Title: Review of Application Profiles - the pipeline
Identifier: http://stage.dublincore.org/usage/meetings/2006/09/manzanillo/profile-pipeline/html/
Source: i:/admin/www/usage/meetings/2006/09/manzanillo/profile-pipeline/index.txt

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Collection Description Application Profile - to be reviewed by UB in Mexico
-- See: http://stage.dublincore.org/usage/meetings/2006/09/manzanillo/profile-cdap/html/

Dublin Core Application Profile for Eprints
-- http://stage.dublincore.org/usage/meetings/2006/09/manzanillo/profile-pipeline/2006-09-21.digirep-Eprints_Application_Profile.pdf
http://stage.dublincore.org/usage/meetings/2006/09/manzanillo/profile-pipeline/2006-09-21.digirep-Functional_Requirements.pdf
http://stage.dublincore.org/usage/meetings/2006/09/manzanillo/profile-pipeline/2006-09-21.digirep-Model.pdf
-- snapshots of: www.ukoln.ac.uk/repositories/digirep/index/Eprints_Application_Profile

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Simple Dublin Core - finalization at 2007 mid-year UB meeting according to work plan [1]
-- http://stage.dublincore.org/usage/meetings/2006/09/manzanillo/profile-pipeline/dc-simple/html/
http://stage.dublincore.org/usage/meetings/2006/09/manzanillo/profile-pipeline/dc-simple/2006-08-12.dc-simple.html

[1] http://stage.dublincore.org/usage/meetings/2006/09/manzanillo/workplan/html/index.html

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Usage Board application profile for describing DCMI metadata terms - 2005 draft
-- http://stage.dublincore.org/usage/meetings/2006/09/manzanillo/profile-pipeline/ub-profile/html/

Library Application Profile - latest version 2004-09-10
-- http://stage.dublincore.org/usage/meetings/2006/09/manzanillo/profile-pipeline/2006-09-21.dc-lib-profile.pdf
-- snapshot of: dublincore.org/documents/2004/09/10/library-application-profile/

DC-Ed Application Profile - 2006-07-20
-- To: dc-ed-ap@u.washington.edu, dc-education@jiscmail.ac.uk

Diane Hillmann: At the DC-Ed meeting in Madrid, the decision
was made to change course somewhat in our approach to
creating an Application Profile, by focusing primarily
on those elements important to education, leaving the
others under the general guidance provided by DCMI. Some
of the impetus for this decision was the difficulties
we were having in bringing interested parties to the
table and keeping the conversation about the AP going,
in the face of competing priorities of those attempting
to put the document together. Given those realities,
it seemed sensible to concentrate on those elements most
relevant to educational purposes, and attempt to come
to closure in time for a thorough discussion in Colima.
For the report of the Madrid session, see:

http://www.ischool.washington.edu/sasutton/dcmi/ed/10-05/Breakout-Report-Madrid.html

The new version, available here:

http://www.ischool.washington.edu/sasutton/dcmi/DC-EdAP-7-18-06.html

Attempts to provide guidance for the following elements:
Audience, Conforms To, Education Level, Instructional
Method, Mediator, Subject, Type.

Several recommended schemes: GEM-BEN (audience),
NSDLEdLvl (educationLevel), NSDLResType (type), UKEC
(educationLevel). UKEL (educationLevel).

US-centric, so want to to gather recommendations for
vocabularies in use outside the US and UK, when those
are in general use and available openly for reuse.

2006-08-16 - DC-Government Application profile

From: Hans Overbeek <Hans.Overbeek@ICTU.NL>

-- Latest draft of the Government application profile at
http://stage.dublincore.org/usage/meetings/2006/09/manzanillo/profile-pipeline/2006-09-21.dcgapwiki.pdf
-- snapshot of: www.dublincore.org/dcgapwiki/

-- Scope and functional requirements (snapshot)

http://stage.dublincore.org/usage/meetings/2006/09/manzanillo/profile-pipeline/2006-09-21.dcgapwiki-DCGAPScope.pdf

-- Position of DCGAP as a reference model:
http://stage.dublincore.org/usage/meetings/2006/09/manzanillo/profile-pipeline/2006-09-21.dcgapwiki-DCGAPosition.pdf

-- Elements needed
http://stage.dublincore.org/usage/meetings/2006/09/manzanillo/profile-pipeline/2006-09-21.dcgapwiki-Elements.pdf

The Editorial Board for the DC-Government Application profile was formed during the DC-Government Working Group meeting at the DC-conference in Leganes, Madrid, with the objectives to discuss and further develop the draft DC-Government Application Profile. The meeting saw value in an Application Profile as a reference model to be used in government implementations. Rather than developing a "one size fits all" AP, this could serve as a good practice example, dealing with issues relevant to governments.

UK e-Government Metadata Standard (e-GMS) - 2006-08-30

From: Linda Humphries <linda.humphries@CABINET-OFFICE.X.GSI.GOV.UK>
Technical Policy Team, Cabinet Office, e-Government Unit

The UK e-Government Metadata Standard (e-GMS) version 3.1 has been published and is available on the UK GovTalk site [1].

The Integrated Public Sector Vocabulary (IPSV) is now the mandated encoding scheme for the Subject element. Additional changes include:

-- Further guidance has been added to the Standard to illustrate the correct expression of elements, refinements and encoding scheme names
-- Examples and notes have been updated
-- Mapping to the UK GEMINI standard has been included.

[1] http://www.govtalk.gov.uk/schemasstandards/metadata_document.asp?docnum=1017

DCAP for Web Resource Discovery in the Government of Canada - May 2006

-- http://www.tbs-sct.gc.ca/im-gi/meta/profil/profil00_e.asp
http://artist.inist.fr/rubrique.php3?id_rubrique=100 (in French)

-- Implementation guide for the DCAP: "Government of Canada Metadata Implementation Guide for Web Resources"
http://www.tbs-sct.gc.ca/im-gi/mwg-gtm/ts-sf/docs/2005/migwr-gpmrw/migwr-gpmrw00_e.asp

"Includes the DC elements which are mandatory in the Government of Canada (title, creator, date, subject and language) as well as audience, coverage (spatial), description, format and type. The Guide includes an introduction to metadata and practical explanations and examples for creating metadata content for federal government Web resources in accordance with Treasury Board of Canada metadata standards."

Open Language Archives Community (OLAC) Metadata - latest version 2006-04-05
-- http://www.language-archives.org/OLAC/metadata.html

Mathematical Literature Application Profile (pointed out by Thomas Fischer)

-- http://stage.dublincore.org/usage/meetings/2006/09/manzanillo/profile-pipeline/2006-09-22.mlap.pdf
-- snapshot of: digreg.mathguide.de/info/metadata/mlap.xml

Kernel Application Profile (KAP) - John Kunze, September 2006

-- http://www.jiscmail.ac.uk/files/DC-KERNEL/Aspec.html
-- http://www.jiscmail.ac.uk/files/DC-KERNEL/kap.txt
Specifies Kernel elements and requirements, and compares the core DC semantics and DCMI Abstract Model with Kernel metadata.

Functional requirements for an Agent Core - latest 2004-02-25
-- http://dublincore.org/groups/agents/agentFRdraft2-2.html
http://dublincore.org/groups/agents/dc2005_dc-agents-meeting.ppt

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Unqualified DC Profile for Canadian Institutional Repositories - 2006-05-05

Mark Jordan <mjordan@sfu.ca>, Head of Library Systems, W.A.C. Bennett Library
Simon Fraser University Burnaby, British

> I am part of a group who is developing an application profile for a set of Canadian Institutional Repositories. We are currently aggregating our OAI-PMH metadata in a search interface (http://carl-abrc-oai.lib.sfu.ca/) implemented using the PKP Metadata Harvester (http://pkp.sfu.ca/pkp-harvester/).
>
> In our application profile, we have decided to 1) use only unqualified Dublin Core elements and 2) concentrate on selecting and/or developing controlled vocabularies and implementation guidelines for populating the uDC elements. We have chosen to stay with uDC elements in order to provide a low barrier to implementation at our partner sites. The goal of this application profile is basically to improve end-user searching of the aggregated metadata. If you are interested in seeing some background information on our activity, http://www.lac-bac.gc.ca/obj/014005/f2/014005-05209-j1-e.pdf provides some examples of the metadata as it stood almost a year ago (I have an article coming out in Library Hi Tech shortly that contains a fuller analysis).

Mapping_the_Eprints_Application_Profile_to_Simple_DC

-- http://www.ukoln.ac.uk/repositories/digirep/index/Mapping_the_Eprints_Application_Profile_to_Simple_DC

Title: Review of Collection Description Application Profile
Identifier: http://stage.dublincore.org/usage/meetings/2006/09/manzanillo/profile-cdap/.index.html
Source: i:/admin/www/usage/meetings/2006/09/manzanillo/profile-cdap/index.txt
Created: 2006-09-03

Note - links to current documents about Application Profiles at:
-- http://dublincore.org/usage/meetings/2006/04/profile-review/

Required reading for UB members:

-- Draft Usage Board review
  -- Summary of the assessments
    http://stage.dublincore.org/usage/meetings/2006/09/manzanillo/profile-cdap/CDAP_review.pdf
  -- Joe's comments
    http://stage.dublincore.org/usage/meetings/2006/09/manzanillo/profile-cdap/WP3_AP_Documentation_1.pdf
  -- Diane's comments
    http://stage.dublincore.org/usage/meetings/2006/09/manzanillo/profile-cdap/WP5_AP_Terms.pdf

-- Documentation submitted by Collection Description WG:
  -- Full CDAP profile
    http://stage.dublincore.org/groups/collections/collection-application-profile/2006-08-24/
  -- Summary CDAP profile
    http://stage.dublincore.org/groups/collections/collection-ap-summary/2006-08-24/
  -- Dublin Core Collection Description Terms
    http://stage.dublincore.org/groups/collections/collection-terms/2006-08-24/
  -- Dublin Core Collection Description Type (CDType) Vocabulary
    http://stage.dublincore.org/groups/collections/colldesc-type/2006-08-24/
  -- Collection Description Frequency [a vocabulary encoding scheme]
    http://stage.dublincore.org/groups/collections/frequency/2006-08-24/
  -- Collection Description Accrual Method [a vocabulary encoding scheme]
    http://stage.dublincore.org/groups/collections/accrual-method/2006-08-24/
  -- Collection Description Accrual Policy [a vocabulary encoding scheme]
    http://stage.dublincore.org/groups/collections/accrual-policy/2006-08-24/

-- A reminder on process
  -- http://stage.dublincore.org/usage/meetings/2006/09/manzanillo/profile-cdap/2006-02-13.process.txt

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2006-08-29 - Pete - Review version of DC CD AP (2006-08-24) available
- http://www.jiscmail.ac.uk/cgi-bin/webadmin?A2=ind0608&L=dc-collections&P=3773
- The following should all be accessible from
http://dublincore.org (and linked to from the Collection
Description WG home page).

-- Full DCAP:
http://dublincore.org/groups/collections/collection-application-profile/2006-08-24/
-- Summary version:
http://dublincore.org/groups/collections/collection-ap-summary/2006-08-24/

The latter is intended to be a very condensed view
of the former -- to enable people to see "at a glance"
what terms are used in the DC CD AP (which I think is quite
difficult to get from the full doc in its current format)
- and/or to act as a sort of "rich table of contents" for
the former, but it is not intended to be stand-alone. I
deliberately stripped out some of the information that was
previously in the summary to avoid duplication/redundancy.

