



# **OpenAIRE Interoperability Guidelines for Literature Repository Managers**

*Release 4.0.0*

**OpenAIRE Guidelines Team**

**Nov 30, 2018**

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### 1.1 Aim

The OpenAIRE Guidelines for Literature Repository Managers 4.0 provide orientation for repository managers to define and implement their local data management policies according to the requirements of the [OpenAIRE - Open Access Infrastructure for Research in Europe](#)<sup>1</sup>.

The OpenAIRE Guidelines were established to support the [Open Access strategy of the European Commission](#)<sup>2</sup> and to meet requirements of the OpenAIRE infrastructure. This new version of the Guidelines, according to the expansion of the aims of the OpenAIRE initiative and its infrastructure, has a broader scope. In fact, these Guidelines are intended to guide repository manager to expose to the OpenAIRE infrastructure **open access and non-open access publications** together with **funding information**, where applicable.

By implementing these Guidelines, repository managers will not only be enabling authors who deposit publications in their repository to fulfill the EC Open Access requirements, and eventually also the requirements of other (national or international) funders with whom OpenAIRE cooperates, but also incorporating their publications into the OpenAIRE infrastructure for discoverability and utilizing value-added services provided by the OpenAIRE portal.

The OpenAIRE Guidelines for Literature Repository Managers 4.0 are part of a set of OpenAIRE Guidelines that also include the OpenAIRE Guidelines for Data Archive Managers, the OpenAIRE Guidelines for CRIS managers, the OpenAIRE Guidelines for Software Repository Managers, and the Guidelines for Other Research Products Repository Managers.

### 1.2 What's new

In comparison with previous versions of the Guidelines, this version introduces the following major changes:

- an application profile and schema based on Dublin Core and DataCite incl. a new OAI-metadataPrefix
- support of identifier schemes for authors, organizations, funders, scholarly resources
- introduction of COAR Controlled Vocabularies
- compliance with the [OpenAIRE Content Acquisition Policy](#)<sup>3</sup>, published on 05-Oct-2018.

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<sup>1</sup> <http://www.openaire.eu>

<sup>2</sup> <http://ec.europa.eu/research/openscience/index.cfm?pg=openaccess>

<sup>3</sup> <https://doi.org/10.5281/zenodo.1446407>

## 1.3 How this document is structured

Chapter two provides a brief overview of how to configure and use OAI-PMH for OpenAIRE metadata harvesting. Chapter three describes the application profile. It assigns properties from Dublin Core and DataCite metadata schemes to OpenAIRE fields. Each OpenAIRE field is described in detail by

- the name of the field
- how it is mapped to an element in such metadata schemes
- the cardinality of the field
- definition and usage instructions with regard to allowed values in properties, sub-properties and attributes
- example(s)

## 1.4 Acknowledgements & Contributors

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## 1.5 Versions

- 4.0, November 2018 [doi:10.5281/zenodo.1299203](https://doi.org/10.5281/zenodo.1299203)<sup>4</sup>
- 4.0 draft, November 2017

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<sup>4</sup> <http://dx.doi.org/10.5281/zenodo.1299203>

- 3.0, April 2013 [doi:10.5281/zenodo.1487968](https://doi.org/10.5281/zenodo.1487968)<sup>5</sup>
- 3.0, beta December 2012
  - The OpenAIRE OAI set has been renamed from `ec_fundedresources` to `openaire`.
  - New relation elements for indicating external identifiers, references and connections to datasets.
- 2.0, October 2012 [doi:10.5281/zenodo.59208](https://doi.org/10.5281/zenodo.59208)<sup>6</sup>
  - Compatibility for aggregators; extended Namespace for Project Identification
- 1.1, November 2010 [doi:10.5281/zenodo.59206](https://doi.org/10.5281/zenodo.59206)<sup>7</sup>
  - Correction of names and references; addition of license and version statement
- 1.0, July 2010 [doi:10.5281/zenodo.59204](https://doi.org/10.5281/zenodo.59204)<sup>8</sup>
  - Initial document

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<sup>5</sup> <http://dx.doi.org/10.5281/zenodo.1487968>

<sup>6</sup> <http://dx.doi.org/10.5281/zenodo.59208>

<sup>7</sup> <http://dx.doi.org/10.5281/zenodo.59206>

<sup>8</sup> <http://dx.doi.org/10.5281/zenodo.59204>

# CHAPTER 2

## Use of OAI-PMH

OpenAIRE supports a number of transfer protocols and interfaces for collecting bibliographic metadata. The usage of one of the major protocols, [OAI-PMH v2.0 protocol](#)<sup>9</sup>, in the context of these Guidelines and its application profile is described below.

### 2.1 Metadata Format

OpenAIRE expects metadata to be encoded following the metadata format defined in the OpenAIRE Application Profile. The recommended metadataPrefix is `oai_openaire`. For information on how to use the individual properties, please refer to the section *Application Profile Overview*.

### 2.2 Metadata Content

OpenAIRE collects metadata of scientific products according to the OpenAIRE Content Acquisition Policy published at <https://doi.org/10.5281/zenodo.1446407>. This includes bibliographic metadata describing open access and non open access items.

### 2.3 Compatibility of Aggregators

Besides individual repositories and journals, also aggregators (e.g., on the national level) can become OpenAIRE compatible. In this case, additional provenance information on the original content providers harvested by such an aggregator has to be encoded for OpenAIRE on the metadata record level. In accordance with the [OAI-PMH guidelines](#)<sup>10</sup>, the provenance information has to be provided in the `about` node element of an OAI record, as displayed in the following example:

```
<about>
  <provenance xmlns="http://www.openarchives.org/OAI/2.0/provenance"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="http://www.openarchives.org/OAI/2.0/provenance
      http://www.openarchives.org/OAI/2.0/provenance.xsd">
```

(continues on next page)

<sup>9</sup> <http://www.openarchives.org/OAI/openarchivesprotocol.html>

<sup>10</sup> <http://www.openarchives.org/OAI/2.0/guidelines-provenance.htm>

(continued from previous page)

```

6   <originDescription altered="true" harvestDate="2012-09-17T14:58:36Z">
7     <baseURL>http://dspace.library.uu.nl:8080/dspace-oai/request</baseURL>
8     <identifier>oai:dspace.library.uu.nl:1874/218065</identifier>
9     <timestamp>2012-01-19T12:38:56Z</timestamp>
10    <metadataNamespace>
11      http://www.openarchives.org/OAI/2.0/oai_dc/
12    </metadataNamespace>
13  </originDescription>
14  </provenance>
15 </about>

```

This means information encoded in the following elements is expected (taken from <https://www.openarchives.org/OAI/2.0/guidelines-provenance.htm>):

- baseURL - the baseURL of the originating repository from which the metadata record was harvested.
- identifier - the unique identifier of the item in the originating repository from which the metadata record was disseminated.
- timestamp - the timestamp of the metadata record disseminated by the originating repository.
- metadataNamespace - the XML namespace URI of the metadata format of the record harvested from the originating repository.
- originDescription - an optional originDescription block which was that obtained when the metadata record was harvested. A set of nested originDescription blocks will describe provenance over a sequence of harvests.

Each originDescription must also have the following two attributes which relate to the act of harvesting and any subsequent processing:

- harvestDate - the responseDate of the OAI-PMH response that resulted in the record being harvested from the originating repository.
- altered - a boolean value which must be true if the harvested record was altered before being disseminated again.

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## Application Profile Overview

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The properties of the Application Profile for OpenAIRE Literature Repository Guidelines are listed in this section. The following requirement levels for the metadata properties are used:

**Mandatory (M)** The property must always be present in the metadata. An empty value for the property is not allowed.

**Mandatory if Applicable (MA)** When the property value can be obtained it must be present in the metadata

**Recommended (R)** The use of the property is recommended

**Optional (O)** It is not important whether the property is used or not, but if used it may provide complementary information about the resource

This documentation uses the following namespace abbreviations:

- dc: <http://purl.org/dc/elements/1.1/>
- dcterms: <http://purl.org/dc/terms/>
- datacite: <http://datacite.org/schema/kernel-4>
- oaire: <http://namespace.openaire.eu/schema/oaire/>

OpenAIRE-Field	Metadata Element	Refinement by Vocabulary
<i>Title (M)</i>	datacite:title	title type
<i>Creator (M)</i>	datacite:creator	name type
<i>Contributor (MA)</i>	datacite:contributor	name type contributor type
<i>Funding Reference (MA)</i>	oaire:fundingReference	funderIdentifier type
<i>Alternate Identifier (R)</i>	datacite:alternateIdentifier	alternateIdentifier type
<i>Related Identifier (R)</i>	datacite:relatedIdentifier	relatedIdentifier type relation type resourcetype general
<i>Embargo Period Date (MA)</i>	datacite:date	date type
<i>Language (MA)</i>	dc:language	IETF BCP 47 <sup>11</sup> , ISO 639-3 <sup>12</sup>

