# Dublin Core Metadata Initiative Scholarly Works Application Profile (SWAP)

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The aim of this proposal is to make the description of scholarly works, such as theses, with Dublin Core Metadata Terms possible. The proposal is based on a) an outdated Scholarly Works Application Profile (SWAP[[1]](#footnote-1)[[2]](#footnote-2)), which was developed by UKOLN in 2006, and b) Finnish metadata guidelines for text documents in institutional repositories[[3]](#footnote-3) (available only in Finnish).

There is significant overlap between SWAP, the Finnish guidelines, and for instance British Library’s ETHOS specification[[4]](#footnote-4). There are probably many local application profiles developed by universities and other institutions of higher education for the description of scholarly works. Adding the necessary properties for the description of scholarly works to DCMI Metadata Terms will eliminate duplicate efforts and maximize semantic interoperability between DC metadata produced by different institutions of higher education.

The proposal has been prepared by a working group translating ISO 15836-2 into Finnish. This proposal contains properties from both source documents. All these properties are “battle-proven” and actively used in Finland (except embargo date, which is used in and has been adopted from ETHOS). However, several properties, such as affiliation, have been used in a limited context in scholarly materials such as dissertations. In this proposal these properties have a more generic scope appropriate for DCMI Terms properties, but their more limited semantics from SWAP context is also presented.

This proposal also contains recommendations for semantic refinements to three existing Dublin Core Terms properties to make them more suitable to use in the description of scholarly works.

The 2006 SWAP proposal from the UK is an important source for this proposal, but there are significant differences between this proposal and the UKOLN SWAP. Many properties originating from it have more generic semantics in this document in order to maximize their usability and usefulness in Dublin Core. Only in the SWAP context these properties are interpreted in a more narrow sense originally specified in the UKOLN SWAP.

The FRBR structure of the UKOLN SWAP profile has been removed, meaning that no FRBR dependent properties from that profile are included. Since the FRBR model is still not used in DC based resource description, including FRBR properties in the proposal would have provided little added value.

When UKOLN created the 2006 version of SWAP, no standard identifiers for researchers such as ORCID or ISNI existed. Therefore the profile could not rely on them, and advocated the use of email addresses and homepage URLs as “identifiers”. However, researchers’ email addresses or homepage URIs should not be used as their identifiers since they are not persistent and do not identify a person in the long (or even short) term. Due to this, properties from the “Description of an agent” section of the 2006 SWAP proposal are not included herein. Instead, this proposal relies on standard identifiers, such as ISNI and ORCID, since they are persistent and facilitate access to additional metadata about the agent.

We do not propose any new properties for agent-specific identifiers, but rely on DCMI’s proposal of using the XML id-attribute to match identifiers with their agents. For instance:

<dcterms:affiliation id="<http://isni.org/isni/0000000404102071>">University of Helsinki</ dcterms:affiliation>

This approach is sufficient for e.g. ISNI and ORCID (which share the same syntax) since their HTTP URIs reveal the identifier system used:

<dcterms:editor id=<https://orcid.org/0000-0002-1825-0097>>Carberry, Josiah</dcterms:editor>

Roles of contributors are based on Library of Congress Relator terms and their associated codes[[5]](#footnote-5) when applicable. Contributor codes used in SWAP are provided for reference purposes.

Note 1: All DCMI Metadata Terms URIs are suggestions.

Note 2: Examples are not normative and do not need to be reviewed.

# Generic elements

## Affiliation

Proposed DCMI Metadata Terms: <http://purl.org/dc/terms/affiliation>

Label: Affiliation

An organization to which an agent is or was affiliated.

Domain includes: dcterms:Agent

SWAP: An organization to which the creator of the scholarly work is affiliated or was affiliated when the work was created.

Recommended practice is to identify the affiliation with a URI. If this is not possible or feasible, a literal value that identifies the affiliated organization may be provided. It is also possible to give both the name and the URI.

If a name is given, it should be provided in full and in hierarchical order, starting from the largest organizational unit.