The main change in this version is to separate out a list
of properties used to describe a Collection that is also a
Collection-Description, as discussed recently.

I also went through the comments and tried to make sure the
text was compatible with the terminology of the DCMI Abstract
Model and that phrasing was more or less consistent throughout
the document.

To minimise redundancy, I moved most of the introductory
material out of the summary document and expanded the
introduction in the main DCAP document. That really means
that the summary document is pretty much a "ready reference"
tool only, and readers coming to the DC CD AP really need to

look at the full document to understand it.

(I'm afraid I had no inspiration in coming up with a good alternative label for "Usage in this DCAP" so I've stuck with the current form.)

I've also created a separate document describing the "Collection Description Terms", i.e. the new properties, vocabulary encoding schemes and syntax encoding schemes coined for use in the DC CD AP:

-- Dublin Core Collection Description Terms
http://dublincore.org/groups/collections/collection-terms/2006-08-24/

The Collection Description Type Vocabulary has been updated, to correct errors and to separate the descriptive text out into a one-line "Definition" and a more discursive "Comment".

-- Dublin Core Collection Description Type (CDType) Vocabulary
http://dublincore.org/groups/collections/colldesc-type/2006-08-24/

There are full descriptions of the sets of terms in three vocabulary encoding schemes:

-- Collection Description Frequency [a vocabulary encoding scheme]
http://dublincore.org/groups/collections/frequency/2006-08-24/

-- Collection Description Accrual Method [a vocabulary encoding scheme]
http://dublincore.org/groups/collections/accrual-method/2006-08-24/

-- Collection Description Accrual Policy [a vocabulary encoding scheme]
http://dublincore.org/groups/collections/accrual-policy/2006-08-24/

Domains and ranges - 2006-08-29 Pete clarification

Also the Usage Board is discussing the issue of domains and ranges for DCMI properties, so I held back from coining any new classes where it seems likely that the UB will define suitable classes in the near future (e.g. date/date-range etc). So, the CLD terms properties do have implicit ranges, even though they aren't explicitly described at the moment. Essentially, the content of the RDF representations should for the moment be treated as something of an indication of intent, rather than the finished article.

Errata - 2006-08-29

Accrual Method [encoding scheme] documentation says that it replaces

http://www.ukoln.ac.uk/metadata/dcmi/collection-DCCDAccrualPolicy/2004-08-18/

when it should refer to

http://www.ukoln.ac.uk/metadata/dcmi/collection-DCCDAccrualMethod/2004-07-30/

Accrual Method [encoding scheme] documentation says:

> The Collection Description Accrual Method Vocabulary provides a set of
> terms that can be used as values of the dcterms:accrualPolicy property

when it should say

> The Collection Description Accrual Method Vocabulary provides a set of
> terms that can be used as values of the dcterms:accrualMethod property

Collection Description Accrual Policy [encoding scheme] says that it replaces

http://www.ukoln.ac.uk/metadata/dcmi/collection-DCCDAccrualPolicy/2004-08-18/

when it should refer to

http://www.ukoln.ac.uk/metadata/dcmi/collection-DCCDAccrualPolicy/2004-07-30/

Specific assignments

```
-- WP1 General (Stuart)
   -- "Does the AP meet the community's needs?"

-- WP2 Functional requirements and Data model (Andy)
   -- Are the functional requirements for the AP stated,
      and does the AP conform to the stated functional requirements?
   -- Does the AP data model make sense?
   -- Corollary question: Does an AP need its own data model?

-- WP3 AP Documentation 1 (Joe)
   -- Are the purpose and scope of the AP clearly stated?
   -- Is the introductory material complete and adequate?
   -- Are the terms well described - what descriptive elements are present?

-- WP4 AP Documentation 2 (Akira)
   -- How sensible are the labels for the descriptive elements?
   -- Are the obligations consistent across the properties?
   -- Do the recommended encoding schemes exist?

-- WP5 AP Terms (Diane, Andrew)
   -- Use the term decision tree,
      http://dublincore.org/architecturewiki/TermDecisionTree:
      -- Check that each term conforms to the Abstract Model
      -- Are any AP-specific encoding schemes appropriate?
      -- Are the terms in the encoding scheme defined adequately,
         are the terms sensible, do they conform?


------------------------------------------------------------------------
Pete on the RDF representations - 2006-08-29

-- http://dublincore.org/groups/collections/collection-terms/2006-08-24/cldterms.rdf
-- http://dublincore.org/groups/collections/colldesc-type/2006-08-24/cdtype.rdf
-- http://dublincore.org/groups/collections/frequency/2006-08-24/freq.rdf
-- http://dublincore.org/groups/collections/accrual-method/2006-08-24/accmeth.rdf
-- http://dublincore.org/groups/collections/accrual-policy/2006-08-24/accpol.rdf

The RDF data should essentially be an alternative
representation of what is in the HTML docs i.e. the only
question marks are to do with that representation (e.g. the
relationship etween a value in a VES and the VES, if we change
the DCAM so that it is not is-instance-of (rdf:type))

I put up RDF/XML representations of the "collection description
terms", the type vocabulary, and these three vocabularies,
and the PURLs for the terms should de-reference to those
RDF/XML docs (i.e. in the same way DCMI serves one doc per
"namespace"). But some of that data is incomplete/tentative,
pending some decisions about the DCAM and/or property
ranges/domains, so at the moment it's probably best to treat
the RDF/XML stuff more or less as a "placeholder".

All the term URIs (I hope) de-reference to something useful --
at the moment that's an RDF/XML document, but in the future
we might set things up so that agents can get alternative
representations (e.g. HTML for a browser displaying stuff to
a human reader, RDF/XML for an app that wants to get the data
about the relationships between terms in a form it can act on).

Note that the current RDF representations listed above
are tentative/incomplete, pending discussions in the DC
Architecture WG about changes to the DCMI Abstract Model, which
would have an impact on how e.g. we describe the relationship
between a vocabulary encoding scheme and a member term/value
within that vocabulary encoding scheme.
```

Eprints Application Profile

From DigiRepWiki

Contents

- 1 Introduction
- 2 Objectives
- 3 Deliverables
- 4 Documents
- 5 Workplan
- 6 Working group
  - 6.1 Feedback group
- 7 Key supporting resources
- 8 Background
- 9 Meetings

Introduction

This page is part of the JISC Digital Repository Wiki. It is being used to support the activities of a UK (JISC) working group that is developing a Dublin Core Application Profile for describing scholarly publications (eprints) held in institutional repositories. This work is being undertaken within the JISC Digital Repositories programme and is being coordinated by Julie Allinson (UKOLN, University of Bath) and Andy Powell (Eduserv Foundation).

Objectives

The objectives of the working group are to develop:

- a Dublin Core application profile for eprints;
- any implementation / cataloguing rules, that might be necessary to support functionality offered by the search service, such as fielded searches of the metadata or indexing the full-text of the research paper;
- a plan for early community acceptance and take-up, bearing in mind current practice.

In the context of this work an eprint is defined to be a *scientific or scholarly research text* (as defined by the Budapest Open Access Initiative (http://www.earlham.edu/~peters/fos/boaifaq.htm#literature)), for example a peer-reviewed journal article, a preprint, a working paper, a thesis, a book chapter, a report, etc.

Deliverables

- Functional Requirements Specification
- Entity-Relationship Model
- ePrints DCMI Application Profile and Cataloguing Guidelines
- Community Take-up and Acceptance Plan

Documents

- Functional Requirements
- Model
- ePrints Application Profile
  - Eprints Type Vocabulary Encoding Scheme
  - Eprints EntityType Vocabulary Encoding Scheme

    - Eprints Status Vocabulary Encoding Scheme
    - Eprints AccessRights Vocabulary Encoding Scheme
- Mapping the Eprints Application Profile to Simple DC
- Automatic Generation of Eprint Metadata
- Community Acceptance Plan

Supplementary Documents

- Issues with current use of simple DC
- A note about FRBR
- A note about the DCMI Abstract Model
- A note about DC-Text

Workplan

- Develop a functional requirements specification, outlining what kinds of functionality the application profile is intended to support. (draft by mid-May 2006, completed by mid-June 2006)
- Develop a simple eprint entity-relationship model on which the application profile can be based. (draft by mid-May 2006, completed by mid-June 2006)
- Develop a Dublin Core application profile corresponding to the model. (draft by mid-May 2006, completed by end of June 2006)
- Stakeholder kick-off meeting (late May 2006, to consider pre-prepared drafts above)
- Develop a set of simple cataloguing guidelines for each of the properties in the application profile. (draft by mid-June 2006, completed by mid-July 2006)
- Liaise with the DC Architecture WG and the DC Citations WG to ensure overall compatibility with the DCMI Abstract Model and that citations are handled correctly within the application profile. (Ongoing until end July 2006)
- Set up DCMI Eprints Working Group, to carry work forward and engage with wider community. (Ongoing during July 2006 and beyond)
- Develop plan for early community acceptance and take-up (draft by end of June 2006, complete by end of July 2006)

All work will be undertaken through a working group mailing list, one or two face to face meetings and this Wiki.

Working group

The following people have joined the first iteration of the working group:

1. Julie Allinson (Coordinator/UKOLN)
2. Andy Powell (Coordinator/Eduserv Foundation)
3. Phil Cross (RDN)
4. Linda Kerr (RDN)
5. Jessie Hey (eprints Southampton)
6. Jim Downing (DSpace Cambridge)
7. Bill Hubbard (SHERPA)
8. Chris Awre (Linking Repositories Study / Fedora)
9. Philip Hunter (IRIScotland)
10. Pete Johnston (Eduserv Foundation)
11. Andrew Wilson (AHDS)
12. Ann Apps (MIMAS)
13. Robina Clayphan (British Library)
14. Frances Shipsey (LSE, Versions Project)
15. Greg Tourte (UKOLN, RDN)

Feedback group

The feedback group will engage in discussion about the work via a JISCMAIL discussion list. The group includes:

- Rachel Heery (UKOLN)

- Chris Gutteridge (eprints.org)
- Neil Jacobs (JISC)
- Brian Matthews(CCLRC)
- Catherine Jones (CCLRC)
- Gordon Dunsire (CDLR)
- Dennis Nicholson (CDLR)
- Mark Merifield (Biomed Central)
- Theo Andrew (DSpace Edinburgh)
- Members of the DCMI community
- Representatives of the JISC Digital Repositories Programme, including
  - Roddy MacLeod (PerX)
  - Malcolm Moffat (PerX)
  - Paul Needham (EThOS)
- European counterparts, including
  - Peter van Huisstede (Rotterdam University - DARE)
- Representatives from the UK repositories community

Key supporting resources

- DCMI Abstract Model - http://dublincore.org/documents/abstract-model/
- DCMI Usage Board - http://dublincore.org/usage/
- DCMI Architecture Working Group - http://dublincore.org/groups/architecture/
- Using Simple DC to describe ePrints - http://www.rdn.ac.uk/projects/eprints-uk/docs/simpledc-guidelines/
- DC-TEXT (draft) - http://dublincore.org/architecturewiki/DCText
- Guidelines for Encoding Bibliographic Citation Information in Dublin Core Metadata - http://dublincore.org/documents/dc-citation-guidelines/
- NISO/ALPSP Working Group on Versions of Journal Articles - http://www.niso.org/committees/Journal_versioning/JournalVer_comm.html
- EPRINTS-APPLICATION-PROFILE mailing list home (http://www.jiscmail.ac.uk/lists/EPRINTS-APPLICATION-PROFILE.html)

Background

The JISC is establishing a UK search service for content held in UK repositories. This activity will be broadly based on previous work in this area undertaken by the ePrints UK JISC-funded project. The first iteration of the service will be rather basic, and will focus on eprints (research papers) only. However, even to establish this first iteration, metadata describing research papers in UK repositories will need to be more uniformly structured than at present. Some preliminary work is therefore necessary to agree on this structure, which will take the form of a DC application profile, plus some rules on its implementation, and plans to achieve community acceptance and take-up. This work acknowledges that other activities are being undertaken to improve interoperability across digital repositories (for example the Mellon Foundation meeting in New York) but considers that developing a Dublin Core application profile for eprints is a useful undertaking in its own right.