Continued on next page



Table 1 – continued from previous page

OpenAIRE-Field	Metadata Element	Refinement by Vocabulary
<i>Publisher (MA)</i>	dc:publisher	
<i>Publication Date (M)</i>	datacite:date	date type
<i>Resource Type (M)</i>	oaire:resourceType	COAR Resource Type Vocabulary <sup>13</sup>
<i>Description (MA)</i>	dc:description	
<i>Format (R)</i>	dc:format	
<i>Resource Identifier (M)</i>	datacite:identifier	identifier type
<i>Access Rights (M)</i>	datacite:rights	COAR Access Right Vocabulary <sup>14</sup>
<i>Source (R)</i>	dc:source	
<i>Subject (MA)</i>	datacite:subject	
<i>License Condition (R)</i>	oaire:licenseCondition	
<i>Coverage (R)</i>	dc:coverage	
<i>Size (O)</i>	datacite:size	
<i>Geo Location (O)</i>	datacite:geoLocation	
<i>Resource Version (R)</i>	oaire:version	COAR Version Vocabulary <sup>15</sup>
<i>File Location (MA)</i>	oaire:file	
<i>Citation Title (R)</i>	oaire:citationTitle	
<i>Citation Volume (R)</i>	oaire:citationVolume	
<i>Citation Issue (R)</i>	oaire:citationIssue	
<i>Citation Start Page (R)</i>	oaire:citationStartPage	
<i>Citation End Page (R)</i>	oaire:citationEndPage	
<i>Citation Edition (R)</i>	oaire:citationEdition	
<i>Citation Conference Place (R)</i>	oaire:citationConferencePlace	
<i>Citation Conference Date (R)</i>	oaire:citationConferenceDate	
<i>Audience (O)</i>	dcterms:audience	

The application profile is implemented in XML Schema. The files<sup>16</sup> for the application profile and sample XML files<sup>17</sup> are part of these Guidelines and also available on the [GitHub repository](#)<sup>18</sup>.

In the XML metadata documents the schema must be declared as follows:

```

1 <resource xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
2   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
3   xmlns:dc="http://purl.org/dc/elements/1.1/"
4   xmlns:dcterms="http://purl.org/dc/terms/"
5   xmlns:datacite="http://datacite.org/schema/kernel-4"
6   xmlns="http://namespace.openaire.eu/schema/oaire/"
7   xsi:schemaLocation="http://namespace.openaire.eu/schema/oaire/ https://www.
  ↪openaire.eu/schema/repo-lit/4.0/openaire.xsd">

```

## 3.1 Title (M)

datacite:title

### 3.1.1 Cardinality

#### Mandatory

<sup>11</sup> <http://tools.ietf.org/rfc/bcp/bcp47.txt>

<sup>12</sup> <https://iso639-3.sil.org/>

<sup>13</sup> [http://vocabularies.coar-repositories.org/documentation/resource\\_types/](http://vocabularies.coar-repositories.org/documentation/resource_types/)

<sup>14</sup> [http://vocabularies.coar-repositories.org/documentation/access\\_rights/](http://vocabularies.coar-repositories.org/documentation/access_rights/)

<sup>15</sup> [http://vocabularies.coar-repositories.org/documentation/version\\_types/](http://vocabularies.coar-repositories.org/documentation/version_types/)

<sup>16</sup> <https://github.com/openaire/guidelines-literature-repositories/tree/master/schemas>

<sup>17</sup> <https://github.com/openaire/guidelines-literature-repositories/tree/master/samples>

<sup>18</sup> <https://github.com/openaire/guidelines-literature-repositories>

*Occurrence: 1-n*

### 3.1.2 Definition and Usage Instruction

A name or title by which a resource is known.

#### Allowed values, examples, other constraints

Free text.

#### Remarks

- adapted from [DataCite MetadataKernel](https://schema.datacite.org/meta/kernel-4.1/)<sup>19</sup> v4.1

#### Property title (M, 1-n)

Use the title name as value. Repeat this property for different title types or title languages.

#### Attribute lang (O)

The language of the title (occurrence: 0-1)

Use the `xml:lang` attribute to indicate the language of the title. The value of the attribute should be chosen from IETF BCP 47, the [IANA Language Subtag Registry](https://www.iana.org/assignments/language-subtag-registry)<sup>20</sup>.

#### Attribute titleType (O)

The type of Title (occurrences: 0-1).

#### Allowed values, examples, other constraints

*Controlled List Values:*

- AlternativeTitle
- Subtitle
- TranslatedTitle
- Other

### 3.1.3 Example

```
1 <datacite:title xml:lang="en-US">
2   National Institute for Environmental Studies and Center
3   for Climate System Research Japan
4 </datacite:title>
5 <datacite:title xml:lang="en-US" titleType="Subtitle">A survey</datacite:title>
```

## 3.2 Creator (M)

`datacite:creator`

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<sup>19</sup> [http://schema.datacite.org/meta/kernel-4.1/](https://schema.datacite.org/meta/kernel-4.1/)

<sup>20</sup> [http://www.iana.org/assignments/language-subtag-registry](https://www.iana.org/assignments/language-subtag-registry)

### 3.2.1 Cardinality

*Mandatory*

*Occurrence: 1-n*

### 3.2.2 Definition and Usage Instruction

The authors of the publication in priority order. May be a corporate/institutional or personal name.

#### Do Not Confuse With

- *Contributor (MA)*
- *Publisher (MA)*

#### Remarks

- adapted from [DataCite MetadataKernel<sup>21</sup>](#) v4.1

#### Property creator (M, 1-n)

##### Subproperty creatorName (M)

The name of the author (occurrence: 1). The format should be: family, given. Non-roman names may be transliterated according to the [ALA-LC<sup>22</sup>](#) schemas.

##### Attribute nameType (R)

The type of name (occurrence: 0-1).

*Controlled list values*

- Organizational
- Personal

##### Subproperty givenName (R)

The personal or first name of the author.

##### Subproperty familyName (R)

The surname or last name of the author.

##### Subproperty nameIdentifier (R)

Uniquely identifies an individual or legal entity, according to various schemes (occurrences: 0-n). The format is dependent upon scheme.

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**Note:** OpenAIRE recommends including a nameIdentifier such as an ORCID or a ISNI if available.

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<sup>21</sup> <http://schema.datacite.org/meta/kernel-4.1/>

<sup>22</sup> <http://www.loc.gov/catdir/cpsd/roman.html>

**Attribute nameIdentifierScheme (M)**

The name of the name identifier scheme (occurrence: 1). Mandatory if nameIdentifier is used.

**Attribute schemeURI (R)**

The URI of the name identifier scheme (occurrence: 0-1).

**Subproperty affiliation (R)**

The organizational or institutional affiliation of the creator (occurrence: 0-n).

### 3.2.3 Example

```
1 <datacite:creators>
2   <datacite:creator>
3     <datacite:creatorName>Evans, R.J.</datacite:creatorName>
4     <datacite:affiliation>Institute of Science and Technology</
↪ datacite:affiliation>
5     <datacite:nameIdentifier nameIdentifierScheme="ORCID"
6       schemeURI="http://orcid.org">
7       1234-1234-1234-1234
8     </datacite:nameIdentifier>
9   </datacite:creator>
10 </datacite:creators>
```

## 3.3 Contributor (MA)

datacite:contributor

### 3.3.1 Cardinality

*Mandatory if applicable*

*Occurrence: 0-n*

### 3.3.2 Definition and Usage Instruction

The institution or person responsible for collecting, managing, distributing, or otherwise contributing to the development of the resource.

**Do Not Confuse With**

- *Publisher (MA)*
- *Creator (M)*
- *Funding Reference (MA)*

**Remarks**

- adapted from [DataCite MetadataKernel](http://schema.datacite.org/meta/kernel-4.1/)<sup>23</sup> v4.1

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<sup>23</sup> <http://schema.datacite.org/meta/kernel-4.1/>

### Property contributor (MA, 0-n)

#### Attribute contributorType (M)

The type of contributor of the resource (occurrence: 1). Mandatory if *contributor* is used.

*Controlled list values*

- ContactPerson
- DataCollector
- DataCurator
- DataManager
- Distributor
- Editor
- HostingInstitution
- Producer
- ProjectLeader
- ProjectManager
- ProjectMember
- RegistrationAgency
- RegistrationAuthority
- RelatedPerson
- Researcher
- ResearchGroup
- RightsHolder
- Sponsor
- Supervisor
- WorkPackageLeader
- Other

#### Subproperty contributorName (M)

The name of the contributor (occurrence: 1). Mandatory if *Contributor* is used.

#### Attribute nameType (R)

The type of name (occurrence: 0-1).

*Controlled list values*

- Organizational
- Personal

#### Subproperty familyName (O)

The surname or last name of the contributor (occurrence: 0-1).

### Subproperty givenName (O)

The personal or first name of the contributor (occurrence: 0-1).

### Subproperty nameIdentifier (R)

Uniquely identifies an individual or legal entity, according to various schemes (occurrence: 0-n).

### Attribute nameIdentifierScheme (M)

The name of the name identifier scheme (occurrence: 1). Mandatory if *nameIdentifier* is used.

### Attribute schemeURI (R)

The URI of the name identifier scheme (occurrence: 0-1).

### Subproperty affiliation (R)

The organisational or institutional affiliation of the contributor.

## 3.3.3 Example

```
1 <datacite:contributors>
2   <datacite:contributor>
3     <datacite:contributorName>Evans, R. J.</datacite:contributorName>
4   <datacite:contributor>
5     <datacite:contributor>
6       <datacite:contributorName>International Human Genome Sequencing
↵ Consortium</datacite:contributorName>
7     </datacite:contributor>
8   </datacite:contributor>
```

## 3.4 Funding Reference (MA)

oaire:fundingReference

### 3.4.1 Cardinality

*Mandatory if applicable*

*Occurrence: 0-n*

### 3.4.2 Definition and Usage Instruction

Information about financial support (funding) for the resource being registered.