Example 1: <dcterms:affiliation><http://isni.org/isni/0000000406246810>></dcterms:affiliation>

Example 2: <dcterms:affiliation>University of Helsinki. Faculty of Theology</dcterms:affiliation>

Example 3: <dcterms:affiliation id="<http://isni.org/isni/0000000406246810>">University of Helsinki. Faculty of Theology</dcterms:affiliation>

Note 1: ISNI should be provided as a URI, not as a literal, since the literal form (0000 0004 0624 6810) is not actionable and does not indicate explicitly whether the string is ISNI, ORCID or even some other identifier that just happens to have the same syntax.

## Editor

Proposed DCMI Metadata Terms: <http://purl.org/dc/terms/editor>

Label: Editor

A person or organization who prepares a resource for publication that is not primarily their own, such as by clarifying text, adding introductory or other critical matter, or technically leading an editorial staff.

SWAP: A person or group who prepares a scholarly work for publication that is not primarily their own, such as by clarifying text, adding introductory or other critical matter, or technically leading an editorial staff.

Recommended practice is to identify the editor with a URI. If this is not possible or feasible, a literal value that identifies the editor may be provided. It is also possible to give both the name and the URI.

Subproperty of: Contributor (<http://purl.org/dc/elements/1.1/contributor>)

(<http://purl.org/dc/terms/contributor>)

## Embargo date

Proposed DCMI Metadata Terms: <http://purl.org/dc/terms/embargoDate>

Label: Embargo Date

The date when the resource will be made publicly available.

SWAP: The date when the scholarly work will be made publicly available.

Recommended practice is to describe the date, or date/time as recommended for the property Date, of which this is a subproperty.

Subproperty of: Date (<http://purl.org/dc/elements/1.1/date>)

(<http://purl.org/dc/terms/date>)

## Funder

Proposed DCMI Metadata Terms: <http://purl.org/dc/terms/funder>

Label: Funder

A person or organization that furnished financial support for the production of the resource.

SWAP: A person or organization that furnished financial support for the production of the scholarly work.

Recommended practice is to identify the funder with a URI. If this is not possible or feasible, a literal value that identifies the funder may be provided. It is also possible to give both the name and the URI.

If a name is given, it should be provided in full and in hierarchical order, starting from the largest organizational unit.

Subproperty of: Contributor (<http://purl.org/dc/elements/1.1/contributor>)

(<http://purl.org/dc/terms/contributor>)

## Metadata source

Proposed DCMI Metadata Terms: <http://purl.org/dc/terms/metadataSource>

Label: Metadata Source

Source (database or system) of the metadata record.

Recommended practice is to specify the metadata source by means of its name or URI. It is also possible to give both the name and the URI.

SWAP: source (database or system) of the metadata record describing a scholarly work.

For metadata on scholarly works, common sources include

* ISI Web of Science
* Scopus
* PubMed Central
* ArXiv
* Cab Abstracts

Since names may change over time, a URI should be used, especially when there is one based on a standard identifier.

Note: Institutional repositories may harvest metadata from external sources. Since the source may have an impact on how the metadata can be reused, it is important to keep track of where the metadata came from.

## Presented at

Proposed DCMI Metadata Terms: <http://purl.org/dc/terms/presentedAt>

Label: Presented at

The conference, workshop, shareholder meeting etc. where the work was presented.

SWAP: Conference, workshop or other scientific event where the scholarly work was presented.

Recommended practice is to identify formal meetings such as conferences with a URI. If this is not possible or feasible, a literal value that identifies the meeting may be provided. It is also possible to give both the name and the URI.

## Related Dataset

Proposed DCMI Metadata Terms: <http://purl.org/dc/terms/relatedDataset>

Label: Related Dataset

Dataset referenced in the described work.

SWAP: Dataset referenced in the described scholarly work.

Recommended practice is to identify the dataset with a URI identifying either the dataset or a landing page through which the dataset is accessed.

Subproperty of: Relation (<http://purl.org/dc/elements/1.1/relation>)

(<http://purl.org/dc/terms/relation>)

Note: This property should only be used for resources of type Dataset.