The UK audience for the work includes:

- the JISC repositories search service and other parts of the JISC repositories programme;
- the eprints repositories community in the UK, especially those running live eprints repositories, and those about to establish such repositories.

Clearly, there will also be a wider (global) audience who are interested in the outcomes of this work.

The work will inform the first iteration of the JISC repositories search service (no target date set, but anticipated to be during 2006). To do this it must attract early community acceptance. Therefore, the DC application profile and community acceptance and take-up plan need to be complete by the end of July 2006. This will allow institutional repository managers to schedule any necessary conversion work.

Meetings

Eprints Application Profile Working Group - King's Fund, London - 5th June 2006, 11am-4pm (Minutes)

Retrieved from "/repositories/digirep/index/Eprints_Application_Profile"

Categories: Themes | ThemeInformationModel | EprintsApplicationProfile

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Functional Requirements

From DigiRepWiki

This document is one of several produced as part of the Eprints Application Profile Wiki. See also:

- **Functional Requirements**
- Model
- EPrints Application Profile
- Community Acceptance Plan
- Mapping the Eprints Application Profile to Simple DC

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  - 2.1 Designated Community
  - 2.2 Stakeholder community
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  - 3.1 Methodology
  - 3.2 Conclusions from Eprints UK
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  - 4.5 Extensibility
  - 4.6 Added-value services
  - 4.7 Identifying the full-text
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  - 4.9 Version identification
  - 4.10 Navigation between versions
  - 4.11 Most appropriate copy
  - 4.12 Fielded searching
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  - 4.19 Citation analysis
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  - 4.21 Names and name authority
  - 4.22 Statement of responsibility
  - 4.23 Provenance
  - 4.24 Research funder and project code
  - 4.25 Affiliation
  - 4.26 Copy is made available by
  - 4.27 Metadata is made available by

- 4.28 Intermediate hosts of a metadata record
- 4.29 Human- and machine-generated metadata
- 4.30 Publication title
- 4.31 Multiple titles
- 4.32 Rights
- 4.33 Access restrictions
- 4.34 Copyright holders
- 4.35 Dates
- 4.36 Translated abstract
- 4.37 Embargo periods

Scope

The document offers a functional requirements specification for the Eprints Application Profile. An analysis of the community served by the profile and an indication of the methodologies used are also included.

From the JISC specification for the work:

- Metadata:
  - In scope: DC elements plus any additional elements necessary
  - Out of scope: other metadata formats
- Identifiers:
  - In scope: Use of identifiers to link from description to related files (eg full text files such as pdf, HTML, etc); also use of identifiers for the description itself, for related resources etc.
  - Out of scope: Other uses of identifiers.
- Controlled vocabularies (subject classification, name authority, etc):
  - In scope: Ensuring the application profile is hospitable to the use of a variety of subject access solutions e.g. classification schemes, controlled vocabularies, name authority lists
  - Out of scope: decisions on terminology solutions
- Complex objects:
  - In scope: Establishing an understanding of existing work in this area and prioritising requirements
  - Out of scope: decisions on how to model complex objects
- Additional search entry points e.g. Repository of origin
  - In scope: inclusion of properties required to fulfil other search requirements such as institution of origin, research funder, national and regional views. These requirements will be provided by RDN.

In addition:

- Citations and references
  - In scope: Bibliographic citations for eprints and document references citing other works
  - Out of scope: Citation analysis solutions

Stakeholders and designated community

Designated Community

- Implementers of UK Institutional Repositories search service (http://www.intute.ac.uk/projects.html) - Intute, UKOLN, Sherpa
- Managers and administrators of UK eprint repositories
- Implementers of the Prospero interim repository (http://edina.ac.uk/projects/prospero/index.html) - Edina, Sherpa

Stakeholder community

The following have a wider stake in the work and need to be engaged in order to ensure that the Designated Community is targeted.

- Repositories search service
  - Implementers of this service
  - Users of the search service
- JISC Digital Repositories Programme
- JISC Capital Programme - Repositories and Preservation
- Eprint repositories community in the UK
  - Repository managers, administrators and technical staff
  - Software developers of repository software (e.g. eprints.org, DSpace, Fedora)
- JISC
- DCMI
- Other aggregators and search services, e.g. IRIScotland, PerX, ARROW
- Other funding bodies

Requirements gathering

Methodology

- Review conclusions from Eprints UK
- Identify Issues with current use of simple DC
- Review existing practice
- Review existing or proposed application profiles
- Discussion and input from the working group, feedback group, wider community
- Gather/write scenarios and use cases

Conclusions from Eprints UK

The final report from the Eprints UK (http://www.rdn.ac.uk/projects/eprints-uk/) project contained a number of conclusions relevant to the current work (Final Report (http://www.rdn.ac.uk/projects/eprints-uk/docs/final-report/eprints-uk-final-20050316.pdf)).

These included the following:

- Technical barriers to successful aggregation of metadata from institutional repositories
  - issues with the quality of metadata
  - the consistency of metadata
  - the handling of complex objects
  - the lack of a common approach to linking to full text

"The project addressed these to some extent by proposing a Dublin Core eprints application profile. However, adoption of this profile could not be a priority for the FAIR programme as most projects of necessity concentrated on establishing and populating their archives."

- Issues with the simple Dublin Core profile:
- encoding the location and type of the full-text file
- the meaning of each field can be interpreted in various different ways

"Simple DC is not targeted at describing eprints specifically so there is more to the description of an eprint than simple DC will allow. To get round these limitations of simple DC, some repositories try to put more information than necessary into the Dublin Core fields. This varying use of metadata can lead to difficulties for end-users who are trying to discover eprints across multiple repositories".

Recommendations from Eprints UK

- There should be further investigation into the user requirements for resource discovery services built on institutional repositories. In particular, this work should explore how an aggregation of metadata from UK repositories would interoperate with other international collections.
- More effort should be made to achieve widespread agreement with and adoption of the recommendations for using simple DC to describe eprints.
- Repository software suppliers and the administrators of eprint archives should be encouraged to adopt the

simple recommendations for linking from the 'jump-off' page to the full text of the eprint. Work should be funded at an international level to agree how best to model eprints as 'complex objects' (e.g. as works and manifestations) and how to encode such complex objects in XML (e.g. by using METS or MPEG-21 DIDL).
- There should be more investigation into the issues associated with name authority control for eprints and in particular into how best to maintain and expose authoritative name-based services and how best to integrate such services into the eprint workflow.

Existing practice

Local practices can be seen by searching repositories, examples:

- eprints.org, e.g. e-Prints Soton (http://eprints.soton.ac.uk/)
- DSpace, e.g. Edinburgh Research Archive (http://www.era.lib.ed.ac.uk/)
- Fedora, e.g. Queensland QUT (http://eprints.qut.edu.au/)
- Other, e.g. CCLRC ePubs (http://epubs.cclrc.ac.uk/)

Existing or proposed application profiles

- Eprints UK - Using simple Dublin Core to describe eprints (http://www.rdn.ac.uk/projects/eprints-uk/docs/simpledc-guidelines/)
- DSpace - DSpace metadata (http://www.dspace.org/technology/metadata.html)
- Eprints.org comes with some out-of-the-box metadata
- Arrow (http://search.arrow.edu.au/) discovery service, Australia - ARROW application profile (http://www.arrow.edu.au/docs/files/harvesting.pdf)
- DARE - DARE use of Dublin Core version 2.0 (http://www.surf.nl/download/DARE%20use%20of%20DC%20v.%202.0.pdf) (NB: DARE are working on version 3.0, using 'XXQDC: Qualified Dublin Core eXtended and Extensible' following the idea of MPEG21/DIDL packages)
- Canadian Repository Metadata Interest Working Group (http://www.carl-abrc.ca/projects/institutional_repositories/metad_int_gp-e.html)
- Swedish SVEP project Metadata model (http://www.svep-projekt.se/masters-theses/Metadata_model/)
    - Recommendations for harmonising metadata descriptions (http://epc.ub.uu.se/files/rek1_0_en.pdf) of electronically published scientific publications from Swedish universities and university colleges
    - National format for publication databases (http://epc.ub.uu.se/files/publ1_2_en.pdf) (local registers of academic publications)
- ETD-MS: an Interoperability Metadata Standard for Electronic Theses and Dissertations -- version 1.00, revision 2 (http://www.ndltd.org/standards/metadata/current.html)
- DiVa metadata application profile (http://epc.ub.uu.se/diva-app-profile/) , part of the DiVa (http://www.diva-portal.org/) project in Sweden

Scenarios and Use case

Wherever possible, usage scenarios exist to support the requirements in the Functional Requirements Specification, as identified below.

Functional Requirements Specification

Based on the requirements gathering activities indicated above, the Eprints Application Profile must support, or make recommendations towards supporting the following requirements:

Richer metadata set

- ***Requirement***: Provide a richer set of metadata than is currently possible with simple DC, see Issues with current use of simple DC
- ***Usage scenario***: In current practice, harvesting or cross-searching multiple repositories is faced with a number of metadata-related issues. One major issue is that the 15 simple Dublin Core metadata elements do not offer the level of detail which describing eprints requires. A richer set of metadata would enable aggregators to offer services built upon repository metadata and content. (Richer metadata set)

- ***Proposed solution***: ePrints Application Profile proposes a set of richer metadata.

Consistent metadata

- ***Requirement***: Facilitate the creation and sharing of consistent metadata.
- ***Usage scenario***: An aggregator is setting up a search service whereby they can provide cross search, browse and filter capability across metadata harvested using OAI-PMH from a wide variety of repositories implemented on different software platforms. The aggregator wants to ensure that the data being harvested into the service is consistent, both in terms of the metadata elements used and the contents of those elements. At present, the use of simple Dublin Core has led to a situation where different repositories have used the loosely defined Dublin Core elements is different ways. (Consistent metadata for aggregator search service)
- ***Proposed solution***: ePrints Application Profile tailored to requirements and will offer guidance.

Preservation metadata approaches

- ***Requirement***: Be compatible with preservation metadata approaches.
- ***Proposed solution***: Representative from AHDS is included in the Working Group.

Library cataloguing approaches

- ***Requirement***: Be compatible with library cataloguing approaches
- ***Proposed solution***: Representative from the DCMI-Libraries Working Group is included in the Working Group.