#### Usage Instruction

An authoritative list of projects is exposed by OpenAIRE through [OAI-PMH<sup>24</sup>](http://api.openaire.eu) and [REST<sup>25</sup>](http://api.openaire.eu) as documented at <http://api.openaire.eu>, and available for all repository managers. Values include the project name and project ID. The projectID equals the Grant Agreement identifier or Award number.

**Remarks**

- introduced as `info:eu-repo/grantAgreement` in previous versions of the OpenAIRE Guidelines
- adopting `fundingReference` element and subproperties from DataCite MetadataKernel v4.1 which replaces the `info:eu-repo/grantAgreement` syntax.
- adding subproperty `fundingStream` to this application profile

**Property `fundingReference` (MA, 0-n)**

Repeat this property to indicate several different funders and projects.

**Subproperty `funderName` (M)**

Name of the funding provider (occurrence: 1). Mandatory if *FundingReference* is used.

**Subproperty `funderIdentifier` (R)**

Unique identifier of the funding entity (occurrence: 0-1).

**Attribute `funderIdentifiertype` (R)**

Type of the unique identifier of the funding entity (occurrence: 0-1).

*Controlled list values*

- ISNI
- GRID
- Crossref Funder

see also [Crossref Funder Registry<sup>26</sup>](http://fundref.org/services/funder-registry)

**Subproperty `fundingStream` (O)**

Name of the funding stream (optional) (occurrence: 0-1).

**Subproperty `awardNumber` (MA)**

Project `grantId` or `awardNumber` (occurrence: 1).

**Attribute `awardURI` (R)**

URI of the project landing page provided by the funder for more information about the award (grant) (occurrence: 0-1).

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<sup>24</sup> [http://api.openaire.eu/oai\\_pmh?verb=ListRecords&set=projects&metadataPrefix=oaf](http://api.openaire.eu/oai_pmh?verb=ListRecords&set=projects&metadataPrefix=oaf)

<sup>25</sup> <http://api.openaire.eu/search/projects>

<sup>26</sup> <http://fundref.org/services/funder-registry>

### Subproperty awardTitle (R)

Title of the project, award or grant (occurrence: 0-1).

## 3.4.3 Example

An example utilizing all fields:

```

1 <oaire:fundingReferences>
2   <oaire:fundingReference>
3     <oaire:funderName>European Commission</datacite:funderName>
4     <oaire:funderIdentifier funderIdentifierType="Crossref Funder ID">http://doi.org/
↪ 10.13039/100010661</oaire:funderIdentifier>
5     <oaire:fundingStream>Horizon 2020 Framework Programme</oaire:fundingStream>
6     <oaire:awardNumber awardURI="http://cordis.europa.eu/project/rcn/194062_en.html">
↪ 643410</oaire:awardNumber>
7     <oaire:awardTitle>Open Access Infrastructure for Research in Europe 2020</
↪ oaire:awardTitle>
8   </oaire:fundingReference>
9 </oaire:fundingReferences>

```

## 3.5 Alternate Identifier (R)

datacite:alternateIdentifier

### 3.5.1 Cardinality

*Recommended*

*Occurrence: 0-n*

### 3.5.2 Definition and Usage Instruction

An identifier or identifiers other than the primary Identifier applied to the resource being registered. This may be any alphanumeric string which is unique within its domain of issue. May be used for local identifiers. AlternateIdentifier should be used for another identifier of the same instance (same location, same file).

#### Remarks

- adapted from [DataCite MetadataKernel<sup>27</sup>](https://datacite.org/docs/DataCite_Metadata_Kernel_v4.1) v4.1

### Property alternateIdentifier (R, 0-n)

Value of the alternate identifier.

### Attribute alternateIdentifierType (M)

The type of the AlternateIdentifier (occurrence: 1). Mandatory if *AlternateIdentifier* is used.

The type value is *suggested* in the following list:

*Controlled list values*

- ARK – Archival Resource Key

<sup>27</sup> <http://schema.datacite.org/meta/kernel-4.1/>



- `arXiv` – arXiv.org identifier
- `bibcode` – Astrophysics Data System bibliographic codes; bibcodes can be resolved via <http://adsabs.harvard.edu/abs/bibcode>
- `DOI` – Digital Object Identifier
- `EAN13` – European Article Number, now renamed International Article Number, but retaining the original acronym, is a 13-digit barcoding standard which is a superset of the original 12-digit Universal Product Code (UPC) system.
- `EISSN` – International Standard Serial Number (electronic Version)
- `Handle` – Handle
- `IGSN` – International Geo Sample Number; a 9-digit alphanumeric code that uniquely identifies samples from our natural environment and related sampling features.
- `ISBN` – International Standard Book Number
- `ISSN` – International Standard Serial Number; a unique 8-digit number used to identify a print or electronic periodical publication.
- `ISTC` – International Standard Text Code; a unique “number” assigned to a textual work. An ISTC consists of 16 numbers and/or letters.
- `LISSN` – The linking ISSN or ISSN-L enables collocation or linking among different media versions of a continuing resource.
- `LSID` – Life Science Identifiers; a unique identifier for data in the Life Science domain. Format: [urn:lsid:authority:namespace:identifier:revision](#)
- `PISSN` – International Standard Serial Number (print version)
- `PMID` – PubMed ID
- `PURL` – Persistent Uniform Resource Locator
- `UPC` – Universal Product Code is a barcode symbology used for tracking trade items in stores. Its most common form, the UPC-A, consists of 12 numerical digits.
- `URL` – Uniform Resource Locator
- `URN` – Uniform Resource Name
- `WOS` – Web of Science accession number

### 3.5.3 Example

```

1 <datacite:alternateIdentifiers>
2   <datacite:alternateIdentifier alternateIdentifierType="URL">http://someUrl</
3   <datacite:alternateIdentifier>
   </datacite:alternateIdentifiers>

```

## 3.6 Related Identifier (R)

`datacite:relatedIdentifier`

### 3.6.1 Cardinality

*Recommended*

*Occurrence: 0-n*

### 3.6.2 Definition and Usage Instruction

An identifier of a related resource other than the primary Identifier applied to the resource being registered.

#### Remarks

- adapted from [DataCite MetadataKernel](http://schema.datacite.org/meta/kernel-4.1/)<sup>28</sup> v4.1

#### Property relatedIdentifier (R, 0-n)

Use the related identifier as value. Repeat this property for each related identifier.

#### Attribute relatedIdentifierType (M)

The type of the RelatedIdentifier (occurrence: 1). Mandatory if *RelatedIdentifier* is used.

##### *Controlled list values*

- ARK – Archival Resource Key
- arXiv – arXiv.org identifier
- bibcode – Astrophysics Data System bibliographic codes; bibcodes can be resolved via <http://adsabs.harvard.edu/abs/bibcode>
- DOI – Digital Object Identifier
- EAN13 – European Article Number, now renamed International Article Number, but retaining the original acronym, is a 13-digit barcoding standard which is a superset of the original 12-digit Universal Product Code (UPC) system.
- EISSN – International Standard Serial Number (electronic Version)
- Handle – Handle
- IGSN – International Geo Sample Number; a 9-digit alphanumeric code that uniquely identifies samples from our natural environment and related sampling features.
- ISBN – International Standard Book Number
- ISSN – International Standard Serial Number; a unique 8-digit number used to identify a print or electronic periodical publication.
- ISTC – International Standard Text Code; a unique “number” assigned to a textual work. An ISTC consists of 16 numbers and/or letters.
- LISSN – The linking ISSN or ISSN-L enables collocation or linking among different media versions of a continuing resource.
- LSID – Life Science Identifiers; a unique identifier for data in the Life Science domain. Format: [urn:lsid:authority:namespace:identifier:revision](http://orcid.org/urn:lsid:authority:namespace:identifier:revision)
- PISSN – International Standard Serial Number (print version)
- PMID – PubMed ID
- PURL – Persistent Uniform Resource Locator
- UPC – Universal Product Code is a barcode symbology used for tracking trade items in stores. Its most common form, the UPC-A, consists of 12 numerical digits.
- URL – Uniform Resource Locator
- URN – Uniform Resource Name
- WOS – Web of Science accession number

---

<sup>28</sup> <http://schema.datacite.org/meta/kernel-4.1/>

### Attribute relationType (M)

Description of the relationship of the resource being registered (A) and the related resource (B) (occurrence: 1). Mandatory if *RelatedIdentifier* is used.

