Codelist/ML_gmxCodelists.xml#CI_DateTypeCode"
codeListValue=" Revision">Revision</gmd:CI_DateTypeCode>
</gmd:dateType>
</gmd:CI_Date>
</gmd:date>
</gmd:CI_Citation>
</gmd:authority>
<gmd:code> <gco:characterString>North Sea</gco:characterString></gmd:code>
</gmd:MD_Identifier>
</gmd:geographicIdentifier>
</gmd:EX_geographicDescription>
</gmd:EX_Extent>
</gmd:extent>

Element 14 - Vertical extent information (O)

Optional element. The vertical extent information should be filled in where the vertical co-ordinates are significant to the resource. One occurrence allowed. Numeric free text and controlled vocabulary.

The vertical extent element has four sub-elements; the minimum vertical extent value, the maximum vertical extent value, the units and the coordinate reference system. Depth below sea water surface should be a negative number. Depth taken in the intertidal zone above the sea level should be positive. If the dataset covers from the intertidal to the subtidal zone then the 14.1 should be used to record the highest intertidal point and 14.2 the deepest subtidal depth. Although the element itself is optional if it is filled in then its sub-elements are either mandatory or conditional.

14.1 - Minimum Value (M)

Record as positive or negative decimal number. The shallowest depth recorded if subtidal, or if intertidal the lowest point recorded.

14.2 - Maximum Value (M)

Record as positive or negative decimal number. The deepest depth recorded if subtidal, or if intertidal, the highest point recorded.

14.3 - Units (M)

The units the depths or heights in sub-elements 14.2 and 14.3 are recorded in.

14.4 - Vertical coordinate reference system (C)

Include where known from a controlled vocabulary. The EPSG geodetic parameter register is recommended http://www.epsg.org/Geodetic.html. Please contact MEDIN if updates to this list are required. Do not guess if not known.

Example

minimumValue: -60
maximumValue: -5
units: metres
verticalCoordinateReferenceSystem:

Element 15 - Spatial reference system (M)

Mandatory element. One occurrence allowed. Controlled vocabulary.

Describes the system of spatial referencing (typically a coordinate reference system) used in the resource. This should be derived from a controlled vocabulary. The SeaDataNet list http://vocab.ndg.nerc.ac.uk/clients/getList?recordKeys=http://vocab.ndg.nerc.ac.uk/list/L101/current&earliestRecord=&submit=submit is recommended. Please contact MEDIN if updates to this list are required. Do not guess if not known.

Examples

Example 1: WGS84

Example 2: National Grid of Great Britain

Example of ISO compliant xml fragment:

***********Needs looking at**********

```
<gmd:referenceSystemInfo>
<gmd:MD_ReferenceSystem>
<gmd:referenceSystemIdentifier>
<gmd:RS_Identifier>
<gmd:CI_Citation>
<gmd:authority>
<gmd:title>
<gco:characterString>ICES Regions</gco:characterString>
</gmd:title>
<gmd:date>
<gmd:CI_Date>
<gmd:date>
<gco:Date>2006-01-01</gco:Date>
</gmd:date>
<gmd:dateType>
<gmd:CI_DateTypeCode
codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO_19139_Schemas/resources/Codelist/ML_gmxCodelists.xml#CI_DateTypeCode"
codeListValue=" Revision">Revision</gmd:CI_DateTypeCode>
</gmd:dateType>
</gmd:CI_Date>
</gmd:date>
</gmd:authority>
</gmd:CI_Citation>
<gmd:code><gco:characterString> 28992</gco:characterString></gmd:code>
<gmd:codeSpace>http://vocab.ndg.nerc.ac.uk/term/L101/2<gmd:codeSpace>,
</gmd:RS_Identifier>
</gmd:referenceSystemIdentifier>
</gmd:MD_ReferenceSystem>
</gmd:referenceSystemInfo>
```

Element 16 - Temporal reference (M)

Mandatory element. At least one of the sub-elements must be included. One occurrence allowed of each sub element. Date/Time format.

It is recommended that all known temporal references of the resource are included, but you must include at least one of the following elements.

16.0.1 Date type

Indicates temporal extent described (one of the sub elements 16.1-16.4) temporalExtent, creation, publication or revision.

16.0.2 Date

Date format.

date or date and time: yyyy-mm-dd or yyyy-mm-ddThh:mm:ss

16.1 - Temporal extent (C)

Conditional. Complete if known. One occurrence allowed. Date or Date/Time format.

This describes the start and end date of the resource e.g. survey, and should be included where known. You should include both a start and end date. It is recommended that a full date including year, month and day is added, but it is accepted that for some historical resources only vague dates (year only, year and month only) are available.

16.1.1 Begin

Start of temporal extent.

16.1.2 End

End of temporal extent.

16.2 - Date of publication (C)

Conditional element. Complete if known. One occurrence allowed. Date/Time format.

This describes the publication date of the resource and should be included where known. If the resource is previously unpublished please use the date that the resource was made publically available via the MEDIN network. It is recommended that a full date including year, month and day is added, but it is accepted that for some historical resources only vague dates (year only, year and month only) are available.

16.3 - Date of last revision (C)

Conditional element. Complete if known. One occurrence allowed. Date/Time format.

This describes the most recent date that the resource was revised. It is recommended that a full date including year, month and day is added.

16.4 - Date of creation (C)

Conditional element. Complete if known. One occurrence allowed. Date/Time format.

This describes the most recent date that the resource was created. It is recommended that a full date including year, month and day is added.

Examples

Example 1:
dateType: creation
date: 2008-05-12T12:34:09 (date and time provided)

Example 2:

dateType: revision
date:2008-05-12 (full date provided)

Example 3:
dateType: publication
date:1952-06-00 (month and year provided, but no day)

Example 4:
dateType: creation
date: 1899-00-00 (only year provided).