Extensibility

- ***Requirement***: Support extensibility of the application profile for other types of material.
- ***Usage scenario***: The current scope of the Eprints Application Profile work has a narrow definition. If the Profile gains community acceptance, its users may wish to use the Profile for a wider range of materials types that fall under the broader remit of research output (e.g. raw research data, images, multimedia etc.). Other application profiles may exist for other data types, and it would also be beneficial to the community if the approaches taken by this and other application profiles were mutually supportive and could be successfully mapped. (Extensibility of application profile)
- ***Proposed solution***: Model could be extended through the use of the dc:type element.

Added-value services

- ***Requirement***: The Eprints Application Profile should be sustainable, extensible and robust enough to support future added-value services.
- ***Usage scenario***: The UK repositories search service would like to support a range of value-added services in the future. These might include citation analysis of work and/or expressions. (Added-value services)
- ***Proposed solution***: Model could be extended; recommendations for future developments will be proposed.

Identifying the full-text

- ***Requirement***: Implement an unambiguous method of identifying the full-text(s). For further details, see the conclusions from the Eprints UK project (quoted above).
- ***Usage scenario***: An aggregator harvests metadata records for eprints from a wide variety of repositories. In so doing, it finds that there is no common approach to linking to full-text(s) and therefore any automated means of providing links to the full-text(s) are unreliable. The aggregator needs an unambiguous means of identifying the locations of full-text(s). (Unambiguous identification of the full-text(s) of an eprint)
- ***Proposed solution***: Manifestation isAvailableAs element.

Identifying metadata-only records

- ***Requirement***: Enable identification of metadata-only records.
- ***Usage scenario***: A user of a repository or aggregation service finds an Expression of an Eprint that is of interest but can see clearly that there is only a metadata record for that Expression, i.e. there is no available copy.

Alternative Expressions, for which Copies are available, are easily located and the user can navigate to those other Expressions easily. (Availability and alternatives)

- ***Proposed solution***: An empty Manifestation isAvailableAs element.

Version identification

- ***Requirement***: Offer a preliminary Recommendation to version identification issues. These include different revisions, statuses, translations and multiple formats.
- ***Usage scenario***: Repository x contains a range of 'versions' of a particular eprint, including several numbered drafts, some significantly different to each other and some bearing only minor revisions. It also contains the unrefereed author's manuscript as submitted to the journal and the refereed publisher's proof. In addition, the published version has been translated into Swedish and French, and these two translations are also available in the repository. An aggregator would like to be able to pick which 'versions' it harvests metadata for (e.g. drafts might be considered out of scope). An aggregator search service would like to make clear, within its search results or browse tree, that these versions are associated with a single 'work'. It also wants to be able to present clear information about the differences between them. (The versions question)
- ***Proposed solution***: The Model groups different 'versions' together; translations and revisions are identified by the Has Version and Has Translation elements; additional versioning elements included (Version Number or String, Description); the Profile contains a space for additional Status values to identify differences between versions. JISC VERSIONS project are represented on the Working Group.

Navigation between versions

- ***Requirement***: Support navigation between different 'versions' of the same eprint
- ***Usage scenario***:A user of a repository or aggregation service finds an Expression of an Eprint that is of interest but can see clearly that there is only a metadata record for that Expression, i.e. there is no available copy. Alternative Expressions, for which Copies are available, are easily located and the user can navigate to those other Expressions easily. (Availability and alternatives)
- ***Proposed solution***: The Model facilitates this by grouping different 'versions' together.

Most appropriate copy

- ***Requirement***: Support identification of the most appropriate or latest Copy of a discovered version
- ***Usage scenario***: When harvesting from a repository, the UK repositories search service wants to ensure that it harvests the metadata record for the latest and most appropriate 'version(s)' of a particular eprint and to ensure that its metadata always points to the latest or most appropriate version(s). (The latest version)
- ***Proposed solution***: Date Modified element.

Fielded searching

- ***Requirement***: Support search of any, or all, elements, particularly of title, author, description, keyword.
- ***Usage scenario***: Simple DC does not contain an element for journal, conference or publication name. The UK repositories search service wants to offer its users the facility to search, browse or filter by this element. In addition, they also want a citation that can be used in the context of OpenURLs and OpenURL resolvers. (Search or browse by journal, conference or publication title)
- ***Usage scenario***: An aggregator wants to offer advanced search, browse and filtering capabilities for a wide range of metadata elements. It has found that the different users of its service have different requirements, some needing only the simplest of searches, but others requiring much more refined search, browse and filtering capabilities. Machine-to-machine cross-searches also need to interrogate specific metadata elements. For journal publication, peer review is an established process which bestows certain assurances about the authority of a piece of work. Filtering by peer review status is a particular requirement for some searchers. (Search, browse and filter by any element)
- ***Proposed solution***: Richer element set facilitates this.

Browse by any element

- ***Requirement***: Support browse by any element, as required. This does not including browsing of description or identifier elements, but may include browse by keyword, author, date, publisher, journal, publication, conference, book, series name and originating repository / institution.

- ***Usage scenario***: Simple DC does not contain an element for journal, conference or publication name. The UK repositories search service wants to offer its users the facility to search, browse or filter by this element. In addition, they also want a citation that can be used in the context of OpenURLs and OpenURL resolvers. (Search or browse by journal, conference or publication title)
- ***Usage scenario***: An aggregator wants to offer advanced search, browse and filtering capabilities for a wide range of metadata elements. It has found that the different users of its service have different requirements, some needing only the simplest of searches, but others requiring much more refined search, browse and filtering capabilities. Machine-to-machine cross-searches also need to interrogate specific metadata elements. For journal publication, peer review is an established process which bestows certain assurances about the authority of a piece of work. Filtering by peer review status is a particular requirement for some searchers. (Search, browse and filter by any element)
- ***Proposed solution***: Richer element set facilitates this.

Controlled vocabularies

- ***Requirement***: Support subject browse based on knowledge of controlled vocabulary
- ***Usage scenario***: Repository X classifies its resources using the Library of Congress Subject Headings. Repository Y uses MESH terms or it's biomedical resources. An aggregator would like to offer a subject browse facility based on the different vocabularies used. In order to do this it needs be able to establish which terms come from which vocabularies. (Browse by subject, using controlled vocabularies)
- ***Proposed solution***: Subject element allows for use of vocabulary encoding schemes.

Filtering of search results and browse tree

- ***Requirement***: Support filtering of search results and browse tree. For example, by type, publisher, date range, status and version
- ***Usage scenario***: An aggregator wants to offer advanced search, browse and filtering capabilities for a wide range of metadata elements. It has found that the different users of its service have different requirements, some needing only the simplest of searches, but others requiring much more refined search, browse and filtering capabilities. Machine-to-machine cross-searches also need to interrogate specific metadata elements. For journal publication, peer review is an established process which bestows certain assurances about the authority of a piece of work. Filtering by peer review status is a particular requirement for some searchers. (Search, browse and filter by any element)
- ***Proposed solution***: Richer element set facilitates this.

Identifying available copies

- ***Requirement***: Enable movement from search results and browse tree to available copies
- ***Usage scenario***: A user has completed searching or browsing and has identified which items in the list are of interest. The results are displayed in such a way that they can move easily from a basic listing to find out precisely what full-text(s) are available. (Easy identification of all available copies)
- ***Proposed solution***: Profiles captures all necessary information to facilitate this.

Filter by format

- ***Requirement***: Support filtering of available copies by format.
- ***Proposed solution***: Format element.

OpenURL

- ***Requirement***: Enable movement from search results and browse tree to OpenURL link server. The Profile should be suitable for use in the context of OpenURLs and OpenURL resolvers i.e. support navigation/discovery of particular version of an eprint (e.g. most recent version of the Author's Original) and navigation/discovery of most appropriate copy of discovered 'version'.
- ***Usage scenario***: The UK repositories search service would like to support a range of value-added services in the future. These might include citation analysis of work and/or expressions. (Added-value services)
- ***Proposed solution***: Bibliographic Citation element.

Citation analysis

- ***Requirement***: Support citation analysis between expressions
- ***Proposed solution***: Bibliographic Citation element for each Expression.

Dublin Core Citations WG

- ***Requirement***: Be compatible with dc-citation WG recommendations
- ***Action***: DCMI Citation Working Group representative on Working Group.

Names and name authority

- ***Requirement***: Provide for an authoritative form of Agent names, to include personal names (authors) and corporate names (publishers, funders).
- ***Usage scenario***: Having harvested a number of repositories, an aggregator is faced with a number of authors with similar names. It is difficult to disambiguate these names without some additional analysis or information from other sources. If an authority name form was used, the author would be unambiguously identified. (Authority names)
- ***Proposed solution***: Agent entity.

Statement of responsibility

- ***Requirement***: Enable the author name, as it appears on an eprint, to be captured.
- ***Proposed solution***: Creator element.

Provenance

Research funder and project code

- ***Requirement***: Enable identification of the research funder and project code
- ***Usage scenario***: A research funder has mandated deposit of materials into repositories. In order to check this using automated means, a repository must offer details of the funder and project code for works associated with a particular funded piece of research. (Identify funder and project code)
- ***Proposed solution***: Funder element.
- ***Note***: Project code is not included in the current profile.

Affiliation

- ***Requirement***: Enable identification of affiliation of an eprint
- ***Usage scenario***: For its RAE return, or other purposes, a department/institution wants to be able to easily browse a list of eprints submitted by authors affiliated with that department/institution. To do this, it would ideally use a service that could aggregate this information from many sources. This list should contain both eprints deposited in the department's/institution's own repository and those deposited in other repositories. Deposit in other repositories might happen because an author has decided to use a subject repository, or because the eprint was deposited by another of the co-authors into their departmental/institutional repository. If an author moves department, eprints created whilst in the employ of a particular department should maintain information identifying that department/institution, rather than the department/institution to which an author has moved. (Identifying institutional affiliation and Identifying departmental affiliation)
- ***Proposed solution***: Affiliated Institution element.
- ***Note***: The above usage scenarios, and the Profile, do not allow the associated between the author and institution/department to be maintained over time. For example, if an eprint has multiple authors (x, y and z) from different institutions (a, b and c) and author x, moves from institution a to institution g, the metadata specified by the application profile contains information about their current institution g (Agent) and it would know that the eprint is affiliated with institution a (and not with g), but it can no longer tie author x to institution a.
- ***Note***: The Profile currently includes Institution only and does not go down to School/Department level; department/school out of current scope.

Copy is made available by

- ***Requirement***: Enable identification of the repository or other service making available the copy of an eprint.
- ***Usage scenario***: A user, or service, wishes to discover what other copies, or other services, a repository offers. (Copy is made available by)
- ***Proposed solution***: Is Part Of element.

Metadata is made available by

- ***Requirement***: Enable identification of the repository or other service making available the metadata about an eprint.
- ***Usage scenario***: A user, or service, wishes to discover what other metadata records, or other services, a repository offers. (Metadata is made available by)
- ***Proposed solution***: Out of scope. This information is considered administrative and would be included in the OAI-PMH response.

Intermediate hosts of a metadata record

- ***Requirement***: Enable identification of the intermediate hosts of a metadata record.
- ***Usage scenario***: In most cases, when an aggregator harvests from a repository, there is an implicit trust in the metadata being harvested. In cases where records are transmitted across intermediate hosts, each host in the chain must be trusted to accurately reproduce the record. An aggregator at one end of the chain wants to be able to identify the hosts through which the record has passed. If these intermediate hosts have altered the metadata record, this should be made apparent. (Intermediate hosts)
- ***Proposed solution***: Outside current scope.