#### *Controlled list values*

- *IsCitedBy* (indicates that B includes A in a citation)
- *Cites* (indicates that A includes B in a citation)
- *IsSupplementTo* (indicates that A is a supplement to B)
- *IsSupplementedBy* (indicates that B is a supplement to A)
- *IsContinuedBy* (indicates A is continued by the work B)
- *Continues* (indicates A is a continuation of the work B)
- *IsDescribedBy* (indicates A is described by B)
- *Describes* (indicates A describes B)
- *HasMetadata* (indicates resource A has additional metadata B)
- *IsMetadataFor* (indicates additional metadata A for a resource B)
- *HasVersion* (indicates A has a version B)
- *IsVersionOf* (indicates A is a version of B)
- *IsNewVersionOf* (indicates A is a new edition of B, where the new edition has been modified or updated)
- *IsPreviousVersionOf* (indicates A is a previous edition of B)
- *IsPartOf* (indicates A is a portion of B; may be used for elements of a series)
- *HasPart* (indicates A includes the part B)
- *IsReferencedBy* (indicates A is used as a source of information by B)
- *References* (indicates B is used as a source of information for A)
- *IsDocumentedBy* (indicates B is documentation about/explaining A)
- *Documents* (indicates A is documentation about/explaining B)
- *IsCompiledBy* (indicates B is used to compile or create A)
- *Compiles* (indicates B is the result of a compile or creation event using A)
- *IsVariantFormOf* (indicates A is a variant or different form of B, e.g. calculated or calibrated form or different packaging)
- *IsOriginalFormOf* (indicates A is the original form of B)
- *IsIdenticalTo* (indicates that A is identical to B, for use when there is a need to register two separate instances of the same resource)
- *IsReviewedBy* (indicates that A is reviewed by B)
- *Reviews* (indicates that A is a review of B)
- *IsDerivedFrom* (indicates B is a source upon which A is based)
- *IsSourceOf* (indicates A is a source upon which B is based)
- *IsRequiredBy* (indicates A is required by B)
- *Requires* (indicates A requires B)

### Attribute relatedMetadataScheme (O)

The name of the scheme (occurrences: 0-1).

#### Allowed values, examples, other constraints

Use only with this relation pair: (HasMetadata/IsMetadataFor).

### Attribute schemeURI (O)

The URI of the relatedMetadataScheme (occurrences: 0-1).

#### Allowed values, examples, other constraints

Use only with this relation pair: (HasMetadata/IsMetadataFor).

### Attribute schemeType (O)

The type of the relatedMetadataScheme, linked with the schemeURI (occurrences: 0-1).

#### Allowed values, examples, other constraints

Use only with this relation pair: (HasMetadata/IsMetadataFor).

Examples: XSD, DDT, Turtle

### Attribute resourceTypeGeneral (O)

The general type of the related resource (occurrences: 0-1).

*Controlled list values*

- Audiovisual
- Collection
- DataPaper
- Dataset
- Event
- Image
- InteractiveResource
- Model
- PhysicalObject
- Service
- Software
- Sound
- Text
- Workflow
- Other

## 3.6.3 Example

```

1 <datacite:relatedIdentifiers>
2   <datacite:relatedIdentifier relatedIdentifierType="URL" relationType="HasPart">
3     ↪http://someUrl</datacite:relatedIdentifier>
  </datacite:relatedIdentifiers>

```

## 3.7 Embargo Period Date (MA)

datacite:date

### 3.7.1 Cardinality

*Mandatory if applicable*

*Occurrence: 2*

### 3.7.2 Definition and Usage Instruction

Dates relevant to describe an embargo period.

A date associated with an event in the life cycle of the resource. Typically, Date will be associated with the creation or availability of the resource. Recommended best practice for encoding the date value is defined in a profile of ISO 8601 [W3CDTF] and follows the YYYY-MM-DD format.

#### Remarks

- introduced as `info:eu-repo/date/embargoEnd/[YYYY-MM-DD]`<sup>29</sup> in previous versions of the OpenAIRE Guidelines
- this version of the application profile adopts the *Date* element in combination with *dateType* attributes from DataCite Metadata Kernel v4.1 which replaces the `info:eu-repo/date/EmbargoEnd` syntax.

When *Access Rights (M)* is set to:

```

<datacite:rights uri="http://purl.org/coar/access_right/c_flcf">embargoed access</
  ↪<datacite:rights>

```

the start and end date of the embargo period must be provided.

#### Property date (MA, 2)

Use the date of the embargo start as value in one property and the date of the embargo end in the other property.

#### Attribute dateType (M)

The type of date. Choose from the date type vocabulary the controlled term `Accepted` to indicate the start and the term `Available` to indicate the end of an embargo period.

### 3.7.3 Example

```

1 <datacite:dates>
2   <datacite:date dateType="Accepted">2011-12-01</datacite:date>
3   <datacite:date dateType="Available">2012-12-01</datacite:date>
4 </datacite:dates>

```

<sup>29</sup> <https://wiki.surfnet.nl/display/standards/info-eu-repo/#info-eu-repo-DateTypesandvalue>

## 3.8 Language (MA)

dc:language

### 3.8.1 Cardinality

*Mandatory if applicable*

*Occurrence: 0-n*

### 3.8.2 Definition and Usage Instruction

#### DCMI Definition

A language of the intellectual content of the resource.

#### Usage Instruction

A specific resource (an instance of scientific output) is either written in one human language or more. In these cases all used languages are used in the DC element `language`. If a specific resource (an instance of scientific output) is written in one human language and is translated into other human languages, each translation does have its own record.

Recommendation: take values from one of the following lists:

- IETF BCP 47, the [IANA Language Subtag Registry](http://www.iana.org/assignments/language-subtag-registry)<sup>30</sup>
- ISO 639-x, where x can be 1,2 or 3. Best Practice: we use ISO 639-3 and by doing so we follow: <http://www.sil.org/iso639-3/>

If necessary, repeat this element to indicate multiple languages.

If ISO 639-2 and 639-1 are sufficient for the contents of a repository they can be used alternatively. Since there is a unique mapping this can be done during an aggregation process.

#### Remarks

- introduced in [DRIVER Guidelines v2 element language](https://wiki.surfnet.nl/display/DRIVERguidelines/Language)<sup>31</sup>

### Property language (MA, 0-n)

Use the language code as value.

### 3.8.3 Example

```
1 <dc:language>eng</dc:language>
2 <dc:language>deu</dc:language>
3 <dc:language>nld</dc:language>
4 <dc:language>nld/dut</dc:language>
5 <dc:language>dut</dc:language>
6 <dc:language>n1</dc:language>
```

## 3.9 Publisher (MA)

dc:publisher

---

<sup>30</sup> <http://www.iana.org/assignments/language-subtag-registry>

<sup>31</sup> <https://wiki.surfnet.nl/display/DRIVERguidelines/Language>

### 3.9.1 Cardinality

*Mandatory if applicable*

*Occurrence: 0-n*

### 3.9.2 Definition and Usage Instruction

#### DCMI Definition

An entity responsible for making the resource available. Examples of a Publisher include a person, an organization, or a service. Typically, the name of a Publisher should be used to indicate the entity.

#### Usage Instruction

The (commercial or non-commercial) publisher of the resource; not the (sub)institution the author is affiliated with. Publisher is used only in the bibliographic / functional sense, not an organisational one. Use only the full name of the given (commercial) publisher, not the name of an organization or institute that is otherwise [in a broader sense] associated with the creator.

With university publications place the name of the faculty and/or research group or research school after the name of the university. In the case of organizations where there is clearly a hierarchy present, list the parts of the hierarchy from largest to smallest, separated by full stops. If it is not clear whether there is a hierarchy present, or unclear which is the larger or smaller portion of the body, give the name as it appears in the eprint.

The use of publisher names from authority lists constructed according to local or national thesaurus files is optional.

#### Do Not Confuse With

- *Contributor (MA)*
- *Creator (M)*

In most cases the publisher and the creator are not the same.

#### Remarks

- introduced in [DRIVER Guidelines v2 element publisher](#)<sup>32</sup>

#### Property publisher (MA, 0-n)

Use the name of the publisher as value.

### 3.9.3 Example

```
1 <dc:publisher>
2   Loughborough University. Department of Computer Science
3 </dc:publisher>
4 <dc:publisher>John Wiley & Sons, Inc. (US)</dc:publisher>
```

## 3.10 Publication Date (M)

datacite:date

<sup>32</sup> <https://wiki.surfnet.nl/display/DRIVERguidelines/Publisher>

### 3.10.1 Cardinality

*Mandatory*

*Occurrence: 1*

### 3.10.2 Definition and Usage Instruction

#### DCMI Definition

A date associated with an event in the life cycle of the resource. Typically, Date will be associated with the creation or availability of the resource. Recommended best practice for encoding the date value is defined in a profile of [ISO 8601 \[W3CDTF\]](https://www.iso.org/iso-8601-date-and-time-format.html)<sup>33</sup> and follows the YYYY-MM-DD format.

#### Usage Instruction

The date should be formatted according to the W3C encoding rules for dates and times:

##### Complete date:

YYYY-MM-DD (e.g. 1997-07-16)

where:

- YYYY [four-digit year] is “mandatory”
- MM [two-digit month (01=January, etc.)] is “optional”
- DD [two-digit day of month (01 through 31)] is “optional”

##### One date field – Date of Publication:

Often repository systems have more than one date fields that serve different purposes. Date of creation, publication, modified, promotion, etc. Preferably in the end-users perspective the most logical and meaningful date will be the date of publication.

##### No date of publication available:

If no date of publication is available, use any other date available. It is better to use one date than no date at all.

##### Datestamp additions:

Additions like “Zulu time” should NOT be part of the metadata.

##### Fuzzy dates:

For fuzzy dates use a logical year that most represents that period, e.g. 1650 instead of 17th century.

To express more about that temporal period, one can use the `dc:coverage` field. A temporal period can be expressed in a standard way when precisely defined (see [Coverage \(R\)](#)) or when “fuzzy” or uncertain by free text expressions. A service provider is able to sort dates based on date standards like W3CDTF. Since there is no standard for fuzzy dates for terms like “Renaissance” or “17th Century”, they will simply not appear on date-based query results.