## Related publication

Proposed DCMI Metadata Terms: <http://purl.org/dc/terms/relatedPublication>

Label: Related Publication

Work referencing the described dataset.

SWAP: Scholarly work (publication) referencing the described dataset.

Recommended practice is to identify the related work by means of a URI. If this is not possible or feasible, a string conforming to a formal identification system may be provided.

Subproperty of: Relation (<http://purl.org/dc/elements/1.1/relation>)

(<http://purl.org/dc/terms/relation>)

## Status

Proposed DCMI Metadata Terms: <http://purl.org/dc/terms/status>

Label: Status

The condition or state of the described resource.

Note: Typically used with a controlled vocabulary of statuses.

SWAP: The publication state of the described scholarly work.

In SWAP, the recommended best practice is to use a status from the OpenAIRE vocabulary for publication versions (<https://guidelines.openaire.eu/en/latest/literature/field_publicationversion.html>):

* info:eu-repo/semantics/draft
* info:eu-repo/semantics/submittedVersion
* info:eu-repo/semantics/acceptedVersion
* info:eu-repo/semantics/publishedVersion
* info:eu-repo/semantics/updatedVersion

Subproperty of: Type (<http://purl.org/dc/elements/1.1/type>)

(<http://purl.org/dc/terms/type>)

SWAP Note 1 OpenAIRE uses Type property for these codes. Since they are all related to the publication status of a work, we considered that there is a need for a Type subproperty.

SWAP Note 2 info URIs assigned for these codes are not actionable and there is no additional information about the codes available at <http://www.lse.ac.uk/library/versions> (the URL produces 404 error). However, these info URIs have been used in this proposal instead of plain text terms (draft, submittedVersion, etc).

# SWAP elements

## Creator Group

Proposed DCMI Metadata Terms: <http://purl.org/dc/terms/creatorGroup>

Label: Creator Group

A project or other established group that has created the work together.

Recommended practice is to identify the group with a URI. If this is not possible or feasible, a literal value that identifies the group may be provided. It is also possible to give both the name and the URI.

Subproperty of: Creator (<http://purl.org/dc/elements/1.1/creator>)

(<http://purl.org/dc/terms/creator>)

Note: Use this property for long-standing projects and research groups, especially when the scholarly work does not contain the names of individual authors, or when the project/research group’s role is prominent in the creation of the scholarly work.

## Degree supervisor

Proposed DCMI Metadata Terms: <http://purl.org/dc/terms/supervisor>

Label: Supervisor

A person under whose supervision a degree candidate develops and presents a thesis, mémoire, or a text of a dissertation.

Recommended practice is to identify the supervisor with a URI. If this is not possible or feasible, a literal value that identifies the supervisor may be provided. It is also possible to give both the name and the URI.

Subproperty of: Contributor (<http://purl.org/dc/elements/1.1/contributor>)

(<http://purl.org/dc/terms/contributor>)

## Grant number

Proposed DCMI Metadata Terms: <http://purl.org/dc/terms/grantNumber>

Label: Grant Number

An alpha-numeric string identifying the funding grant under which the work was written.

Subproperty of: Identifier

## Opponent

Proposed DCMI Metadata Terms: <http://purl.org/dc/terms/opponent>

Label: Opponent

A person or organization responsible for opposing a thesis or dissertation.

Recommended practice is to identify the opponent with a URI. If this is not possible or feasible, a literal value that identifies the opponent may be provided. It is also possible to give both the name and the URI.

Subproperty of: Contributor (<http://purl.org/dc/elements/1.1/contributor>)

(<http://purl.org/dc/terms/contributor>)

# Refined elements

## Access rights

DCMI Metadata Terms: <http://purl.org/dc/terms/accessRights>

Label: Access Rights

Current definition of this property in the DCMI Terms namespace is:

“Information about who can access the resource or an indication of its security status.”

This is not applicable to scholarly works. Their access rights are usually not based on security status nor do rights metadata normally specify who can access a scholarly work. Moreover, there is no recommendation to use a controlled vocabulary.