Example 5:
dateType: temporalExtent
date: begin: 1980-01-01 **end:** 1990-03-01

Example xml fragment (temporal extent):

```
<gmd:identificationInfo>
<!--other metadata elements may be present here-->
<gmd:MD_DataIdentification>
<!--other metadata elements may be present here-->
<gmd:extent>
<gmd:EX_Extent>
<!--other metadata elements may be present here-->
<gmd:temporalElement>
<gmd:EX_TemporalExtent>
<gmd:extent>
<gml:TimePeriod>
<gml:beginPosition>1980-01-01</gml:beginPosition>
<gml:endPosition>1990-03-01</gml:endPosition>
</gml:TimePeriod>
</gmd:extent>
</gmd:EX_TemporalExtent>
</gmd:temporalElement>
</gmd:EX_Extent>
</gmd:extent>
<!--other metadata elements may be present here-->
```

```
</gmd:MD_DataIdentification>
<!--other metadata elements may be present here-->
</gmd:identificationInfo>
```

Example xml fragment (other temporal references):

```
<gmd:identificationInfo>
<gmd:MD_DataIdentification>
<gmd:citation>
<gmd:CI_Citation>

<gmd:date>
<gmd:CI_Date>
<gmd:date>
<gco:Date>2008-05-12</gco:Date>
</gmd:date>
<gmd:dateType>
<gmd:CI_DateTypeCode
codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO_19139_Schemas/resources/Codelist/ML_gmxCodelists.xml#CI_DateTypeCode"
codeListValue=" Revision">revision</gmd:CI_DateTypeCode>
</gmd:dateType>
</gmd:CI_Date>
</gmd:date>

</gmd:CI_Citation>
</gmd:citation>
<!--other metadata elements may be present here-->
</gmd:MD_DataIdentification>
<!--other metadata elements may be present here-->
</gmd:identificationInfo>
```

4.0 Elements describing data quality

Element 17 - Lineage (M)

Mandatory element for datasets or series of datasets. One occurrence allowed. This Element is not required if a service[1] is being described. Free text.

Lineage includes the background information, history of the sources of data used and can include data quality statements. The lineage element can include information about: source material; data collection methods used; data processing methods used; quality control processes. Please indicate any data collection standards used. Additional information source to record relevant references to the data e.g reports, articles, website.

[1] See Element 4 Resource type for definition of a 'service'

Examples

Example 1: This dataset was collected by the Fisheries Research Services and provided

to the British Oceanographic Data Centre for long term archive and management.

Example 2: (no protocols or standards used)- Forty 0.1m^2 Hamon grab samples were collected from across the region, both within and beyond the extraction area, and analyzed for macrofauna and sediment particle size distribution in order to produce a regional description of the status of the seabed environment. Samples were sieved over a 1mm mesh sieve. In addition, the data were analyzed in relation to the area of seabed impacted by dredging over the period 1993-1998. Areas subject to 'direct' impacts were determined through reference to annual electronic records of dredging activity and this information was then used to model the likely extent of areas potentially subject to 'indirect' ecological and geophysical impact.

Example 3: (collected using protocols and standards) - Data was collected using the NMMP data collection, processing and Quality Assurance SOPs and complies to MEDIN data standards.

Example 4: Survey data from MNCR lagoon surveys were used to create a GIS layer of the extent of saline lagoons in the UK that was ground-truthed using 2006-2008 aerial coastal photography obtained from the Environment Agency and site visits to selected locations.

Example xml fragment:

```
<gmd:identificationInfo>
<!--other metadata elements may be present here-->
<gmd:dataQualityInfo>
<!--other metadata elements may be present here-->
<gmd:DQ_DataQuality>
<gmd:lineage>
<gmd:LI_Lineage>
<gmd:statement>
<gco:characterString>Survey data from MNCR lagoon surveys were used to create a GIS layer of the extent of saline lagoons in the UK that was ground-truthed using 2006-2008 aerial coastal photography obtained from the Environment Agency and site visits to selected locations.</gco:characterString>
</gmd:statement>
</gmd:LI_Lineage>
</gmd:lineage>
</gmd:DQ_DataQuality>
</gmd:dataQualityInfo>
</gmd:identificationInfo>
```

Element 18 - Spatial resolution (M)

Mandatory element. One occurrence allowed. Numeric (positive whole number) and free text.

Provides an indication of the resolution of the data; i.e. how accurate the spatial positions are likely to be. An approximate value may be given.

18.1 - Resolution (M)

Mandatory element. Many occurrences allowed. Numeric (positive whole number).

The spatial resolution of the resource.

18.2 - Units (M)

Mandatory element. Many occurrences allowed. Free text.

The units that the spatial resolution is expressed in.

Examples

Example 1:
resolution:10
units: meters

Example 2:
resolution:1000
units: kilometers

Example 3:
resolution: 50000
units: mapScale

Example of ISO compliant xml fragment:

```
<gmd:identificationInfo>
<!--other metadata elements may be present here-->
<gmd:spatialResolution>
<gmd:MD_Resolution>
<gmd:distance>
<gco:Distance uom="#m">100</gco:Distance>
</gmd:distance>
</gmd:MD_Resolution>
</gmd:spatialResolution>
<!--other metadata elements may be present here-->
</gmd:identificationInfo>
```

Element 19 - Additional information source (O)

Optional element. Multiple occurrences allowed. Free text.

Any references to external information that are considered useful, e.g. project website, report, journal article may be recorded. It should not be used to record additional information about the resource.