#### Remarks

- introduced in [DRIVER Guidelines v2](#) element `date`<sup>34</sup>
- this version of the application profile adopts the `Date` element in combination with `dateType` attribute from [DataCite MetadataKernel](#)<sup>35</sup> v4.1.

### Property date (M, 1)

Use the publication date as value.

---

<sup>33</sup> <https://www.iso.org/iso-8601-date-and-time-format.html>

<sup>34</sup> <https://wiki.surfnet.nl/display/DRIVERguidelines/Date>

<sup>35</sup> <http://schema.datacite.org/meta/kernel-4.1/>





- other research product

### Attribute uri (M)

Use terms from the COAR Resource Type Vocabulary<sup>37</sup> (occurrence: 1).

*Controlled list values*

conceptURI	label
<a href="http://purl.org/coar/resource_type/c_1162">http://purl.org/coar/resource_type/c_1162</a>	annotation
<a href="http://purl.org/coar/resource_type/c_6501">http://purl.org/coar/resource_type/c_6501</a>	journal article
<a href="http://purl.org/coar/resource_type/c_545b">http://purl.org/coar/resource_type/c_545b</a>	letter to the editor
<a href="http://purl.org/coar/resource_type/c_b239">http://purl.org/coar/resource_type/c_b239</a>	editorial
<a href="http://purl.org/coar/resource_type/c_2df8fbb1">http://purl.org/coar/resource_type/c_2df8fbb1</a>	research article
<a href="http://purl.org/coar/resource_type/c_dcae04bc">http://purl.org/coar/resource_type/c_dcae04bc</a>	review article
<a href="http://purl.org/coar/resource_type/c_beb9">http://purl.org/coar/resource_type/c_beb9</a>	data paper
<a href="http://purl.org/coar/resource_type/c_3e5a">http://purl.org/coar/resource_type/c_3e5a</a>	contribution to journal
<a href="http://purl.org/coar/resource_type/c_ba08">http://purl.org/coar/resource_type/c_ba08</a>	book review
<a href="http://purl.org/coar/resource_type/c_3248">http://purl.org/coar/resource_type/c_3248</a>	book part
<a href="http://purl.org/coar/resource_type/c_2f33">http://purl.org/coar/resource_type/c_2f33</a>	book
<a href="http://purl.org/coar/resource_type/c_86bc">http://purl.org/coar/resource_type/c_86bc</a>	bibliography
<a href="http://purl.org/coar/resource_type/c_816b">http://purl.org/coar/resource_type/c_816b</a>	preprint
<a href="http://purl.org/coar/resource_type/c_8042">http://purl.org/coar/resource_type/c_8042</a>	working paper
<a href="http://purl.org/coar/resource_type/c_71bd">http://purl.org/coar/resource_type/c_71bd</a>	technical documentation
<a href="http://purl.org/coar/resource_type/c_18gh">http://purl.org/coar/resource_type/c_18gh</a>	technical report
<a href="http://purl.org/coar/resource_type/c_18ws">http://purl.org/coar/resource_type/c_18ws</a>	research report
<a href="http://purl.org/coar/resource_type/c_18hj">http://purl.org/coar/resource_type/c_18hj</a>	report to funding agency
<a href="http://purl.org/coar/resource_type/c_18op">http://purl.org/coar/resource_type/c_18op</a>	project deliverable
<a href="http://purl.org/coar/resource_type/c_186u">http://purl.org/coar/resource_type/c_186u</a>	policy report
<a href="http://purl.org/coar/resource_type/c_18wq">http://purl.org/coar/resource_type/c_18wq</a>	other type of report
<a href="http://purl.org/coar/resource_type/c_18wz">http://purl.org/coar/resource_type/c_18wz</a>	memorandum
<a href="http://purl.org/coar/resource_type/c_18ww">http://purl.org/coar/resource_type/c_18ww</a>	internal report
<a href="http://purl.org/coar/resource_type/c_efa0">http://purl.org/coar/resource_type/c_efa0</a>	review
<a href="http://purl.org/coar/resource_type/c_baaf">http://purl.org/coar/resource_type/c_baaf</a>	research proposal
<a href="http://purl.org/coar/resource_type/c_balf">http://purl.org/coar/resource_type/c_balf</a>	report part
<a href="http://purl.org/coar/resource_type/c_93fc">http://purl.org/coar/resource_type/c_93fc</a>	report
<a href="http://purl.org/coar/resource_type/c_15cd">http://purl.org/coar/resource_type/c_15cd</a>	patent
<a href="http://purl.org/coar/resource_type/c_18co">http://purl.org/coar/resource_type/c_18co</a>	conference poster not in proceedings
<a href="http://purl.org/coar/resource_type/c_18cp">http://purl.org/coar/resource_type/c_18cp</a>	conference paper not in proceedings
<a href="http://purl.org/coar/resource_type/c_6670">http://purl.org/coar/resource_type/c_6670</a>	conference poster
<a href="http://purl.org/coar/resource_type/c_5794">http://purl.org/coar/resource_type/c_5794</a>	conference paper
<a href="http://purl.org/coar/resource_type/c_c94f">http://purl.org/coar/resource_type/c_c94f</a>	conference object
<a href="http://purl.org/coar/resource_type/c_f744">http://purl.org/coar/resource_type/c_f744</a>	conference proceedings
<a href="http://purl.org/coar/resource_type/c_7alf">http://purl.org/coar/resource_type/c_7alf</a>	bachelor thesis
<a href="http://purl.org/coar/resource_type/c_bdcc">http://purl.org/coar/resource_type/c_bdcc</a>	master thesis
<a href="http://purl.org/coar/resource_type/c_db06">http://purl.org/coar/resource_type/c_db06</a>	doctoral thesis
<a href="http://purl.org/coar/resource_type/c_46ec">http://purl.org/coar/resource_type/c_46ec</a>	thesis
<a href="http://purl.org/coar/resource_type/c_0857">http://purl.org/coar/resource_type/c_0857</a>	letter
<a href="http://purl.org/coar/resource_type/c_8544">http://purl.org/coar/resource_type/c_8544</a>	lecture
<a href="http://purl.org/coar/resource_type/c_18cf">http://purl.org/coar/resource_type/c_18cf</a>	text
<a href="http://purl.org/coar/resource_type/c_18cw">http://purl.org/coar/resource_type/c_18cw</a>	musical notation
<a href="http://purl.org/coar/resource_type/c_18cd">http://purl.org/coar/resource_type/c_18cd</a>	musical composition
<a href="http://purl.org/coar/resource_type/c_18cc">http://purl.org/coar/resource_type/c_18cc</a>	sound
<a href="http://purl.org/coar/resource_type/c_12ce">http://purl.org/coar/resource_type/c_12ce</a>	video

Continued on next page

<sup>37</sup> [http://vocabularies.coar-repositories.org/documentation/resource\\_types/](http://vocabularies.coar-repositories.org/documentation/resource_types/)

Table 2 – continued from previous page

conceptURI	label
<a href="http://purl.org/coar/resource_type/c_8a7e">http://purl.org/coar/resource_type/c_8a7e</a>	moving image
<a href="http://purl.org/coar/resource_type/c_ecc8">http://purl.org/coar/resource_type/c_ecc8</a>	still image
<a href="http://purl.org/coar/resource_type/c_c513">http://purl.org/coar/resource_type/c_c513</a>	image
<a href="http://purl.org/coar/resource_type/c_12cd">http://purl.org/coar/resource_type/c_12cd</a>	map
<a href="http://purl.org/coar/resource_type/c_12cc">http://purl.org/coar/resource_type/c_12cc</a>	cartographic material
<a href="http://purl.org/coar/resource_type/c_5ce6">http://purl.org/coar/resource_type/c_5ce6</a>	software
<a href="http://purl.org/coar/resource_type/c_ddb1">http://purl.org/coar/resource_type/c_ddb1</a>	dataset
<a href="http://purl.org/coar/resource_type/c_e9a0">http://purl.org/coar/resource_type/c_e9a0</a>	interactive resource
<a href="http://purl.org/coar/resource_type/c_7ad9">http://purl.org/coar/resource_type/c_7ad9</a>	website
<a href="http://purl.org/coar/resource_type/c_393c">http://purl.org/coar/resource_type/c_393c</a>	workflow
<a href="http://purl.org/coar/resource_type/c_1843">http://purl.org/coar/resource_type/c_1843</a>	other

### 3.11.3 Example

```
<oaire:resourceType resourceTypeGeneral="literature" uri="http://purl.org/coar/
resource_type/c_6501">journal article</oaire:resourceType>
```

## 3.12 Description (MA)

dc:description

### 3.12.1 Cardinality

*Mandatory if applicable*

*Occurrence: 0-n*

### 3.12.2 Definition and Usage Instruction

#### DCMI Definition

An account of the content of the resource. Description may include but is not limited to: an abstract, table of contents, reference to a graphical representation of content or a free-text account of the content.

#### Usage Instruction

This element is used for a textual description of the content. When a resource consists of several separate physical object files, do not use dc:description to list the URLs of these files.

#### Remarks

- introduced in DRIVER Guidelines v2 element description<sup>38</sup>

#### Property description (MA, 0-n)

Use the textual description as value.

#### Attribute lang (O)

The language of the description (occurrence: 0-1).

Use the xml:lang attribute to indicate the language of the description.