Human- and machine-generated metadata

- ***Requirement***: Enable the distinction between human-generated and machine-generated metadata to be maintained, particularly of keywords.
- ***Usage scenario***: [supplied by Emma Tonkin] Machine-generated metadata will have characteristics that reflect its origin (as of course will human-generated values). Providing a marker would allow potential issues to be sidestepped as and when they occur. As an example, say someone implements a keyword extraction mechanism that performs badly on certain categories of document, pulling out irrelevant keywords. The record as a whole remains useful, but it may be that the keywords should be weighted appropriately according to the level of confidence that the metadata consumer has in the accuracy of the information in the current context, which implies providing sufficient information to inform that decision. (Human- and machine- generated metadata)
- ***Action***: Outside current scope.

Publication title

- ***Requirement***: Support disambiguation of publication title
- ***Usage scenario***: Simple DC does not contain an element for journal, conference or publication name. The UK repositories search service wants to offer its users the facility to search, browse or filter by this element. In addition, they also want a citation that can be used in the context of OpenURLs and OpenURL resolvers. (Search or browse by journal, conference or publication title)
- ***Proposed solution***: Bibliographic Citation element contains Journal title.

Multiple titles

- ***Requirement***: Support title changes between expressions and the main Eprint (Scholarly Work)
- ***Usage scenario***: Several Expressions of the same work exist, with slight changes to the title. In addition, a translation is available, with a translated title. Multiple titles cause confusion to aggregating services and their users. A single 'main title' should be provided for use in search results and browse trees. Alternative titles should be included with the metadata record. (Multiple titles)
- ***Proposed solution***: Profile allows for different titles.

Rights

Access restrictions

- ***Requirement***: Facilitate identification of open access materials
- ***Usage scenario***: A user of a repository aggregation service wishes to know whether a particular Copy is open access, or subject to some restrictions on access rights. The aggregator can provide this information easily and unambiguously. (Open access, or not)
- ***Proposed solution***: Access Rights and Licence elements.

Copyright holders

- ***Requirement***: Enable identification of copyright holders of different expressions
- ***Usage scenario***: The copyright holder of different Expressions may differ, particularly in cases where an author has signed over copyright to the publisher of a particular Expression. Different publishers have different policies on deposit into repositories. A service exists that holds information about these policies. Having established who owns the copyright, an aggregator may wish to use information about copyright holder to interrogate such a service and provide additional information about deposit policies. (Identifying copyright holders)
- ***Proposed solution***: Copyright Holder element.

Dates

- ***Requirements***:
  - Date available - necessary to establish when a piece of work, or a particular copy, was/will be made publicly available (dcterms:available)
  - Date of modification of a copy - necessary to identify the latest version (dcterms:modified)
  - Date of formal publication (dcterms:issued) - forms part of the bibliographic citation (dc:bibliographicCitation)
- ***Proposed solution***: Elements included for the above dates.

- ***Consider requirements***:
  - Date copyrighted - can supplement the date available information (dcterms:dateCopyrighted)
  - Date created - can help identify older material which has only recently been made publicly available (dcterms:created)

- ***Not Required***:
  - Validity periods (dcterms:valid)
  - Dates of submission to / acceptance by publisher/conference etc. (dcterms:dateSubmitted, dcterms:dateAccepted)
  - Dates of submission of theses/dissertations (dcterms:dateSubmitted) [out of scope for current work]
  - Date captured - could be used for digitized versions (dcterms:dateCaptured)
  - Date of deposit [out of scope - administrative metadata]

Translated abstract

- ***Requirement***: Support the capture of multiple language versions of an abstract, for translations.
- ***Usage scenario***: An eprint and its abstract are deposited into a repository. At a later point a French translation is added to the repository, with a French abstract. (Translated abstract)
- ***Proposed solution***: Use of a language attribute for abstract.

Embargo periods

- ***Requirement***: Support the identification of publisher-imposed embargo periods.
- ***Proposed solution***: Access Rights and Licence and Date Available elements.

A ***Use case*** has been prepared outlining some of the issues from the scenarios listed: Application profile for eprints used by UK repositories search service

Retrieved from "/repositories/digirep/index/Functional_Requirements"

Categories: EprintsApplicationProfile

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Model

From DigiRepWiki

This document is one of several produced as part of the Eprints Application Profile Wiki. See also:

- Functional Requirements
- **Model**
- EPrints Application Profile
- Community Acceptance Plan
- Mapping the Eprints Application Profile to Simple DC

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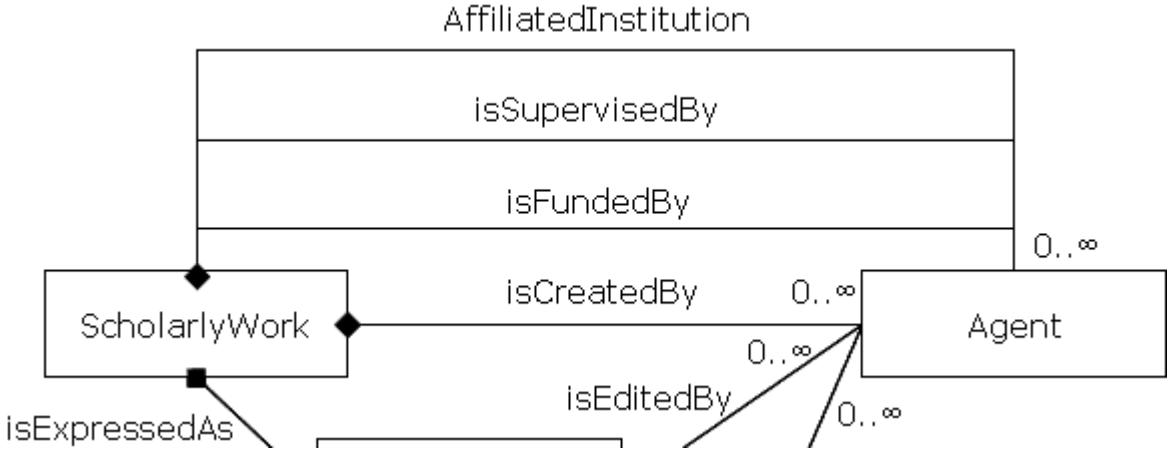
Introduction

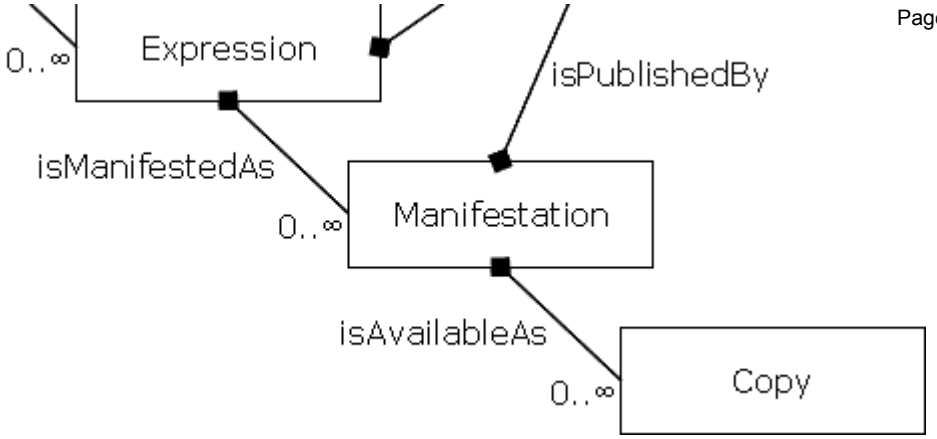
This document presents a model for eprints based on the Functional Requirements for Bibliographic Records (FRBR).

In the context of this model an eprint is defined to be a *scientific or scholarly research text* (as defined by the Budapest Open Access Initiative (http://www.earlham.edu/~peters/fos/boaifaq.htm#literature)), for example a peer-reviewed journal article, a preprint, a working paper, a thesis, a book chapter, a report, etc.

Readers that are not familiar with FRBR should read A note about FRBR before proceeding.

Eprint Model





Although FRBR is used as the basis of the model, some of the entity and relationship labels used in FRBR have been modified for this model, in order to make them more intuitive to those dealing with eprints:

- a ScholarlyWork is a FRBR Work
- a Copy is a FRBR Item
- an Agent is a FRBR Person or a FRBR Corporate Body
- the isExpressedAs relationship is known as 'is realized through' in FRBR
- the isManifestedAs relationship is known as 'is embodied in' in FRBR
- the isAvailableAs relationship is known as 'is exemplified by' in FRBR
- the isCreatedBy relationship is known as 'is created by' in FRBR
- the isPublishedBy relationship is modelled as the 'publisher' attribute of a Manifestation in FRBR

A ScholarlyWork is a distinct intellectual or artistic scholarly creation.

The isExpressedAs, isManifestedAs and isAvailableAs relationships can be thought of as 'vertical' relations between the ScholarlyWork and its Expressions, between an Expression and its Manifestation and between a Manifestation and its Copies. There are also 'horizontal' relationships between different Expressions of the same ScholarlyWork (e.g. the 'has a translation' relationship in FRBR), different Manifestations of the same Expression (e.g. the 'has an alternative' relationship in FRBR) and so on. These 'horizontal' relationships have not been included in this model. Software applications may be able to infer some of these 'horizontal' relationships by navigating up and down the 'vertical' relationships.

In natural language, what the above model says is:

> A ScholarlyWork may be expressed as one or more Expressions. Each Expression may be manifested as one or more Manifestations. Each Manifestation may be made available as one or more Copies. Each ScholarlyWork may have one or more creators, funders and supervisors. Each Expression may be have one or more editors. Each Manifestation may have one or more publishers.

The most common forms of Expression of an eprint are the various 'revisions' that it goes through (draft, pre-print, ..., final published version, etc.) and its different translations. Therefore, the most important Expression to Expression relationships required are isVersionOf/hasVersion and isTranslationOf/hasTranslation.

Attributes

Attributes of a ScholarlyWork

- title
- subject
- abstract
- grant number
- has adaptation
- identifier (URI)

Attributes of an Expression

- title
- description
- date available
- status
- version number or string
- language
- genre / type
- copyright holder
- has version
- has translation
- bibliographic citation
- references
- identifier (URI)

Attributes of a Manifestation

- format
- date modified
- identifier (URI)

Attributes of a Copy

- date available
- access rights
- licence
- is part of
- identifier/locator (URI)

Attributes of an Agent

- name
- family name
- given name
- type of agent
- workplace homepage
- mailbox
- homepage
- identifier (URI)

A note on Open Access

> "By 'open access' to this literature we mean its free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited." http://www.earlham.edu/~peters/fos/boaifaq.htm#openaccess

Therefore, open access is a combination of access rights (freely available) and usage rights (able to be used openly).

The CC Attribution licence (http://creativecommons.org/licenses/by/2.5/) is a good example of an 'open access' licence.

These attributes can be captured using the existing DC properties dcterms:accessRights and dcterms:license (note US spelling).

Being made available on an open access basis is a feature of the Copy - i.e. the same Manifestation may be made available as a non-open access Copy (e.g. the publisher copy) and an open access Copy (e.g. the copy in the

institutional eprint archive).