Example

Malthus, T.J., Harries, D.B., Karpouzli, E., Moore, C.G., Lyndon, A.R., Mair, J.M., Foster-Smith, B.,Sotheran, I. and Foster-Smith, D. (2006). Biotope mapping of the Sound of Harris, Scotland. Scottish Natural Heritage Commissioned Report No. 212 (ROAME No. F01AC401/2).

Example of ISO compliant xml fragment:

```
<gmd:identificationInfo>
<!--other metadata elements may be present here-->
<gmd:MD_DataIdentification>
<!--other metadata elements may be present here-->
<gmd:MD_supplementalInformation>
<gmd:CI_Citation>
<gmd:title>
<gco:characterString>Biotope mapping of the Sound of
Harris,Scotland.</gco:characterString>
</gmd:title>
<gmd:date>
<gmd:CI_Date>
<gmd:date>
<gco:Date>2006-01-01</gco:Date>
</gmd:date>
<gmd:dateType>
<gmd:CI_DateTypeCode
codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO_19139_Schemas/res
ources/Codelist/ML_gmxCodelists.xml#CI_DateTypeCode"
codeListValue="Publication">publication</gmd:CI_DateTypeCode>
</gmd:dateType>
</gmd:CI_Date>
</gmd:date>
<gmd:CI_ResponsibleParty>
<gmd:individualName>
<gco:characterString>Malthus, T.J., Harries, D.B., Karpouzli, E., Moore, C.G., Lyndon,
A.R., Mair, J.M., Foster-Smith, B.,Sotheran, I. and Foster-Smith, D</gco:characterString>
</gmd:individualName>
</gmd:CI_ResponsibleParty>
<gmd:otherCitationDetails>
<gco:characterString>Scottish Natural Heritage Commissioned Report No. 212 (ROAME
No. F01AC401/2)</gco:characterString>
</gmd:otherCitationDetails>
</gmd:CI_Citation>
<gmd:MD_supplementalInformation>
<!--other metadata elements may be present here-->
</gmd:MD_DataIdentification>
<!--other metadata elements may be present here-->
</gmd:identificationInfo>
```

5.0 Elements relating to data usage

Element 20 - Limitations on public access (M)

Mandatory element. Multiple occurrences allowed. Controlled vocabulary and free text.

This element describes any restrictions imposed on the resource for security and other reasons using the controlled ISO vocabulary RestrictionCode (See Annex 6). If restricted

or otherRestrictions is chosen please provide information on any limitations to access of resource and the reasons for them. If there are no limitations on public access, this must be indicated.

Examples

Example 1:
accessConstraints:
otherRestrictions:No restrictions to public access

Example 2:
accessConstraints:
otherRestrictions: Restricted public access, only available at 10km resolution.

Example of ISO compliant xml fragment:

```
<gmd:resourceConstraints>
<!--other metadata elements may be present here-->
<gmd:MD_LegalConstraints>
<gmd:accessConstraints>
<gmd:MD_RestrictionCode
codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO_19139_Schemas/resources/Codelist/ML_gmxCodelists.xml# MD_RestrictionCode "
codeListValue="otherRestrictions">otherRestrictions</gmd:MD_RestrictionCode>
</gmd:accessConstraints>
<gmd:otherConstraints>
<gco:characterString>Restricted public access, only available at 10km resolution</gco:characterString>
</gmd:otherConstraints>
</gmd:MD_LegalConstraints>
</gmd:resourceConstraints>
```

Element 21 - Conditions for access and use constraints (M)

Mandatory element. Multiple occurrences allowed. Free text.

This element describes any restrictions and legal restraints on using the data. Any known constraints should be identified. If no conditions apply, then “no conditions” should be recorded.

Examples

Example 1 - Data is freely available for research or commercial use providing that the originators are acknowledged in any publications produced.

Example 2 - Data is freely available for use in teaching and conservation but permission must be sought for use if the data will be reproduced in full or part or if used in any analyses.

Example 3 - Not suitable for use in navigation.

Example xml fragment:

```
<gmd:resourceConstraints>
<gmd:MD_Constraints>
<gmd:useLimitation>
<gco:characterString>Not suitable for use in navigation.</gco:characterString>
</gmd:useLimitation>
</gmd:MD_Constraints>
<!--other metadata elements may be present here-->
</gmd:resourceConstraints>
```

Element 22 - Responsible party (M)

Mandatory element. Multiple occurrences are allowed for some responsible party roles. Must include minimum of person/organization name and email address. Free text and controlled vocabulary.

Provides a description of the organization or person responsible for the resource. Responsible party roles are defined in Annex 7. It is mandatory to specify three types of responsible party;

Originator, **Data point of contact** and **Metadata point of contact.** Only Organisation or Individual name is required for Originator.

Please indicate where a Data Archive Centre is the Distributor or Metadata Point of Contact.

In addition, other types of responsible party may be specified from the controlled vocabulary (see Annex 7 for codelist) if desired.

The sub-elements for describing each responsible party entry are as follows;

22.0.1 - **Job Position** (O but recommended)

22.0.2 - **Organization name or Individual name** (M)

Where possible an organization should be cited and only when this is impossible should Individual Name be used.

22.0.3 - **Postal address** (O but recommended)

22.0.4 - **Telephone number** (O but recommended)

Where possible a generic rather than individual telephone number should be used e.g. the organizational switchboard

22.0.5 - **Facsimile number** (O)

22.0.6 - **Email address** (C)

Mandatory for Metadata and data points of contact, optional for Originator. Where possible a generic rather than a individual email should be used.

22.0.7 - **Responsible party role** (M)

See Annex 7 for full codelist.

22.1 - Originator (M)

Mandatory element. Multiple occurrences of originators allowed. Must include minimum of person/organization name and email address.