<sup>38</sup> <https://wiki.surfnet.nl/display/DRIVERguidelines/Description>

### 3.12.3 Example

```
1 <dc:description>
2   Foreword [by] Hazel Anderson; Introduction; The scientific heresy:
3   transformation of a society; Consciousness as causal reality [etc]
4 </dc:description>
5
6 <dc:description xml:lang="en-US">
7   A number of problems in quantum state and system identification are
8   addressed.
9 </dc:description>
```

## 3.13 Format (R)

dc:format

### 3.13.1 Cardinality

*Recommended*

*Occurrence: 0-n*

### 3.13.2 Definition and Usage Instruction

#### DCMI Definition

The physical or digital manifestation of the resource. Typically, Format may include the media-type or dimensions of the resource. Format may be used to determine the software, hardware or other equipment needed to display or operate the resource. Examples of dimensions include size and duration. Recommended best practice is to select a value from a controlled vocabulary (for example, the list of Internet Media Types [MIME] defining computer media formats).

#### Usage Instruction

Based on best practice, the IANA registered list of Internet Media Types (MIME types) is used to select a term from. For the full list see <http://www.iana.org/assignments/media-types>

If one specific resource (an instance of scientific output) has more than one physical formats (e.g. postscript and pdf) stored as different object files, all formats are mentioned in the DC element format, for example:

- <dc:format>application/pdf</dc:format>
- <dc:format>application/postscript</dc:format>
- <dc:format>application/vnd.oasis.opendocument.text</dc:format>

#### Do Not Confuse With

- *Resource Type (M)*
- *Resource Identifier (M)*

DC element `format` describes the media type of this resource. `oaire:resourceType` describes the kind of academic output the resource is a representation of. `datacite:identifier` is used to represent the manifestation of the digital resource.

#### Remarks

- introduced in [DRIVER Guidelines v2 element format](#)<sup>39</sup>

---

<sup>39</sup> <https://wiki.surfnet.nl/display/DRIVERguidelines/Format>

### Property format (R, 0-n)

Use the media type of the resource as value.

#### 3.13.3 Example

```

1 <dc:format>video/quicktime</dc:format>
2 <dc:format>application/pdf</dc:format>
3 <dc:format>application/xml</dc:format>
4 <dc:format>application/xhtml+xml</dc:format>
5 <dc:format>application/html</dc:format>
6 <dc:format>application/vnd.oasis.opendocument.text</dc:format>

```

## 3.14 Resource Identifier (M)

`datacite:identifier`

### 3.14.1 Cardinality

*Mandatory*

*Occurrence: 1*

### 3.14.2 Definition and Usage Instruction

The Identifier is a unique string that identifies a resource.

#### Usage Instruction

Recommended best practice is to identify the resource by means of a string or number conforming to a formal identification system. Example formal identification systems include the Uniform Resource Identifier (URI), the Uniform Resource Locator (URL), the Digital Object Identifier (DOI), and the `URN:NBN`. Also this can be a direct URL, or a redirection URL, like PURL, HANDLE or other international resolution mechanisms.

The ideal use of this element is to use a direct link or a link to a jump-off page (persistent URL) from `identifier` in the metadata record to the digital resource or a jump-off page.

Smart practice:

- use a stable URL

#### Do Not Confuse With

- *Alternate Identifier (R)* (Use `datacite:alternativeIdentifier` to list other identifiers than the primary identifier applied to the same resource.)
- *Related Identifier (R)* (Use `datacite:relatedIdentifier` to refer to related resources.)
- *File Location (MA)* (Use `oaire:file` to point to the resource being described by this metadata, e.g. the fulltext file.)
- *Source (R)* (Use `dc:source` for bibliographic citation of the originating resource.)

### Property identifier (M, 1)

Use the identifier link as value.

### Attribute identifierType (M)

The type of the Identifier (occurrences: 1).

#### Allowed values, examples, other constraints

##### Controlled list values

- ARK
- DOI
- Handle
- PURL
- URL
- URN

---

**Note:** Unlike DataCite, OpenAIRE allows for DOIs and other types of identifiers.

---

### 3.14.3 Example

In this example the handle redirects to the jump-off page. A jump-off page is a good way to refer to. The end-user has the opportunity to see more information about the object(s) he has found, see the context and enjoy the other services a local repository has to offer:

```
<datacite:identifier identifierType="Handle">http://hdl.handle.net/1234/5628</datacite:identifier>
```

## 3.15 Access Rights (M)

datacite:rights

### 3.15.1 Cardinality

*Mandatory*

*Occurrence: 1*

### 3.15.2 Definition and Usage Instruction

Access right of the resource.

Information about the right or mode the resource can be accessed. If the metadata describe more than one resource, e.g. fulltext and supplementary material, the access right of the main resource should be provided.

Use terms from the [COAR Access Right Vocabulary](http://vocabularies.coar-repositories.org/documentation/access_rights/)<sup>40</sup> (occurrence: 1).

conceptURI	label
<a href="http://purl.org/coar/access_right/c_abf2">http://purl.org/coar/access_right/c_abf2</a>	open access
<a href="http://purl.org/coar/access_right/c_flcf">http://purl.org/coar/access_right/c_flcf</a>	embargoed access
<a href="http://purl.org/coar/access_right/c_16ec">http://purl.org/coar/access_right/c_16ec</a>	restricted access
<a href="http://purl.org/coar/access_right/c_14cb">http://purl.org/coar/access_right/c_14cb</a>	metadata only access

---

<sup>40</sup> [http://vocabularies.coar-repositories.org/documentation/access\\_rights/](http://vocabularies.coar-repositories.org/documentation/access_rights/)

---

**Note:** Unlike DataCite, OpenAIRE restricts the use of this property to indicate the access right.

---

#### Do Not Confuse With

- *License Condition (R)* (Use `oaire:licenseCondition` for license information related to the resource.)

#### Remarks

- former versions of the OpenAIRE Guidelines used the [info:eu-repo-Access-Terms vocabulary](#)<sup>41</sup>.

### Property `accessRights` (M, 1)

Use the label of the vocabulary term as value.

#### Attribute `uri` (M)

Use the conceptURI of the vocabulary term.

### 3.15.3 Example

```
<datacite:rights rightsURI="http://purl.org/coar/access_right/c_abf2">open access</  
↪datacite:rights>
```

## 3.16 Source (R)

`dc:source`

### 3.16.1 Cardinality

*Recommended*

*Occurrence: 0-n*

### 3.16.2 Definition and Usage Instruction

#### DCMI Definition

A reference to a resource from which the present resource is derived.

#### Usage Instruction

The present resource may be derived from the *Source* resource in whole or in part. Recommended best practice is to reference the resource by means of a string or number conforming to a formal identification system.

Best practice: Use only when the described resource is the result of digitization of non-digital originals. Otherwise, use `:ref: 'dc:relatedIdentifier'`. Optionally metadata about the current location and call number of the digitized publication can be added.

Use: Guidelines for Encoding Bibliographic Citation Information in Dublin Core Metadata (<http://dublincore.org/documents/dc-citation-guidelines/>).

#### Do Not Confuse With

---

<sup>41</sup> <https://wiki.surfnet.nl/display/standards/info-eu-repo/#info-eu-repo-AccessRights>

- *Resource Identifier (M)*

**Remarks**

- introduced in DRIVER Guidelines v2 element source<sup>42</sup>

**Property source (R, 0-n)**

Use source information as value.

**3.16.3 Example**

```
<dc:source>Ecology Letters (1461023X) vol.4 (2001)</dc:source>
```

**3.17 Subject (MA)**

datacite:subject

**3.17.1 Cardinality**

*Mandatory if applicable*

*Occurrence: 0-n*

**3.17.2 Definition and Usage Instruction**

Subject, keyword, classification code, or key phrase describing the resource (occurrences: 0-n).

**Usage Instruction**

In the subject property two kinds of values are possible: encode either a keyword or a classification.

In general, choose the most significant and unique words for keywords, avoiding those too general to describe a particular resource.

For keywords/keyphrases that are not controlled by a vocabulary or thesaurus either encode multiple terms with a semi-colon separating each keyword/keyphrase; or repeat the element for each term. There are no requirements regarding the capitalization of keywords though internal (within archive) consistency is recommended.

Where terms are taken from a standard classification schema: encode each term using the additional attributes of the subject property. Encode the complete subject descriptor according to the relevant scheme. Use the capitalisation and punctuation used in the original scheme.

It is recommended to use an URI when using classification schemes or controlled vocabularies especially when codified schemes are used DDC or UDC. Service providers can recognise encoding schemas more easily when the schema is “URI-fied” by an authority namespace.

If no specific classification scheme is used we recommend the Dewey Decimal Classification (DDC). More information about the DDC and the DDC Summaries can be found at <https://www.oclc.org/en/dewey/resources.html>. Please note that OCLC owns all copyright rights in the Dewey Decimal Classification system. Dewey, Dewey Decimal Classification, DDC, OCLC and WebDewey are registered trademarks of OCLC.

**Remarks**

- adapted from DataCite MetadataKernel<sup>43</sup> v4.1

---

<sup>42</sup> <https://wiki.surfnet.nl/display/DRIVERguidelines/Source>

<sup>43</sup> <http://schema.datacite.org/meta/kernel-4.1/>



**Property subject (MA, 0-n)**

Use subject name or keyword as value.