A note on implementing this model using Dublin Core metadata

Many of the above relationships and attributes can be implemented fairly easily using metadata terms already defined by the Dublin Core. Note that the DC properties called dcterms:hasVersion and dcterms:hasFormat are defined in a way that implies they are 'horizontal' relationships rather than 'vertical' ones.

DC metadata tends to be thought of as only being capable of describing flat, single-entity, constructs - a Web page, a document, an image, etc. However, the DCMI Abstract Model introduces the notion of a *description set*, a group of related *descriptions*, which allows it to be used to capture metadata about more complex sets of entities, using models like the one described here.

DCMI is currently developing a revised set of encoding guidelines for XML and RDF/XML, which will allow these more complex, multi-description, *description set* constructs to be encoded and shared between software applications.

Readers that are not familiar with the DCMI Abstract Model should read A note about the DCMI Abstract Model.

Retrieved from "/repositories/digirep/index/Model"

Categories: EprintsApplicationProfile

Title: Simple Dublin Core
Identifier: http://stage.dublincore.org/usage/meetings/2006/09/manzanillo/profile-pipeline/dc-simple/html/
Source: i:/admin/www/usage/meetings/2006/09/manzanillo/profile-pipeline/dc-simple/index.txt
Created: 2006-09-06

Draft: http://dublincore.org/usage/meetings/2006/09/manzanillo/profile-pipeline/dc-simple/2006-08-12.dc-simple.html

---

2006-04-30 Usage Board meeting, Seattle - notes

-- ISSUE: What is Simple Dublin Core?

-- "Simple DC" is a concept used in a number of ways in a
number of places. Do we address it in reference to OAI?

-- "Simple DC is a description set with one description that
describes a resource with 15 optional property usages"

-- If we say Simple DC is a conforming AP, then folks will
be using it as a model.

-- Why do we need an AP to say what Simple DC is? Because you
have to say the 15 properties are optional and repeatable.

-- What goes on a AP for Simple DC? It should include those
properties of the DCMI Profile Model (Application Profile
of Application Profiles).

-- ISSUE: OAI uses value string language. Do we put anything
about value string language in this AP?

-- AGREED: Simple DC includes value string language, and this
is optional.

-- AGREED: Need to include URI in Simple DC AP, not the QName.

-- AGREED: Do not cite our own XML schemas in the AP for Simple DC

-- ISSUE: Documentation mentioning "Simple Dublin Core" should be
revised to point to the Simple DC AP.

Use of "Simple Dublin Core" in DCMI documentation

http://dublincore.org/documents/dcmes-xml/

> This document describes an encoding for the DCMES in XML subject to these restrictions:
>
> * The Dublin Core elements described in the DCMES V1.1 reference can be used
> * No other elements can be used
> * No element qualifiers can be used
> * The resulting RDF/XML cannot be embedded in web pages

http://dublincore.org/documents/usageguide/

> The Dublin Core standard includes two levels: Simple and
> Qualified. Simple Dublin Core comprises fifteen elements;
> Qualified Dublin Core includes three additional elements
> (Audience, Provenance and RightsHolder), as well as a group
> of element refinements (also called qualifiers) that refine
> the semantics of the elements in ways that may be useful in
> resource discovery.

http://dublincore.org/documents/usageguide/glossary.shtml

> Simple Dublin Core
>
> The fifteen Dublin Core elements used without qualifiers,
> that is without element refinement or encoding
> schemes. Sometimes referred to as Dublin Core simple.

http://dublincore.org/resources/faq/

> "Simple Dublin Core" is Dublin Core metadata that
> uses no qualifiers; only the main 15 elements of the
> Dublin Core Metadata Element Set are expressed as simple
> attribute-value pairs without any "qualifiers" (such as
> encoding schemes, enumerated lists of values, or other
> processing clues) to provide more detailed information

about a resource.

http://dublincore.org/schemas/xmls/

Simple DC XML schema, version 2002-12-12

This schema defines terms for Simple Dublin Core, i.e. the 15 elements from the http://purl.org/dc/elements/1.1/ namespace, with no use of encoding schemes or element refinements.

Title: Simple Dublin Core
Identifier: http://stage.dublincore.org/usage/meetings/2006/09/manzanillo/profile-pipeline/dc-simple/

Label	Property	Source definition	Obligation	Value String
Contributor	dc:contributor	An entity responsible for making contributions to the content of the resource.	optional	mandatory
Coverage	dc:coverage	The extent or scope of the content of the resource.	optional	mandatory
Creator	dc:creator	An entity primarily responsible for making the content of the resource.	optional	mandatory
Date	dc:date	A date associated with an event in the life cycle of the resource.	optional	mandatory
Description	dc:description	An account of the content of the resource.	optional	mandatory
Format	dc:format	The physical or digital manifestation of the resource.	optional	mandatory
Resource Identifier	dc:identifier	An unambiguous reference to the resource within a given context.	optional	mandatory
Language	dc:language	A language of the intellectual content of the resource.	optional	mandatory
Publisher	dc:publisher	An entity responsible for making the resource available	optional	mandatory
Relation	dc:relation	A reference to a related resource.	optional	mandatory

Rights Management	**dc:rights**	Information about rights held in and over the resource.	optional	mandatory
Source	**dc:source**	A reference to a resource from which the present resource is derived.	optional	mandatory
Subject and Keywords	**dc:subject**	The topic of the content of the resource.	optional	mandatory
Title	**dc:title**	A name given to the resource.	optional	mandatory
Resource Type	**dc:type**	The nature or genre of the content of the resource.	optional	mandatory

Title: Usage Board 2006-2007 work plan: dependencies on DCMI Abstract Model
Identifier: http://stage.dublincore.org/usage/meetings/2006/09/manzanillo/workplan/html/
Source: i:/admin/www/usage/meetings/2006/09/manzanillo/workplan/index.txt
Version: 2006-09-14
Note: This document expands on http://dublincore.org/architecturewiki/DCRDFTaskforce/DCRDFRoadmap.
See also http://dublincore.org/architecturewiki/.

1. Architecture - for discussion in Mexico

1.1. DCAM update: clarification of Value Type, VES, SES,
introduction of domains and ranges, explicit Vocabulary Model.
-- DCAM - Existing DCMI Recommendation, 2005-02-??
http://dublincore.org/documents/abstract-model/

-- DCAM - work-in-progress
http://dublincore.org/architecturewiki/AMDraftUpdate

-- DCAM issues
http://dublincore.org/architecturewiki/AMIssues

1.2. DC-RDF updated to reflect changes in DCAM

-- Legacy specs - not yet superseded:
-- Expressing Qualified Dublin Core in RDF/XML - title/date/status
http://dublincore.org/documents/dcq-rdf-xml/
-- Expressing Simple Dublin Core in RDF/XML - title/date/status
http://dublincore.org/documents/dcmes-xml/

-- The new spec - passed first round of public comment July 2006
http://dublincore.org/documents/dc-rdf/

-- Notes on the above
http://dublincore.org/documents/dc-rdf-notes/

-- 2006-06-30 Report on public comment
http://dublincore.org/architecturewiki/DCRDFTaskforce/PublicCommentJune2006

1.3. DC-XML updated to reflect changes in DCAM

-- Legacy DC-in-XML Guidelines, 2003?
http://dublincore.org/documents/dc-xml-guidelines/

-- DC-XML Working Draft, 2006
http://dublincore.org/documents/dc-xml/

-- 2006-07-18 Results of public comment
http://www.jiscmail.ac.uk/cgi-bin/webadmin?A2=ind0607&L=dc-architecture&P=620
http://dublincore.org/architecturewiki/DCXMLRevision/Comments

-- Set of XML schemas (11)
http://homes.ukoln.ac.uk/~lispj/dc-xml/dc-xml-schema/xmls/

-- Document "DC-XML and XML Schema" - "notes on customizing
the schemas for various application profiles" (9 pages)
http://homes.ukoln.ac.uk/~lispj/dc-xml/dc-xml-schema/

-- An XSLT stylesheet which GRDDL-es DC-XML into RDF/XML:
http://homes.ukoln.ac.uk/~lispj/dc-xml/dc-xml-schema/xslt/dcx2rdfxml.xsl

-- A "examples covering all features in notes" with XML fragments:
http://homes.ukoln.ac.uk/~lispj/dc-xml/dc-xml-schema/xml/

-- DC-XML Working Draft, work-in-progress
http://dublincore.org/architecturewiki/DCXMLRevision/DCXMLGuidelines/

1.4. DC-TEXT updated to reflect changes in DCAM
-- http://dublincore.org/architecturewiki/DCText/
-- http://www.ukoln.ac.uk/metadata/dcmi/dc-text/ - which one?

2. Usage Board meeting in Mexico

2.1. DCMES Editorial changes - finalization

-- Public comment Aug 28 to Sep 25
http://stage.dublincore.org/usageboard/2006/2006-06.dcmes/dcmes-changes/

2.2. Assignment of Domains and Ranges - meeting packet to include:

-- Draft issues page:
http://stage.dublincore.org/usage/meetings/2006/09/manzanillo/domains-ranges/html/index.html
This page includes links to past discussions on DC-USAGE, to Swoogle statistics, and to relevant notes and postings from the DC-RDF comment period.

-- http://dublincore.org/usageboardwiki/PropertyDomainsAndRanges
ACTION Usage Board (Mexico meeting): check draft Domain/Range Vocabulary term-by-term (all /terms/ properties); determine which definitions or range assignments will need more attention.

-- New version of DCAM - relevant for SES/VES discussion:
http://dublincore.org/architecturewiki/AMDraftUpdate

-- 2006-06-28 DC-Arch proposal: new ranges only for the "terms" namespace?
http://www.jiscmail.ac.uk/cgi-bin/webadmin?A2=ind0606&L=dc-architecture&P=5526

-- Encoding Schemes as SES or VES - basis for discussion is
http://dublincore.org/usage/meetings/2005/09/madrid/files/2005-05-12.encoding-scheme-types.txt

ACTION Usage Board (Mexico meeting): For each Encoding Scheme, decide whether it is a Vocabulary Encoding Scheme or a Syntax Encoding Scheme (starting points are proposal above and new draft DCAM).

-- ACTION Usage Board (Mexico meeting): Agree on further process for finalizing Domains and Ranges in all of its aspects (declaration of classes, assignment as domains and ranges, implications for term documentation).