Person(s) or organization(s) with intellectual property rights over the resource.

22.2 - Data point of contact (M)

Mandatory element. Multiple occurrences of originators allowed. Must include minimum of person/organization name and email address.

Person(s) or organization(s) that can be contacted about the data. This is used in preference to distributor to comply with INSPIRE and can include both data originators and Data Archive Centres.

22.3 - Metadata point of contact (M)

Mandatory element. One occurence allowed. Must include minimum of person/organization name and email address.

Person or organization with responsibility for the maintenance of the metadata for the resource.

Examples

Data point of contact

JobPosition: DASSH Data officer
OrganizationName DASSH
PostalAddress: The Laboratory, Citadel Hill, Plymouth PL4 8SR
TelephoneNumber: 01752 633291
EmailAddress: dassh.enquiries@mba.ac.uk
ResponsiblePartyRole: distributor

JobPosition: Marine officer
OrganizationName Joint Nature Conservation Committee (JNCC)
PostalAddress: City Road, Peterborough, PE1 1JY,
TelephoneNumber: 01733 562626
FacsimileNumber: 01733 555948
EmailAddress: marine.teamexample@jnncc.gov.uk
ResponsiblePartyRole: pointOfContact

Originator

IndividualName: Dr A. Smith,
OrganizationName: University of Swansea
ResponsiblePartyRole: Originator

Metadata point of contact:

IndividualName: Mr John Howard
EmailAddress: j.howard@btinterneti.com
TelephoneNumber: 02345 432567
ResponsiblePartyRole: pointOf Contact

Example of ISO compliant xml fragment:

```
<gmd:CI_ResponsibleParty>
<gmd:organisationName>
<gco:characterString>Joint Nature Conservation Committee (JNCC)</gco:characterString>
</gmd:organisationName>
<gmd:positionName>Marine officer</gmd:positionName>
<gmd:contactInfo>
<gmd:CI_Contact>
<gmd:address>
<gmd:CI_Address>
<gmd:deliveryPoint>City Road</gmd:deliveryPoint>
<gmd:city>Peterborough</gmd:city>
<gmd:postalCode>PE1 1JY</gmd:postalCode>
<gmd:electronicMailAddress>
<gco:characterString> marine.teamexample@jnncc.gov.uk </gco:characterString>
</gmd:electronicMailAddress>
</gmd:CI_Address>
</gmd:address>
</gmd:CI_Contact>
</gmd:contactInfo>
<gmd:role>
<gmd:CI_RoleCode
codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO_19139_Schemas/resources/Codelist/ML_gmxCodelists.xml# CI_RoleCode"
codeListValue="pointOfContact">pointOfContact</gmd:CI_RoleCode>
</gmd:role>
</gmd:CI_ResponsibleParty>
```

Element 23 - Data format (O)

Optional element. Multiple data formats are allowed. Free text.

Indicate the formats in which digital data can be provided for transfer.

Examples

ArcGIS shapefiles

Comma Separated Value (.csv) file

Tiff image files

MPEG video files

Example of ISO compliant xml fragment:

```
<gmd:identificationInfo>
<!--other metadata elements may be present here-->
<gmd:resourceFormat>
<gmd:MD_format>
<gmd:name><gco:characterString>ESRI ArcGIS shapefile<gco:characterString>
</gmd:name>
<gmd:name><gco:characterString>Comma separated variable (CSV)
```

```
file<gco:characterString></gmd:name>
</gmd:MD_format>
</gmd:resourceFormat>
<!--other metadata elements may be present here-->
</gmd:identificationInfo>
```

Element 24 - Frequency of update (C)

Conditional element. One occurrence allowed. Controlled vocabulary.

This describes the frequency that the resource is modified or updated and should be included if known. Select one option from ISO frequency of update codelist (MD_FrequencyOfUpdate codelist). The full code list is presented in Annex 8.

Examples

Example 1: monthly
Example 2: annually

Example of ISO compliant xml fragment:

```
<gmd:identificationInfo>
<!--other metadata elements may be present here-->
<gmd:MD_MaintainenceInformation>
<gmd:maintenanceAndUpdateFrequency>
<gmd:MD_MaintenanceFrequencyCode
codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO_19139_Schemas/resources/Codelist/gmxCodelists.xml#MaintenanceFrequencyCode"
codeListValue="weekly"
>weekly</gmd:MD_MaintenanceFrequencyCode>
<gmd:maintenanceAndUpdateFrequency>
<gmd:MD_MaintainenceInformation>
<!--other metadata elements may be present here-->
<gmd:identificationInfo>
```

6.0 Elements relating to INSPIRE conformance

Element 25 - INSPIRE conformity

Conditional element. Multiple occurrences allowed. Required if the resource provider is claiming conformance to INSPIRE.

Element 25.1 - Degree of conformity (C)

Conditional element. Multiple occurrences allowed. Required if the resource provider is claiming conformance to INSPIRE.

This element relates to the INSPIRE Directive 1 and indicates whether a resource conforms to a product specification or other INSPIRE thematic specification. The values are as followed.

Element 25.2 - Specification (C)

Conditional element. Multiple occurrences allowed. Required if the resource provider is claiming conformance to INSPIRE. Controlled vocabulary.

If the resource is intended to conform to the INSPIRE thematic data specification, cite the data or thematic specifications that it conforms to using this element.

25.2.1 - Title (M)

Free text. Title of vocabulary or thesaurus (mandatory).

25.2.2 - Date type (M)

Controlled vocabulary. Select Publication.

25.2.3 - Date (M)

Date format. Date of publication.