**Attribute subjectScheme (O)**

The name of the subject scheme or classification code or authority if one is used (occurrences: 0-1).

**Allowed values, examples, other constraints**

Free text.

**Attribute schemeURI (O)**

The URI of the subject identifier scheme (occurrences: 0-1).

**Allowed values, examples, other constraints**

Examples:

- <http://id.loc.gov/authorities/subjects>
- <http://dewey.info/>

**Attribute valueURI (O)**

The URI of the subject term.

**3.17.3 Example**

```

1 <datacite:subjects>
2   <datacite:subject>Earth sciences and geology</datacite:subject>
3   <datacite:subject subjectScheme="DDC" schemeURI="http://dewey.info/" valueURI="">
4     551 Geology, hydrology, meteorology
5   </datacite:subject>
6 </datacite:subjects>

```

**3.18 License Condition (R)**

oaire:licenseCondition

**3.18.1 Cardinality**

*Recommended*

*Occurrence: 1*

**3.18.2 Definition and Usage Instruction****DCMI Definition**

Information about license rights held in and over the resource.

**Usage Instruction**

Typically, a rights element will contain a rights management statement for the access or use of the object, or reference a service providing such information. Rights information often encompasses Intellectual Property Rights

(IPR), Copyright, and various Property Rights. It is preferred to refer to a rights service where the reuse rights are made clear to the end-user by using a URL. For example the Creative Commons organisation has created URIs for their different licences in the different jurisdictions. This can be applied to create machine readable usage licenses.

### Property licenseCondition (R, 1)

Use the name of the license as value.

### Attribute uri (MA)

The URL provides the location where the license can be read. With creative common licenses the type of license can be recognized in the URL name itself. A pro for having the license point to an URL in this way, is that this is machine readable.

### Attribute startDate (MA)

This attribute indicates the date when the license comes into effect. Recommended best practice for encoding the date value is defined in a profile of ISO 8601 [W3CDTF] and follows the YYYY-MM-DD format.

## 3.18.3 Example

```
1 <!-- example 1 -->
2 <oaire:licenseCondition startDate="2019-02-01" uri="http://creativecommons.org/
  ↳licenses/by-nc/4.0/">Creative Commons Attribution-NonCommercial</
  ↳oaire:licenseCondition>
```

## 3.19 Coverage (R)

dc:coverage

### 3.19.1 Cardinality

*Recommended*

*Occurrence: 0-n*

### 3.19.2 Definition and Usage Instruction

The extent or scope of the content of the resource. Coverage will typically include temporal period (a period label, date, or date range) or jurisdiction (such as a named administrative entity).

#### Usage Instruction

It is recommended to use literal or non-literal values. If necessary, repeat this element to encode multiple periods.

#### Remarks

- introduced in [DRIVER Guidelines v2 element coverage](#)<sup>44</sup>
- to describe spatial location information (a place name or geographic coordinates) use the property *Geo Location (O)*

---

<sup>44</sup> <https://wiki.surfnet.nl/display/DRIVERguidelines/Coverage>

### Property coverage (R, 0-n)

Use temporal period or jurisdiction information as value.

#### 3.19.3 Example

Example Spatial: temporal topic:

```
<dc:coverage>2000-2010</dc:coverage>
```

Example Spatial: BOX:

```
<dc:coverage>
  scheme=historic; content=Ming Dynasty
</dc:coverage>
```

## 3.20 Size (O)

datacite:size

### 3.20.1 Cardinality

*Optional*

*Occurrence: 0-n*

### 3.20.2 Definition and Usage Instruction

Unstructured size information about the resource.

#### Allowed values, examples, other constraints

Free text.

Examples: “15 pages”, “6 MB”

#### Remarks

- adapted from [DataCite MetadataKernel](http://schema.datacite.org/meta/kernel-4.1/)<sup>45</sup> v4.1

### Property size (O, 0-n)

Use size information as value. Repeat the property for different size information domains.

#### 3.20.3 Example

```
<datacite:sizes>
  <datacite:size>15 pages</datacite:size>
  <datacite:size>6 MB</datacite:size>
</datacite:sizes>
```

<sup>45</sup> <http://schema.datacite.org/meta/kernel-4.1/>

## 3.21 Geo Location (O)

`datacite:geoLocation`

### 3.21.1 Cardinality

*Optional*

*Occurrence: 0-n*

### 3.21.2 Definition and Usage Instruction

Spatial region or named place where the data was gathered or about which the data is focused.

#### Property `geoLocation` (O, 0-n)

Repeat this property to indicate several different locations.

#### Subproperty `geoLocationPoint` (O)

A point location in space (occurrences: 0-1).

A point contains a single latitude-longitude pair.

See *Detailed usage instructions*.

#### `pointLongitude` (M)

Longitudinal dimension of point (occurrence: 1).

Mandatory if *geoLocationPoint* is used.

#### `pointLatitude` (M)

Latitudinal dimension of point (occurrence: 1).

Mandatory if *geoLocationPoint* is used.

#### Subproperty `geoLocationBox` (O)

The spatial limits of a place or box (occurrences: 0-1).

#### **Allowed values, examples, other constraints**

A box is defined by two geographic points. Left lower corner (normally south west), right upper corner (normally north east). Each point is defined by its longitude and latitude.

See *Detailed usage instructions*.

#### `westBoundLongitude` (M)

Western longitudinal dimension of box. Mandatory if *geoLocationBox* is used.

**eastBoundLongitude (M)**

Eastern longitudinal dimension of box. Mandatory if *geoLocationBox* is used.

**southBoundLatitude (M)**

Southern latitudinal dimension of box. Mandatory if *geoLocationBox* is used.

**northBoundLatitude (M)**

Northern latitudinal dimension of box. Mandatory if *geoLocationBox* is used.

**Subproperty geoLocationPlace (O)**

Description of a geographic location (occurrences: 0-1).

**Allowed values, examples, other constraints**

Free text. Use to describe a geographic location.

**Subproperty geoLocationPolygon (O)**

A drawn polygon area, defined by a set of points and lines connecting the points in a closed chain (occurrences: 0-n).

**polygonPoint (M)**

A point location in a polygon (occurrences: 4-n). Mandatory if *geoLocationPolygon* is used.

**pointLongitude (M)**

Longitudinal dimension of point (occurrence: 1). Mandatory if *polygonPoint* is used.

**pointLatitude (M)**

Latitudinal dimension of point (occurrence: 1). Mandatory if *polygonPoint* is used.

**inPolygonPoint (O)**

For any bound area that is larger than half the earth, define a (random) point inside.

**pointLongitude (M)**

Longitudinal dimension of point (occurrence: 1). Mandatory if *inPolygonPoint* is used.

**pointLatitude (M)**

Latitudinal dimension of point (occurrence: 1). Mandatory if *inPolygonPoint* is used.

## Detailed usage instructions

Use WGS 84 (World Geodetic System) coordinates. Use only decimal numbers for coordinates. Longitudes are -180 to 180 (0 is Greenwich, negative numbers are west, positive numbers are east), Latitudes are -90 to 90 (0 is the equator; negative numbers are south, positive numbers north).

### Remarks

- adapted from [DataCite MetadataKernel](#)<sup>46</sup> v4.1

### 3.21.3 Example

```

1 <datacite:geoLocations>
2   <datacite:geoLocation>
3     <datacite:geoLocationPlace>Atlantic Ocean</datacite:geoLocationPlace>
4     <datacite:geoLocationPoint>
5       <datacite:pointLongitude>31.233</datacite:pointLongitude>
6       <datacite:pointLatitude>-67.302</datacite:pointLatitude>
7     </datacite:geoLocationPoint>
8     <datacite:geoLocationBox>
9       <datacite:westBoundLongitude>-71.032</datacite:westBoundLongitude>
10      <datacite:eastBoundLongitude>-68.211</datacite:eastBoundLongitude>
11      <datacite:southBoundLongitude>41.090</datacite:southBoundLongitude>
12      <datacite:northBoundLongitude>42.893</datacite:northBoundLongitude>
13    </datacite:geoLocationBox>
14  </datacite:geoLocation>
15 </datacite:geoLocations>

```

## 3.22 Resource Version (R)

oaire:version

### 3.22.1 Cardinality

*Recommended*

*Occurrence: 1*

### 3.22.2 Definition and Usage Instruction

Depening on the resource type this property is used to indicate

- the version number of a dataset or software
- the status in the publication process of journal articles.

#### Usage

For *software* and *dataset* resources any string will be accepted, but a semantically-versioned tag is recommended. See <https://semver.org> for more information on semantic versioning.

For *preprints* and *articles* in the journal publishing process a controlled term must be used from the “Journal Article Versions (JAV): Recommendations of the NISO/ALPSP JAV Technical Working Group” ([JAV](#)<sup>47</sup>). In tis case the property *must* include the attribute ‘uri’. The value of the property is the corresponding label of the HTTP URI.

<sup>46</sup> <http://schema.datacite.org/meta/kernel-4.1/>

<sup>47</sup> <https://www.niso.org/publications/niso-rp-8-2008-jav>

### Property version (R, 1)

Use either a version number or the label of the vocabulary term as value.

### Attribute uri (MA)

Allowed HTTP URI are from the [COAR Version Types Vocabulary](http://vocalaries.coar-repositories.org/documentation/version_types/)<sup>48</sup>.