2.3. Review Collection Description Application Profile

-- Discuss review in Mexico, finalize October-November

3. Usage Board - October through December

3.1. Prepare proposal on domains/ranges for Public Comment in early 2007

3.2. Finalize review of Collection Description Profile

4. Architecture/DCMI - October through December

4.1. In parallel to 3.1, prepare (for purposes of testing and review):
-- RDF schemas of revised descriptions of terms with domains and ranges
-- RDF schemas of new classes

4.2. Prepare revised DCAM, DC-TEXT, DC-XML, DC-RDF, and DCMI Namespace Policy for the DCMI Recommendation process

-- DC-XML draft should be accompanied by a note addressing compatibility with previous XML guidelines. See:
http://www.jiscmail.ac.uk/cgi-bin/webadmin?A2=ind0609&L=DC-ARCHITECTURE&P=150
http://www.jiscmail.ac.uk/cgi-bin/webadmin?A2=ind0609&L=DC-ARCHITECTURE&P=255

-- DC-XML may need to distinguish between dc-xml-full and dc-xml-minimal:
http://www.jiscmail.ac.uk/cgi-bin/webadmin?A2=ind0606&L=dc-architecture&P=1019

4.3. Raise awareness in broader community, prepare for formal review in early 2007

5. DCMI - January through April 2007

5.1. Public Comment for DCAM, DC-TEXT, DC-XML, DC-RDF as (Revised) DCMI Recommendations

5.2. Directorate to recruit additional reviewers, targeting interested communities, e.g.:

-- Semantic Web community for DC-RDF
-- OAI-PMH implementer community for DC-XML

5.3. Documentation about Vocabularies and Profiles

Two new extensions of DCAM:
-- Formal Vocabulary Model
-- Formal Profile Model (extension of DCAM)
Starting points:
-- http://stage.dublincore.org/usage/meetings/2006/09/manzanillo/profile-pipeline/ub-profile/
-- http://stage.dublincore.org/usageboard/log/html/2006-04-30.meeting-notes-dcap.html

Contracted work packages for user documentation closely related to the above:

-- Guidelines on How to declare a set of metadata terms
-- Guidelines on How to make a DCAP
-- following example of CDAP, possibly later also ePrints, etc
-- Call for Tender to require "close coordination with the editors of DCAM"
-- Include Simple Dublin Core as stand-alone example
-- Starting points:
http://dublincore.org/usage/meetings/2006/04/profile-review/
http://dublincore.org/usage/documents/2005/09/03/profile-guidelines/

6. DCMI/Architecture - April through July

6.1. Following Public Comment period, publication of (revised) DCMI Recommendations: DCAM, DC-TEXT, DC-XML, DC-RDF, DCMI Namespace Policy.

7. Usage Board Mid-Year meeting (March or April)

7.1. Approve domain/range classes as new DCMI terms
7.2. Approve assignments of domains and ranges to existing DCMI terms
7.3. Approve DCAP for Simple Dublin Core
7.4. Full formal review of NISO Collection Description profile

7. DCMI - April through July

7.1. Declare domain/range classes; publish RDF schemas and HTML documents
7.2. Copy contents of "1.1" namespace to "terms" namespace
7.3. Declare domains and ranges for "terms" terms; include in TERMS publications
7.4. Public comment period for Documentation on Vocabularies and Profiles
7.5. Other changes and pointers in DCMI term documentation. Update Using Dublin Core.

Title: Usage Board profile
Identifier: http://stage.dublincore.org/usage/meetings/2006/09/manzanillo/profile-pipeline/ub-profile/.index.html
Source: i:/admin/www/usage/meetings/2006/09/manzanillo/profile-pipeline/ub-profile/index.txt

---

Notes from May 2005

1) We need to look carefully at the RDF schema binding to
determine which of the attributes used in [1] and [2] are
really needed in the RDF schemas. From my notes, here is
a draft mapping, with reference to a hypothetical namespace
"dcu:" to hold terms not yet formally declared:

Name:	NOT USED	
Namespace:	rdfs:isDefinedBy	rdf:resource="xxx"
Label:	rdfs:label	xml:lang="en-US"
Definition:	rdfs:comment	xml:lang="en-US"
Type of term:	rdf:type	rdf:resource="http://.../#element"
Status:	dcu:status	rdf:resource="http://.../#recommended"
Date issued:	dcterms:issued	
Comment:	dc:description	xml:lang="en-US"
See:	rdfs:seeAlso	rdf:resource="http://..."
References:	dcterms:references	rdf:resource="http://.../#W3CDTF"
Refines:	rdfs:subPropertyOf	
Qualifies:	dcu:qualifies	
Date modified:	dcq:Modified	
Decision:	dcu:decision	rdf:resource = "uri"
Version:	dcu:version	rdf:resource = "uri"
Replaces:	NOT USED	
Is Replaced By:	NOT USED	
Broader Than:	NOT USED	
Narrower Than:	rdfs:subClassOf	

Of course, we need to consider the possibility that not
all of the attributes of [1] and [2] would be needed in
the RDF schemas.

2) If we accept the mappings of some terms defined in [1] and [2]
to existing terms in namespaces maintained by W3C and to DCMI's
own Terms namespace, then at a minimum it would appear we would
need to declare the following:

dcu:status - Harry needs this for the DCMI Registry
dcu:qualifies
dcu:decision
dcu:version

3) In addition, it would appear we need the term

dcu:isTranslationOf

Harry needs this for the DCMI Registry, and Tom thinks this
is needed so that a translation of DCMI term definitions
into languages such as Japanese can reference the specific
Term Version used as the basis for the translation.

4) The term dcu:status has, in effect, a controlled vocabulary
of values:

http://dublincore.org/usage/documents/process/#conforming
http://dublincore.org/usage/documents/process/#recommended
http://dublincore.org/usage/documents/process/#registered

These are currently defined in the document DCMI Usage Board
Process, and the URIs are anchors to specific points in that
document. We should consider whether it is a good idea to
continue this or whether we would want to declare a status
vocabulary, and if so, how their URIs should be formed.

5) The term "Type of Term" (currently mapped in the RDF
binding to rdf:type) also has, in effect, a controlled vocabulary
of values:

http://dublincore.org/usage/documents/principles/#element-refinement
http://dublincore.org/usage/documents/principles/#element
http://dublincore.org/usage/documents/principles/#encoding-scheme
http://dublincore.org/usage/documents/principles/#vocabulary-term

6) Work on the DCMI Abstract Model [3] and a formal model for

DCMI Application Profiles [4] suggests a need for several other terms, along the lines of:

dcu:ApplicationProfile
dcu:PropertyUsage

In September 2004, Pete posted a strawman set of terms at http://homes.ukoln.ac.uk/~lispj/cen-cwa/vocab/dcapterms.rdf.

7) DCMI's RDF schemas [5] have long asserted the existence of URI references for terms based on the DCMI Namespace http://purl.org/dc/terms/ -- even though, technically, this should not have been possible without going through UB process. These include:

http://purl.org/dc/terms/DateScheme
http://purl.org/dc/terms/FormatScheme
http://purl.org/dc/terms/IdentifierScheme
http://purl.org/dc/terms/LanguageScheme
http://purl.org/dc/terms/SpatialScheme
http://purl.org/dc/terms/SubjectScheme
http://purl.org/dc/terms/TypeScheme

We would need to formulate a policy for creating, maintaining, and identifying such terms - bearing in mind that the terms above are already "legacy" (i.e., for all we know, there may be applications in the world that would break if DCMI were to drop or deprecate these terms).

8) Since the addition of

http://purl.org/dc/dcmitype/MovingImage
http://purl.org/dc/dcmitype/StillImage

we have two new attributes for Vocabulary Terms:

Broader Than
Narrower Than - currently represented with rdfs:subClassOf

Usage Board Application Profile (draft)

Mandatory

Name	[1]	The unique token assigned to the term.
URI	[1]	The Uniform Resource Identifier used to uniquely identify a term.
Namespace	[2]	The Uniform Resource Identifier of the namespace within which the term is defined.
Label	[1]	The human-readable label assigned to the term.
Definition	[1]	A statement that represents the concept and essential nature of the term.
Type of term	[1]	The type of term, such as Element or Encoding Scheme, as described in the DCMI Grammatical Principles.
Status	[1]	Status assigned to term by the DCMI Usage Board, as described in the DCMI Usage Board Process.
Date issued	[1]	Date on which a term was first declared.

When appropriate

Comment	[1]	Additional information about the term or its application.
See	[1]	A link to authoritative documentation.
References	[1]	A citation or URL of a resource referenced in the Definition or Comment.
Refines	[1]	A reference to a term refined by an Element Refinement.
Qualifies	[1]	A reference to a term qualified by an Encoding Scheme.
Broader Than	[1]	A reference from a more general to a more specific Vocabulary Term
Narrower Than	[1]	A reference from a more specific to a more general Vocabulary Term

Version-related

Date modified	[2]	Date on which a term declaration was subsequently modified.
Decision	[2]	A link to the Usage Board decision describing the creation or modification of a term

```
                    declaration.
 Version        [2] An historical version of a term declaration.
 Replaces       [2] A reference to the immediately precedent
                    historical version of a term declaration.
 Is Replaced By [2] An identifier for the historical version of a
                    term declaration by which this historical version
                    is superseded.
```

REFERENCES

[1] http://dublincore.org/documents/dcmi-terms/
[2] http://dublincore.org/usage/terms/history/
[3] http://www.ukoln.ac.uk/metadata/dcmi/abstract-model/
[4] ftp://ftp.cenorm.be/public/ws-mmi-dc/mmidc116.htm
[5] http://dublincore.org/2003/03/24/dcq
[6] http://homes.ukoln.ac.uk/~lispj/cen-cwa/vocab/dcapterms.rdf

```
------------------------------------------------------------------------
Strawman vocabulary drafted by Pete Johnston, July 2004
-- http://homes.ukoln.ac.uk/~lispj/cen-cwa/vocab/dcapterms.rdf
   about a hypothetical http://example.org/dcap/
------------------------------------------------------------------------

  dcap:SchemaDocument     http://example.org/dcap/
  dc:title                Schema for the DCAP vocabulary
  dc:description          This schema contains descriptions of the DCAP terms.
                          Terms are declared using RDF Vocabulary Description Language
                          (RDF Schema).
  dc:publisher            http://www.ukoln.ac.uk/#

  dcap:MetadataVocabulary http://example.org/dcap/#
  dc:title                The DCAP Vocabulary
  dc:description          The DCAP Vocabulary provides classes and properties
                          used to describe Dublin Core Application Profiles and Property Usages
                          and related resources.
  dc:publisher            http://www.rdn.ac.uk/#
  dcap:seeAlso            http://www.ukoln.ac.uk/projects/iemsr/wp2/dcap/
  dcap:preferredXMLNamespaceName
                          dcap
  dcap:preferredXMLNamespacePrefix
                          http://example.org/dcap/

  rdfs:Class              http://example.org/dcap/Document
  Label:                  Document

  rdfs:Class              http://example.org/dcap/SchemaDocument
  Label:                  Schema Document

  rdfs:Class              http://example.org/dcap/Agency
  Label:                  Agency

  rdfs:Class              http://example.org/dcap/MetadataVocabulary
  Label:                  Metadata Vocabulary

  rdfs:Class              http://example.org/dcap/AppProfile
  Label:                  Application Profile

  rdfs:Class              http://example.org/dcap/PropertyUsage
  Label:                  Property Usage

  rdfs:Class              http://example.org/dcap/BindingSchema
  Label:                  Binding Schema

  rdfs:Class              http://example.org/dcap/VocabStatus
  Label:                  Vocabulary or Profile Status

  dcap:VocabStatus        http://example.org/dcap/VocabStatus/private
  Label:                  Private

  dcap:VocabStatus        http://example.org/dcap/VocabStatus/draft
  Label:                  Draft

  dcap:VocabStatus        http://example.org/dcap/VocabStatus/proposedRecommendation
  Label:                  Proposed Recommendation

  dcap:VocabStatus        http://example.org/dcap/VocabStatus/recommendation
  Label:                  Recommendation
```