Example

SPECIFICATIONS NOT YET RELEASED

Example of ISO compliant xml fragment:

(Can be in either MD_DataIdentification or SV_ServiceIdentification)
<gmd:dataQualityInfo>
<gmd:DQ_DataQuality>
<!--other metadata elements may be present here-->
<gmd:report>
<gmd:DQ_DomainConsistency>
<gmd:result>
<gmd:DQ_ConformanceResult>
<gmd:specification>
<gmd:CI_Citation>
<gmd:title>
<gco:CharacterString>EXAMPLE ONLY:INSPIRE Implementing rules laying down technical arrangements for the interoperability and harmonisation of orthoimagery</gco:CharacterString>
</gmd:title>
<gmd:date>
<gmd:CI_Date>
<gmd:date>
<gco:Date>2011-05-15</gco:Date>
</gmd:date>
<gmd:dateType>
<gmd:CI_DateTypeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO_19139_Schemas/resources/Codelist/ML_gmxCodelists.xml#CI_DateTypeCode"codeListValue="publication">publication
</gmd:CI_DateTypeCode>
</gmd:dateType>
</gmd:CI_Date>
</gmd:date>
</gmd:CI_Citation>

```
</gmd:specification>
<gmd:explanation>
<gco:characterString>See the referenced specification</gco:characterString>
</gmd:explanation>
<gmd:pass>
<gco:Boolean>true</gco:Boolean>
</gmd:pass>
</gmd:DQ_ConformanceResult>
</gmd:result>
</gmd:DQ_DomainConsistency>
</gmd:report>

</gmd:DQ_DataQuality>
</gmd:dataQualityInfo>
```

Elements relating to metadata

Element 26 – OAI harvesting elements (C)

Conditional element. One occurrence allowed. Controlled vocabulary.

Required for OAI harvesting into the MEDIN metadata portal. Describes the status of the resource using the ISO progress code list. See Annex 9 for list.

Example

Element 26.1 Target vocabulary

The NERC vocabulary

Target Vocab: http://vocab.ndg.nerc.ac.uk/term/N010/0:
Target code: NDGO0001

Example of ISO compliant xml fragment:

****** needs investigation******

```
<gmd:metadataExtensionInfo>
<gmd:MD_ExtendedElementInformation>
<gmd:name><gco:characterstring><gco:characterstring><gmd:name>
<gmd:MD_ExtendedElementInformation>
<gmd:metadataExtensionInfo>
</gmd:metadataExtensionInfo>
```

Element 27 - Date of update of metadata (M)

Mandatory element. One occurence allowed. Date format.

This describes the last date the metadata was updated on. This should be provided as a date in the format:

yyyy-mm-dd

Example

2008-05-12

Example of ISO compliant xml fragment:

```
<gmd:dateStamp>
<gco:Date>2009-01-26</gco:Date>
</gmd:dateStamp>
```

Element 28 - Metadata standard name (M)

Mandatory element. One occurence allowed.

Identify the metadata standard used to create the metadata.

Example

MEDIN Metadata Specification

Example of ISO compliant xml fragment:

```
<gmd:metadataStandardName>
<gco:CharacterString>MEDIN Metadata Specification</gco:CharacterString>
</gmd:metadataStandardName>
```

Element 29 - Metadata standard version (M)

Mandatory element. One occurence allowed.

Identify the version of the metadata standard used to create the metadata.

Example

Version 1.0

Example of ISO compliant xml fragment:

```
<gmd:metadataStandardVersion>
<gco:characterString>Version 1.0</gco:characterString>
</gmd:metadataStandardVersion>
```

Element 30 - Metadata language (M)

Mandatory element. Multiple metadata languages allowed. Controlled vocabulary.

Describes the language(s) elements of the metadata.

Select the relevant 3-letter code(s) from the ISO 639-2 code list of languages. Additional languages may be added to this list if required. A full list of UK language codes is listed in Annex 3 and a list of recognized languages is available online http://www.loc.gov/standards/iso639-2.

Examples

Example 1: (English)

eng

Example 2: (Welsh)

cym

Example of ISO compliant xml fragment:

<gmd:language>cym</gmd:language>

7.0 Mapping of MEDIN profile to the ISO 19115 and 19119 standard

The following table maps the MEDIN profile elements to the relevant section of the ISO 19115 UML diagrams.

Name	Path to 19115	Datasets and series	Services etc
Resource title	MD_Metadata.identificationInfo > MD_DataIdentification.citation > CI_Citation.title	M	M
Alternative resource title	MD_Metadata.identificationInfo > MD_DataIdentification.citation > CI_Citation.alternateTitle	O	O
Resource abstract	MD_Metadata.identificationInfo > MD_DataIdentification.abstract	M	M
Resource Type	MD_Metadata.hierarchyLevel	M	M
Resource locator	MD_Metadata.distributionInfo > MD_DigitalTransferOptions.onLine> CI_OnlineResource.linkage	C	C
Unique Resource Identifier	MD_Metadata.identificationInfo > MD_DataIdentification.citation > CI_Citation.identifier	M	O
Coupled resource	MD_Metadata.identificationInfo > MD_DataIdentification.OperatesOn	-	M
Resource language	MD_Metadata.identificationInfo > DataIdentification.language		
Topic category	MD_Metadata.identificationInfo > MD_DataIdentification.topicCategory	M	-
Spatial data service type	MD_Metadata.identificationInfo > SV_ServiceIdentification.ServiceType	-	M
Keywords	MD_Metadata.identificationInfo > MD_DataIdentification.descriptiveKeywords > MD_keywords.keywords &	M	M