#### Version (controlled):

conceptURI	label	comment
<a href="http://purl.org/coar/version/c_b1a7d7d4d402bcce">http://purl.org/coar/version/c_b1a7d7d4d402bcce</a>	AO	Author's Original
<a href="http://purl.org/coar/version/c_71e4c1898caa6e32">http://purl.org/coar/version/c_71e4c1898caa6e32</a>	SMUR	Submitted Manuscript Under Review
<a href="http://purl.org/coar/version/c_ab4af688f83e57aa">http://purl.org/coar/version/c_ab4af688f83e57aa</a>	AM	Accepted Manuscript
<a href="http://purl.org/coar/version/c_fa2ee174bc00049f">http://purl.org/coar/version/c_fa2ee174bc00049f</a>	P	Proof
<a href="http://purl.org/coar/version/c_970fb48d4fbd8a85">http://purl.org/coar/version/c_970fb48d4fbd8a85</a>	VoR	Version of Record
<a href="http://purl.org/coar/version/c_e19f295774971610">http://purl.org/coar/version/c_e19f295774971610</a>	CVoR	Corrected Version of Record
<a href="http://purl.org/coar/version/c_dc82b40f9837b551">http://purl.org/coar/version/c_dc82b40f9837b551</a>	EVOR	Enhanced Version of Record
<a href="http://purl.org/coar/version/c_be7fb7dd8ff6fe43">http://purl.org/coar/version/c_be7fb7dd8ff6fe43</a>	NA	Not Applicable (or Unknown)

### 3.22.3 Example

```
<oaire:version>1.0.3</oaire:version>
```

```
<oaire:version uri="http://purl.org/coar/version/c_be7fb7dd8ff6fe43">AM</
  ↪ oaire:version>
```

## 3.23 File Location (MA)

oaire:file

### 3.23.1 Cardinality

*Recommended*

*Occurrence: 0-n*

### 3.23.2 Definition and Usage Instruction

An unambiguous reference to the files, e.g. fulltext, the resource is associated with. Repeat the property for each associated file.

#### Property file (MA, 0-n)

Use the HTTP URI of the file as value.

<sup>48</sup> [http://vocalaries.coar-repositories.org/documentation/version\\_types/](http://vocalaries.coar-repositories.org/documentation/version_types/)

### Attribute accessRightsURI (R)

Use terms from the [COAR Access Right Vocabulary](#)<sup>49</sup>.

conceptURI	label
<a href="http://purl.org/coar/access_right/c_abf2">http://purl.org/coar/access_right/c_abf2</a>	open access
<a href="http://purl.org/coar/access_right/c_flcf">http://purl.org/coar/access_right/c_flcf</a>	embargoed access
<a href="http://purl.org/coar/access_right/c_16ec">http://purl.org/coar/access_right/c_16ec</a>	restricted access
<a href="http://purl.org/coar/access_right/c_14cb">http://purl.org/coar/access_right/c_14cb</a>	metadata only access

### Attribute mimeType (R)

Specify the file format. It is recommended to select it from the MIME media type which is registered in IANA. For the full list see <http://www.iana.org/assignments/media-types>

### Attribute objectType (R)

Specify the type of object the file represents. Select it from the following controlled list:

- fulltext
- dataset
- software
- other

## 3.23.3 Example

```
<oaire:file accessRightsURI="http://purl.org/coar/access_right/c_abf2" mimeType=
↪ "application/pdf" objectType="fulltext">http://link-to-the-fulltext.org</
↪ oaire:file>
```

## 3.24 Citation Title (R)

oaire:citationTitle

### 3.24.1 Cardinality

*Recommended*

*Occurrence: 0-1*

### 3.24.2 Definition and Usage Instruction

The title name of the container (e.g. journal, book, conference) this work is published in. This property is considered to be part of the bibliographic citation.

#### Property citationTitle (R, 0-1)

Use the title name as value.

---

<sup>49</sup> [http://vocabularies.coar-repositories.org/documentation/access\\_rights/](http://vocabularies.coar-repositories.org/documentation/access_rights/)



### 3.24.3 Example

```
<oaire:citationTitle>some Journal Title</oaire:citationTitle>
```

## 3.25 Citation Volume (R)

oaire:citationVolume

### 3.25.1 Cardinality

*Recommended*

*Occurrence: 0-1*

### 3.25.2 Definition and Usage Instruction

The volume, typically a number, of the container (e.g. journal). This property is considered to be part of the bibliographic citation.

#### Property citationVolume (R, 0-1)

Use the volume number as value.

### 3.25.3 Example

```
<oaire:citationVolume>10</oaire:citationVolume>
```

## 3.26 Citation Issue (R)

oaire:citationIssue

### 3.26.1 Cardinality

*Recommended*

*Occurrence: 0-1*

### 3.26.2 Definition and Usage Instruction

The issue of the container (e.g. journal). This property is considered to be part of the bibliographic citation.

#### Property citationIssue (R, 0-1)

Use the issue number as value.

### 3.26.3 Example

```
<oaire:citationIssue>1</oaire:citationIssue>
```

## 3.27 Citation Start Page (R)

oaire:citationStartPage

### 3.27.1 Cardinality

*Recommended*

*Occurrence: 0-1*

### 3.27.2 Definition and Usage Instruction

The start page is part of the pagination information of the work published in a container (e.g. journal issue). This property is considered to be part of the bibliographic citation.

#### Property citationStartPage (R, 0-1)

Use the start page number as value.

### 3.27.3 Example

```
<oaire:citationStartPage>100</oaire:citationStartPage>
```

## 3.28 Citation End Page (R)

oaire:citationEndPage

### 3.28.1 Cardinality

*Recommended*

*Occurrence: 0-1*

### 3.28.2 Definition and Usage Instruction

The end page is part of the pagination information of the work published in a container (e.g. journal issue). This property is considered to be part of the bibliographic citation.

#### Property citationEndPage (R, 0-1)

Use the end page number as value.

### 3.28.3 Example

```
<oaire:citationEndPage>105</oaire:citationEndPage>
```

## 3.29 Citation Edition (R)

oaire:citationEdition

### 3.29.1 Cardinality

*Recommended*

*Occurrence: 0-1*

### 3.29.2 Definition and Usage Instruction

The edition the work was published in (e.g. book edition). This property is considered to be part of the bibliographic citation.

#### Property citationEdition (R, 0-1)

Use the edition number as value.

### 3.29.3 Example

```
<oaire:citationEdition>2</oaire:citationEdition>
```

## 3.30 Citation Conference Place (R)

oaire:citationConferencePlace

### 3.30.1 Cardinality

*Recommended*

*Occurrence: 0-1*

### 3.30.2 Definition and Usage Instruction

The place where the conference took place. This property is considered to be part of the bibliographic citation.

#### Property citationConferencePlace (R, 0-1)

Use the name of the place as value.

### 3.30.3 Example

```
<oaire:citationConferencePlace>Berlin</oaire:citationConferencePlace>
```

## 3.31 Citation Conference Date (R)

oaire:citationConferenceDate

### 3.31.1 Cardinality

*Recommended*

*Occurrence: 0-1*

### 3.31.2 Definition and Usage Instruction

The date when the conference took place. This property is considered to be part of the bibliographic citation. Recommended best practice for encoding the date value is defined in a profile of ISO 8601 [W3CDTF]<sup>50</sup> and follows the YYYY-MM-DD format.

#### Usage Instruction

The date should be formatted according to the W3C encoding rules for dates and times:

#### Complete date:

YYYY-MM-DD (e.g. 1997-07-16)

where:

- YYYY [four-digit year]
- MM [two-digit month (01=January, etc.)]
- DD [two-digit day of month (01 through 31)]

#### Property citationConferenceDate (R, 0-1)

Use the *single date* or *start date* and *end date* as values following these patterns:

- YYYY-MM-DD [*single date*]
- YYYY-MM-DD - YYYY-MM-DD [*start date - end date*]

### 3.31.3 Example

```
<oaire:citationConferenceDate>2013-10-22</oaire:citationConferenceDate>
```

```
<oaire:citationConferenceDate>2013-09-22 - 2013-09-26</  
↪ oaire:citationConferenceDate>
```

## 3.32 Audience (O)

dcterms:audience

<sup>50</sup> <https://www.iso.org/iso-8601-date-and-time-format.html>

### 3.32.1 Cardinality

*Optional*

*Occurrence: 0-n*

### 3.32.2 Definition and Usage Instruction

#### DCMI Definition

A class of entity for whom the resource is intended or useful.

#### Usage Instruction

A class of entity may be determined by the creator or the publisher or by a third party. An example of audiences given is derived from the [Common Education Data Standards vocabulary](#)<sup>51</sup>. Please note the list is not exhaustive.

- Administrators
- Community Groups
- Counsellors
- Federal Funds Recipients and Applicants
- Librarians
- News Media
- Other
- Parents and Families
- Policymakers
- Researchers
- School Support Staff
- Student Financial Aid Providers
- Students
- Teachers

#### Remarks

- introduced in [DRIVER Guidelines v2 element audience](#)<sup>52</sup>

#### Property audience (O, 0-n)

Use the class of entity as value.

### 3.32.3 Example

```
1 <dcterms:audience>Researchers</dcterms:audience>
2 <dcterms:audience>Students</dcterms:audience>
```

<sup>51</sup> <https://ceds.ed.gov/element/001492>

<sup>52</sup> <https://wiki.surfnet.nl/display/DRIVERguidelines/Audience>