The following note could be added to the DCMI Terms or, alternatively, to the user guide:

For scholarly works, using the COAR (Confederation of Open Access Repositories) vocabulary of access rights (<http://vocabularies.coar-repositories.org/documentation/access_rights/>) is recommended.

Version 1.0 of the vocabulary contains the following terms:

* open access
* embargoed access
* restricted access
* metadata only access

The following recommendation could be added to DCMI Metadata Terms:

Recommended practice is to specify the access right by means of a term or its URI from a controlled vocabulary. It is also possible to give both the term and its URI.

## Is Part Of

DCMI Metadata Terms: <http://purl.org/dc/terms/isPartOf>

In SWAP context, this property can be used to specify host document, a related resource in which the described scholarly work is physically or logically included. For instance, a scientific periodical in which the described research article has been published.

Recommended practice is to identify the related publication by means of a URI. If this is not possible or feasible, a string conforming to a formal identification system or a name may be provided. It is also possible to give both the name and the URI.

“Is Part Of” in DCMI Terms shall be used to provide a link (URI) from the described component part (“child”) to the host resource (“parent”).

Note: There are no practical examples in DCMI Terms or DC User guide on how to use this property in cases that are common for scientific publications, such as linking from an article to conference proceedings or periodicals. User guide and/or DCMI Terms should be revised to accommodate relevant use cases.

## Type

DCMI Metadata Terms: <http://purl.org/dc/terms/type>

Label: Type

The Dublin Core DCMI Type Vocabulary[[6]](#footnote-6) is general and as such not ideally suited for scholarly works.

A better choice for these publications is the COAR Controlled Vocabulary for Resource Type Genres[[7]](#footnote-7). The use of this vocabulary with scholarly works should be recommended either in DCMI Metadata Terms or in the DC User Guide. For instance:

Recommended practice is to use a controlled vocabulary such as the DCMI Type Vocabulary or the COAR Controlled Vocabulary for Resource Type Genres.

# Examples

These examples are all non-normative and included for information purposes only.

## Editor

Example 1 <dcterms:editor><https://orcid.org/0000-0002-1825-0097></dcterms:editor>

Example 2 <dcterms:editor>Carberry, Josiah</dcterms:editor>

Example 3 <dcterms:editor id=<https://orcid.org/0000-0002-1825-0097>>Carberry, Josiah</dcterms:editor>

## Embargo date

Example <dcterms:embargoDate>2020-12-31</dcterms:embargoDate>

## Funder

Example 1 <dcterms:funder>[http://isni.org/isni/0000000404277672</dcterms:funder](http://isni.org/isni/0000000404277672%3c/dcterms:funder)>

Example 2 <dcterms:funder>Wellcome Trust</dcterms:funder>

Example 3 <dcterms:funder id=<http://isni.org/isni/0000000404277672>>Wellcome Trust</dcterms:funder>

## Metadata source

Example 1 <dcterms:metadataSource><http://isni.org/isni/0000000405077840></dcterms:metadataSource>

Example 2 <dcterms:metadataSource>PubMed Central</dcterms:metadataSource>

Example 3 <dcterms:metadataSource id="<http://isni.org/isni/0000000405077840>">Pubmed Central</dcterms:metadataSource>

## Presented at

Example 1 <dcterms:presentedAt>[https://www2020.thewebconf.org](https://www2020.thewebconf.org/)</dcterms:presentedAt>

Example 2 <dcterms:presentedAt>The Web Conference 2020</dcterms:presentedAt>

Example 3 <dcterms:presentedAt id=”[https://www2020.thewebconf.org](https://www2020.thewebconf.org/)”>The Web Conference 2020</dcterms:presentedAt>

Subproperty of: Contributor (<http://purl.org/dc/elements/1.1/contributor>)

(<http://purl.org/dc/terms/contributor>)

Note: The URI and the name may identify either a single conference or a conference series, but both the name and the URI shall identify the same thing. Example 4 is incorrect:

Example 4 <dcterms:presentedAt id=”<https://www.iw3c2.org/>”>The Web Conference 2020</dcterms:presentedAt >