	MD_keywords_thesaurusName > CI_Citation.title CI_Citation.date CI_Citation.datetype		
Geographic bounding box	MD_Metadata.identificationInfo > MD_DataIdentification.extent > EX_Extent > EX_GeographicBoundingBox	M	
Extent	MD_Metadata.identificationInfo > MD_DataIdentification.extent > EX_Extent >	M	
Vertical extent	MD_Metadata.identificationInfo > MD_DataIdentification.extent > EX_Extent.verticalElement > EX_VerticalExtent	C	
Temporal Reference	MD_Metadata.identificationInfo > MD_DataIdentification.extent > EX_Extent.temporalElement > EX_TemporalExtent.extent & MD_Metadata.identificationInfo > MD_DataIdentification.citation > CI_Citation.date > CI_Date.date	C	C
Lineage	MD_Metadata.dataQualityInfo > DQ_DataQuality.lineage > LI_Lineage	M	-
Spatial resolution	MD_Metadata.identificationInfo > MD_DataIdentification.spatialResolution > MD_Resolution.distance	C	C
Additional information source	MD_Metadata.identificationInfo > MD_DataIdentification.supplementalInformation > CI_Citation	O	O
INSPIRE conformity	MD_Metadata.dataQualityInfo > DQ_DataQuality.report >	C	C
Limitations on public access	MD_Metadata.identificationInfo > MD_DataIdentification.ResourceConstraints > MD_LegalConstraints.AccessConstraints > MD_RestrictionCode	M	
Conditions applying to access and use	MD_Metadata.identificationInfo > MD_DataIdentification.ResourceConstraints > MD_Constraints.useLimitation	M	
Responsibl	CI_ResponsibleParty	M must	

e party		provide minimum of Originator(s) and pointOfContact(s)	
Data format	MD_Metadata.identificationInfo > resourceFormat MD_format.name	O	O
Frequency of update	MD_Metadata.identificationInfo > MD_MaintainenceInformation.maintenanceAndUpdateFrequency > MD_MaintenanceFrequencyCode	M	M
OAI Harvesting	MD_Metadata.MetadataExtensionInfo MD_MetadataExtensionInformation		
Metadata point of contact	MD_Metadata.pointOfContact	M	M
Metadata date stamp	MD_Metadata.dateStamp	M	M
Metadata language	MD_Metadata.language	M	M
Metadata standard name	MD_Metadata.MetadataStandardName	M	M
Metadata standa1rd version	MD_Metadata. MetadataStandardVersion	M	M

Annex 1 - Changes from MDIP Schema Version 1.3

MDIP 1.3	UK GEMINI 2.2	INSPIRE	MEDIN 1.1	Element Number	Difference
Title	Title	Resource Title	Resource Title	1	Using INSPIRE element name.
Alternative title	Alternative title	-	Alternative Resource Title	2	Based on INSPIRE name for Title
Language	Dataset Language	Resource Language	Resource language	8	Using INSPIRE element name.
Abstract	Abstract	Abstract	Abstract	3	No change
Topic category	Topic category	Topic category	Topic category	9	No change
Subject	Keyword	Keywords + Originating controlling vocabulary	Keywords + Originating controlling vocabulary	11	Using INSPIRE element name and grouped with originating controlling vocabulary
Date	Date	Temporal reference	Temporal reference	16	Using INSPIRE element name. Expanded to include Temporal extent (formerly start and end date), Date of publication (formerly dataset reference date), Date of creation and Date of last update.
Dataset reference date	Dataset reference date	Temporal reference	Temporal reference	16	Incorporated into the element Temporal reference
Originator, + Distributor	Originator, + Distributor	Responsible Organisation + Metadata point of contact	Responsible party	22	Using ISO 19115 name as some resources attributable to individuals and not organizations. Grouped all responsible party information into one element.
West co-ordinate	West bounding longitude	Geographic bounding box (West bounding longitude +	Geographic bounding box (West bounding longitude +	12	Grouped coordinates into the element geographic bounding box and added an element to specify

MDIP 1.3	UK GEMINI 2.2	INSPIRE	MEDIN 1.1	Element Number	Difference
		east bounding longitude + South bounding latitude + North bounding latitude)	east bounding longitude + South bounding latitude + North bounding latitude)		the coordinate reference system of the bounding box.
East coordinate	East bounding longitude	Geographic bounding box	Geographic bounding box	12	Incorporated into the element Geographic bounding box
South coordinate	South bounding latitude	Geographic bounding box	Geographic bounding box	12	Incorporated into the element Geographic bounding box
North coordinate	North bounding latitude	Geographic bounding box	Geographic bounding box	12	Incorporated into the element Geographic bounding box
Lineage	Lineage	Lineage	Lineage	17	Change from optional to mandatory
Extent	Extent	Extent	Extent	13	Changed from optional to mandatory compared to MDIP version 1.3 and linked with Original controlling vocabulary element of INSPIRE
Vertical extent	Vertical extent information	-	Vertical extent	14	Retained sub-element Unit. Updating controlling vocabulary to allow accurate definition of marine vertical coordinate reference systems.
Spatial resolution	Spatial resolution	Spatial resolution	Spatial resolution	18	No change.
Spatial reference system			Spatial reference system	15	No change.
Spatial representation type	-	-	-	-	Dropped.
Presentation type	-	-	-	-	Dropped element.

MDIP 1.3	UK GEMINI 2.2	INSPIRE	MEDIN 1.1	Element Number	Difference
Data format	-	-	-	23	Likely to change from free text to a controlled vocabulary when agreed.
Supply Media	-	-	-	-	Dropped
Frequency of update	Frequency of update	-	Frequency of update	24	No change
Access constraint	Conditions for access and use	Conditions for access and use	Conditions for access and use	21	Using INSPIRE element name. Changed from controlled vocabulary to free text.
Use constraint	Access and use constraints	Limitations on public access	Limitations on public access	20	Using INSPIRE element name. Changed from controlled vocabulary to free text.
Additional information source	Additional information source	Additional information source	Additional information source	19	
Online resource	Resource locator	Resource locator	Resource locator	5	Using INSPIRE element name.
Browse graphic	-	-	-	-	Dropped (MEDIN to confirm)
Date of update of metadata	Date of update of metadata	Metadata date	Date of last update of metadata	27	Slight name change
Metadata standard name	Metadata Standard Name	-	Metadata standard name	28	Additional 19115 element retained by MEDIN.
Metadata standard version	Metadata Standard Version	-	Metadata standard version	29	Additional 19115 element retained by MEDIN
Metadata language	Metadata language	Metadata language	Metadata language	30	No change
Identifier	Unique resource identifier	Unique resource identifier	Unique resource identifier	6	Using INSPIRE element name.
Target	-	-	-	-	Needed for OAI harvesting of MEDIN metadata
-		Resource type	Resource type	4	Added INSPIRE element.

MDIP 1.3	UK GEMINI 2.2	INSPIRE	MEDIN 1.1	Element Number	Difference
-	Conformity	Degree	Degree of Conformity	25	Added INSPIRE element.
	Specification	Specification	Specification	26	Added INSPIRE element.
-	Coupled resource	Coupled resource	Coupled resource	7	Added INSPIRE element for services.
-	Service type	Spatial data service type	Spatial data service type	10	Added INSPIRE element for services.

Annex 2 - ISO Scope code codelist

Derived from the ISO 19115/TC 211 Geographic Information/Geomatics Metadata Standard.

Code	Name	Description
001	attribute	Information applies to the attribute value
002	attributeType	Information applies to the characteristic of the feature
003	collectionHardware	Information applies to the collection hardware class
004	collectionSession	Information applies to the collection session
005	dataset	Information applies to a single dataset.
006	series	Information applies to a group of datasets linked by a common specification.
007	nonGeographicDataset	Information applies to the non geographic dataset.
008	dimensionGroup	Information applies to a dimension group
009	feature	Information applies to a feature
010	featureType	Information applies to a feature type
011	propertyType	Information applies to a property type
012	fieldSession	Information applies to a field session
013	software	Information applies to a computer program or routine
014	service	Information applies to a facility to view, download data e.g. web service
015	model	Information applies to a copy or imitation of an existing or hypothetical object
016	tile	Information applies to a tile, a spatial subset of geographic information

Annex 3 - ISO Language codelist

Derived from the ISO ISO 639-2 Codes for Languages. Below are a number of codes relevant to the UK.

eng	English
cym	Welsh/Cymru (note do not use the code 'wel')

gle	Irish (Gaelic)
gla	Scottish (Gaelic)
cor	Cornish

More information on this code list: http://www.loc.gov/standards/iso639-2/php/English_list.php.

Annex 4 - ISO Topic category codelist

Derived from the ISO 19115/TC 211 Geographic Information/Geomatics Metadata Standard with relevant INSPIRE data themes see http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32008R1205:EN:NOT for more information.

Code	Name	Definition	INSPIRE Theme
001	Farming	Rearing of animals or cultivation of plants. For example, resources describing irrigation, aquaculture, herding, and pests and diseases affecting crops and livestock.	This category applies to Directive 2007/2/EC spatial data theme Annex III(9) Agricultural and aquaculture facilities.
002	Biota	Naturally occurring flora and fauna. For example, resources describing wildlife, biological sciences, ecology, wilderness, sea life, wetlands, and habitats.	This category applies to the following Directive 2007/2/EC spatial data themes: Annex III(17) Bio-geographical regions, Annex III(18) Habitats and biotopes, Annex III(19) Species distribution.
003	Boundaries	Legal land descriptions.	This category applies to the following Directive 2007/2/EC spatial data themes: Annex I(4) Administrative units, Annex III(1) Statistical units.
004	Climatology/Meteorology/Atmosphere	Atmospheric processes and phenomena. For example, resources describing cloud cover, weather, atmospheric conditions, climate change, and precipitation.	This category applies to the following Directive 2007/2/EC spatial data themes: Annex III(13) Atmospheric conditions, Annex III(14) Meteorological geographical features.

Code	Name	Definition	INSPIRE Theme
005	Economy	Economic activities or employment. For example, resources describing labor, revenue, commerce, industry, tourism and ecotourism, forestry, fisheries, commercial or subsistence hunting, and exploration and exploitation of resources such as minerals, oil, and gas.	This category applies to the following Directive 2007/2/EC spatial data themes: Annex III(20) Energy resources, Annex III(21) Mineral resources.
006	Elevation	Height above or below sea level. For example, resources describing altitude, bathymetry, digital elevation models, slope, and products derived from this information.	This category applies to the following Directive 2007/2/EC spatial data theme: Annex II(1) Elevation.
007	Environment	Environmental resources, protection, and conservation. For example, resources describing pollution, waste storage and treatment, environmental impact assessment, environmental risk, and nature reserves.	This category applies to the following Directive 2007/2/EC spatial data theme: Annex I(9) Protected sites.
008	Geoscientific Information	Earth sciences. For example, resources describing geophysical features and processes, minerals, the composition, structure and origin of the earth’s rocks, earthquakes, volcanic activity, landslides, gravity information, soils, permafrost, hydrogeology, and erosion.	This category applies to the following Directive 2007/2/EC spatial data themes: Annex III(3) Soil , Annex II(4) Geology, Annex III(12) Natural risk zones.
009	Health	Health services, human ecology, and safety. For example, resources describing human disease and illness, factors affecting health, hygiene, mental and physical health, substance abuse, and health services.	This category applies to the following Directive 2007/2/EC spatial data theme: Annex III(5) Human health and safety.