## Related dataset

Example <dcterms:relatedDataset>[http://dx.doi.org/10.17605/OSF.IO/B6KJZ</dcterms:relatedDataset](http://dx.doi.org/10.17605/OSF.IO/B6KJZ%3c/dcterms:relatedDataset)>

## Related publication

Example <dcterms:relatedPublication><https://doi.org/10.1371/journal.pone.0171057>>

</dcterms:relatedPublication>

## Status

Example <dcterms:status>info:eu-repo/semantics/acceptedVersion</dcterms:status>

## Creator group

Example 1 <dcterms:group><http://smear.emu.ee/></dcterms:group>

Example 2 <dcterms:group>SMEAR Estonia</dcterms:group>

Example 3 <dcterms:group id="<http://smear.emu.ee/>">SMEAR Estonia</dcterms:group>

Example 4 <dcterms:group><http://isni.org/isni/0000000093987123></dcterms:group>

Example 5 <dcterms:group>Dublin Core Metadata Initiative</dcterms:group>

Example 6 <dcterms:group id="<http://isni.org/isni/0000000093987123>">Dublin Core Metadata Initiative</dcterms:group>

## Degree supervisor

Example 1 <dcterms:supervisor>[https://orcid.org/0000-0002-1825-0097</dcterms:supervisor](https://orcid.org/0000-0002-1825-0097%3c/dcterms:supervisor)>

Example 2 <dcterms:supervisor>Carberrry, Josiah</dcterms:supervisor>

Example 3 <dcterms:supervisor id=<https://orcid.org/0000-0002-1825-0097>>Carberry, Josiah</dcterms:supervisor>

## Grant number

Example <dcterms:grantNumber>R01GM98765401</dcterms:grantNumber>

## Opponent

Example 1 <dcterms:opponent><http://isni.org/isni/000000012281955X></dcterms:opponent>

Example 2 <dcterms:opponent>Ainsyut'ain, Alberŭt'ŭ</dcterms:opponent>

Example 3 <dcterms:opponent id=<http://isni.org/isni/000000012281955X>>Ainsyut'ain, Alberŭt'ŭ </dcterms:opponent>

## Access rights

Example 1 <dcterms:accessRight>open access</dcterms:accessRight>

Example 2 <dcterms:accessRight id=”<http://purl.org/coar/access_right/c_abf2>”>open access</dcterms:accessRight>

## Is Part Of

Example 1 <dcterms:isPartOf><https://www.thelancet.com/coronavirus><dcterms:isPartOf>

Example 2 <dcterms:isPartOf id=”<https://www.thelancet.com/coronavirus>”>COVID-19 Resource Center<dcterms:isPartOf>

Example 3 <dcterms:isPartOf id=”1474-547X”>Lancet (online)<dcterms:isPartOf>

## Type

Example 1 <dcterms:type>journal</dcterms:type>

Example 2 <dcterms:type id=”http://purl.org/coar/resource\_type/c\_0640”>journal</dcterms:type>

1. http://www.ukoln.ac.uk/repositories/digirep/index/Scholarly\_Works\_Application\_Profile [↑](#footnote-ref-1)
2. http://www.ariadne.ac.uk/issue/50/allinson-et-al/ [↑](#footnote-ref-2)
3. https://www.kiwi.fi/display/Julkaisuarkistopalvelut/Metadatasuositus+julkaisuarkistojen+tekstiaineistolle [↑](#footnote-ref-3)
4. http://ethostoolkit.cranfield.ac.uk/tiki-index.php?page=The+EThOS+UKETD\_DC+application+profile [↑](#footnote-ref-4)
5. http://id.loc.gov/vocabulary/relators.html [↑](#footnote-ref-5)
6. https://www.dublincore.org/specifications/dublin-core/dcmi-type-vocabulary/ [↑](#footnote-ref-6)
7. [http://purl.org/coar/resource\_type](http://vocabularies.coar-repositories.org/pubby/resource_type) [↑](#footnote-ref-7)