Code	Name	Definition	INSPIRE Theme
010	Imagery/Base Maps/Earth Cover	Base maps. For example, resources describing land cover, topographic maps, and classified and unclassified images.	This category applies to the following Directive 2007/2/EC spatial data themes: Annex II(3) Orthoimagery, Annex II(2) Land cover.
011	Intelligence/Military	Military bases, structures, and activities. For example, resources describing barracks, training grounds, military transportation, and information collection.	This category does not apply specifically to any Directive 2007/2/EC spatial data themes.
012	Inland Waters	Inland water features, drainage systems, and their characteristics. For example, resources describing rivers and glaciers, salt lakes, water use plans, dams, currents, floods, water quality, and hydrographic charts.	This category applies to the following Directive 2007/2/EC spatial data theme: Annex I(8) Hydrography.
013	Location	Positional information and services. For example, resources describing addresses, geodetic networks, postal zones and services, control points, and place names.	This category applies to the following Directive 2007/2/EC spatial data themes: Annex I(3) Geographical names, Annex I(5) Addresses.
014	Oceans	Features and characteristics of salt water bodies excluding inland waters. For example, resources describing tides, tidal waves, coastal information, and reefs.	This category applies to the following Directive 2007/2/EC spatial data themes: Annex III(16) Sea regions, Annex III(15) Oceanographic geographical features.

Code	Name	Definition	INSPIRE Theme
015	Planning Cadastre	Land use. For example, resources describing zoning maps, cadastral surveys, and land ownership.	This category applies to the following Directive 2007/2/EC spatial data themes: Annex I(6) Cadastral parcels, Annex III(4) Land use, Annex III(11) Area management/restriction/regulation zones & reporting units.
016	Society	Characteristics of societies and cultures. For example, resources describing natural settlements, anthropology, archaeology, education, traditional beliefs, manners and customs, demographic data, crime and justice, recreational areas and activities, social impact assessments, and census information.	This category applies to the following Directive 2007/2/EC spatial data themes: Annex III(10) Population distribution – demography.
017	Structure	Man-made construction. For example, resources describing buildings, museums, churches, factories, housing, monuments, and towers.	This category applies to the following Directive 2007/2/EC spatial data themes: Annex III(2) Buildings, Annex III(8) Production and industrial facilities, Annex III(7) Environmental monitoring facilities.
018	Transportation	Means and aids for conveying people and goods. For example, resources describing roads, airports and airstrips, shipping routes, tunnels, nautical charts, vehicle or vessel location, aeronautical charts, and railways.	This category applies to the following Directive 2007/2/EC spatial data theme: Annex I(7) Transport networks.
019	Utilities/Communications	Energy, water and waste systems, and communications infrastructure and services. For example, resources	This category applies to the following Directive 2007/2/EC

Code	Name	Definition	INSPIRE Theme
		describing hydroelectricity, geothermal, solar, and nuclear sources of energy, water purification and distribution, sewage collection and disposal, electricity and gas distribution, data communication, telecommunication, radio, and communication networks.	spatial data theme: Annex III(6) Utility and governmental services.

Annex 5 – Inspire Service type codelist

Code list from ISO 19119 adapted by INSPIRE for the classification of service types. See INSPIRE for more information http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32008R1205:EN:NOT.

Code	Name
1	Discovery
2	View
3	Download
4	Transformation
5	Invoke Spatial Data
6	Other

Annex 6 - ISO Restriction codelist

Derived from the ISO 19115/TC 211 Geographic Information/Geomatics Metadata Standard.

Code	Name	Description
001	copyright	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
002	patent	Government has granted exclusive right to make, sell, use or license an invention or discovery.
003	patentPending	Produced or sold information awaiting a patent.
004	trademark	A name, symbol, or other device identifying a product, officially registered and legally restricted to the use of the owner or manufacturer.
005	licence	Formal permission to do something.
006	intellectualPropertyRights	Rights to financial benefit from and control of distribution of non-tangible property that is a result of creativity.
007	restricted	Withheld from general circulation or disclosure.

Code	Name	Description
008	otherRestrictions	Limitation not listed.

Annex 7 - ISO Responsible party codelist

Derived from the ISO 19115/TC 211 Geographic Information/Geomatics Metadata Standard.

Code	Name	Description
001	resourceProvider	Party that supplies the resource.
002	custodian	Party that accepts accountability and responsibility for the data and ensures appropriate care and maintenance of the resource.
003	owner	Party that owns the resource.
004	user	Party who uses the resource.
005	distributor	Party that distributes the resource.
006	originator	Party who created the resource.
007	pointOfContact	Party who can be contacted for acquiring knowledge about or acquisition of the resource.
008	principalInvestigator	Key party responsible for gathering information and conducting research.

Code	Name	Description
009	processor	Party who has processed the data in a manner such that the resource has been modified.
010	publisher	Party who published the resource.
011	author	Party who authored the resource.

Annex 8 - ISO Frequency of maintainence codelist

Derived from the ISO 19115/TC 211 Geographic Information/Geomatics Metadata Standard

Code	Name	Description
001	continual	Data is repeatedly and frequently updated
002	daily	Data is updated each day
003	weekly	Data is updated on a weekly basis
004	fortnightly	Data is updated every two weeks
005	monthly	Data is updated each month
006	quarterly	Data is updated every three months
007	biannually	Data is updated twice each year
008	annually	Data is updated every year
009	as needed	Data is updated as deemed necessary
010	irregular	Data is updated at intervals that are uneven in duration
011	not planned	There are no plans to update the data
012	unknown	Frequency of maintenance for the data is not known