rdfs:Class	http://example.org/dcap/TermStatus
Label:	Vocabulary or Profile Status
dcap:TermStatus	http://example.org/dcap/TermStatus/private
Label:	Private
dcap:TermStatus	http://example.org/dcap/TermStatus/unstable
Label:	Unstable
dcap:TermStatus	http://example.org/dcap/TermStatus/testing
Label:	Testing
dcap:TermStatus	http://example.org/dcap/TermStatus/stable
Label:	Stable
dcap:TermStatus	http://example.org/dcap/TermStatus/deprecated
Label:	Deprecated
rdfs:Class	http://example.org/dcap/Obligation
Label:	Obligation
dcap:Obligation	http://example.org/dcap/Obligation/reserved
Label:	Reserved
dcap:Obligation	http://example.org/dcap/Obligation/optional
Label:	Optional
dcap:Obligation	http://example.org/dcap/Obligation/recommended
Label:	Optional (Recommended)
dcap:Obligation	http://example.org/dcap/Obligation/mandatory
Label:	Mandatory
rdf:Property	http://example.org/dcap/uses
Label:	Uses
rdfs:range	http://www.w3.org/1999/02/22-rdf-syntax-ns#Property
rdf:Property	http://example.org/dcap/encodingScheme
Label:	Encoding Scheme
rdf:Property	http://example.org/dcap/obligation
Label:	Obligation
rdfs:range	http://example.org/dcap/Obligation
rdf:Property	http://example.org/dcap/condition
Label:	Condition
rdf:Property	http://example.org/dcap/maxOccurs
Label:	Maximum Occurrences
rdf:Property	http://example.org/dcap/isMemberOf
Label:	Is Member Of
rdf:Property	http://example.org/dcap/seeAlso
Label:	See also
rdfs:range	http://example.org/dcap/Document
rdf:Property	http://example.org/dcap/version
Label:	Version
rdf:Property	http://example.org/dcap/status
Label:	Status
rdf:Property	http://example.org/dcap/isExpressedBy
Label:	Is Expressed By
rdfs:range	http://example.org/dcap/BindingSchema
rdf:Property	http://example.org/dcap/preferredXMLNamespaceName
Label:	Preferred XML Namespace Name
rdf:Property	http://example.org/dcap/preferredXMLNamespacePrefix
Label:	Preferred XML Namespace Prefix

Dublin Core Metadata Initiative
Making it easier to find information

Library Application Profile

Creator: DCMI-Libraries Working Group

Contributors: Robina Clayphan, The British Library, UK
Rebecca Guenther, Library of Congress, USA

Date Issued: 2004-09-10

Identifier: http://dublincore.org/documents/2004/09/10/library-application-profile/

Replaces: http://dublincore.org/documents/2002/09/24/library-application-profile/

Is Replaced By: Not applicable

Latest Version: http://dublincore.org/documents/2004/09/10/library-application-profile/

Status of Document: This is a DCMI Working Draft.

Description of Document: This document proposes a possible application profile that clarifies the use of the Dublin Core Metadata Element Set in libraries and library-related applications and projects. It was originally prepared by the DCMI-Libraries Application Profile drafting committee, a subset of the DCMI-Libraries Working Group.
This revision was prepared in August 2004 and incorporates decisions made by the DCMI Usage Board at its meetings in 2003 and issues discussed in the WG meeting in Seattle in September 2003. It has been reformatted in conformance with the Dublin Core Application Profile Guidelines produced by the CEN MMI-DC Workshop.

DC-Library Application Profile (DC-Lib)

I. Introduction

The concept of *application profiles* (see Application profiles: mixing and matching metadata schemas) has emerged within the Dublin Core Metadata Initiative as a way to declare which elements from which namespaces are used in a particular application or project. Application profiles are defined as schemas which consist of data elements drawn from one or more namespaces, combined together by implementors, and optimised for a particular local application.

The DCMI-Libraries Working Group has explored various uses of the Dublin Core Metadata Element Set in library and related applications and has envisioned the following possible uses:

- to serve as an interchange format between various systems using different metadata standards/formats
- to use for harvesting metadata from data sources within and outside of the library domain
- to support simple creation of library catalog records for resources within a variety of systems
- to expose MARC data to other communities (through a conversion to DC)
- to allow for acquiring resource discovery metadata from non-library creators using DC

A *library application profile* will be a specification that defines the following:

- required elements
- permitted Dublin Core elements
- permitted Dublin Core qualifiers
- permitted schemes and values (e.g. use of a specific controlled vocabulary or encoding scheme)
- library domain elements used from another namespace

- additional elements/qualifiers from other application profiles that may be used (e.g. DC-Education: Audience)
- refinement of standard definitions

This document proposes a possible application profile that clarifies the use of the Dublin Core Metadata Element Set in libraries and library-related applications and projects. It was originally prepared by the DCMI-Libraries Application Profile drafting committee, a subset of the DCMI-Libraries WorkingGroup. This revision was prepared in August 2004 and incorporates decisions made by the DCMI Usage Board at its meetings in 2003 and issues discussed in the WG meeting in Seattle in September 2003. It has been reformatted in conformance with the Dublin Core Application Profile Guidelines produced by the CEN MMI-DC Workshop.

2. Namespaces and Format of entries

The DC-Library Application Profile uses terms from two namespaces:

- DCMI Metadata Terms [http://dublincore.org/documents/dcmi-terms/]
- MODS elements used in DC-Lib application profile [http://www.loc.gov/mods]
- The Usage Board has decided that any encoding scheme that has a URI defined in a non-DCMI namespace may be used. DCMI will not define these. Those so far considered for this application profile are indicated.

Format of entries:

This Application Profile is presented following the "Dublin Core Application Profiles Guidelines" produced by the CEN MMI-DC Workshop.

Name of Term	A unique token assigned to the term
Term URI	A Uniform Resource Identifier used to identify the term.
Label	A human-readable label assigned to the term.
Defined By	An identifier of a namespace, pointer to a schema, or bibliographic reference for a document within which the term is defined.
Source Definition	The definition of the term in the namespace in which the term was orginated.
DC-Lib Definition	The DC-Lib definition of the term.
Source Comments	Comments on the term from the namespace in which the term orginated.
DC-Lib Comments	DC-Lib comments about the term.
Type of term	The grammatical category of the term (e.g. "Element", "Element Refinement", or "Encoding Scheme").
Refines	The described term semantically refines the referenced term. A refinement makes the meaning of the element narrower or more specific. It will share the meaning of the unrefined element but with a more restricted scope.
Refined By	The described term is semantically refined by the referenced term.
Encoding Scheme For	The described term, an encoding scheme, qualifies the referenced term. Using an encoding scheme will aid in the interpretation of an element value. These schemes include controlled vocabularies and formal notations or parsing rules. A value expressed using an encoding scheme will thus be a token selected from a controlled vocabulary (e.g., a term from a classification system or set of subject headings) or a string formatted in accordance with a formal notation (e.g., "2000-01-01" as the standard expression of a date). If an encoding scheme is not understood by a client or agent, the value may still be useful to a human reader. In some cases, encoding schemes not yet registered are indicated. These will be registered and/or approved by the DCMI Usage Board as DC Encoding Schemes in the future.
Has Encoding Scheme	The described term is qualified by the referenced encoding scheme.
Obligation	Indicates whether the element is required to always or sometimes be present. In this application profile the obligation can be: mandatory (**M**), mandatory if applicable (**MA**), strongly recommended (**R**) or optional (**O**). Mandatory ensures that some of the elements are always supported and mandatory if applicable means that this element must be supported if the information is available. An element with a mandatory obligation must have a value. The strongly recommended and the optional elements should be filled with a value if the information is appropriate to the given resource but if not, they may be omitted.
Occurence	Indicates any limit to the repeatability of the element.

3. Table of Contents

General notes, open questions regarding all/some elements, ...

- Title
- Alternative
- Creator
- Contributor
- Publisher
- Subject
- Description
- Abstract
- Date
- Created
- Valid
- Available
- Issued
- Modified
- DateCopyrighted
- DateSubmitted
- DateAccepted
- DateCaptured
- Type
- Format
- Extent
- Medium
- Identifier
- BibliographicCitation
- Source
- Language
- Relation
- IsVersionOf
- IsFormatOf
- HasFormat
- IsReplacedBy
- Replaces
- IsPartOf
- HasPart
- Requires
- IsReferencedBy
- References
- Coverage
- Spatial
- Temporal
- Rights
- Audience
- Edition
- Location

Encoding Schemes:

- Box
- DCMIType
- DDC
- DOI
- IMT
- ISBN
- ISO3166
- ISO639-2
- ISO8601
- ISSN
- LCC
- LCSH
- MESH
- Period
- Point
- RFC3066
- SICI
- TGN
- UDC
- URI
- W3CDTF

General notes regarding all elements:

- Either a Title or Identifier are mandatory (Identifier is mandatory if applicable).
- If the record is expressed in a format (e.g., HTML) that allows each element/qualifier/scheme value to be assigned a language attribute (e.g., the HTML tag lang="en"), the use of the attribute is permitted for any or all DC elements as desired.
- All elements may be used as unqualified. If using qualified Dublin Core, additional guidelines are given.
- Any encoding scheme that has a URI defined in a non-DCMI namespace may be used: DCMI will not define these. A mechanism to register these is awaited. Where applicable a table has been created for each encoding scheme in a separate section following the main body of tables for elements and refinements.

4. DC-Library Application Profile

Name of Term	**title**
Term URI	http://purl.org/dc/elements/1.1/title
Label	Title
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	A name given to the resource
DC-Lib Definition	-
Source Comments	Typically, a title will be a name by which the resource is formally known.
DC-Lib Comments	A parallel/transliterated title is considered a main title, i.e. the Title element is repeated. Either a title or identifier is mandatory. If no title is available, best practice is to give a constructed title, derive a title from the resource or supply *[no title]*. If using qualified Dublin Core, an element refinement for titles other than the main title(s) should be included. Retain initial articles and use local sorting algorithms based on language. A language qualifier may be used to indicate language of title if appropriate. (For example, see: Initial Definite and Indefinite Articles for a list of articles in various languages).
Type of term	element
Refines	
Refined By	alternative
Has Encoding Scheme	
Obligation	**M**
Occurence	

Name of Term	**alternative**
Term URI	http://purl.org/dc/terms/alternative
Label	Alternative
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	Any form of the title used as a substitute or alternative to the formal title of the resource.
DC-Lib Definition	-
Source Comments	This qualifier can include Title abbreviations as well as translations.

DC-Lib Comments	Assigned title such as uniform or key title is Alternative. Best practice is to use this element refinement for titles other than the main title. Retain initial articles and use local sorting algorithms based on language. A language qualifier may be used to indicate language of title if appropriate. (For example, see: Initial Definite and Indefinite Articles for a list of articles in various languages)
Type of term	element refinement
Refines	title
Refined By	
Has Encoding Scheme	
Obligation	**R**
Occurence	

Back to TOC

Name of Term	**creator**
Term URI	http://purl.org/dc/elements/1.1/creator
Label	Creator
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	An entity primarily responsible for making the content of the resource.
DC-Lib Definition	An entity with a primary role in the creation of the intellectual or artistic content of the resource.
Source Comments	Examples of a Creator include a person, an organisation, or a service. Typically, the name of a Creator should be used to indicate the entity.
DC-Lib Comments	This term should not be refined with a role. A subset of terms taken from the Library of Congress list of Relators have been approved as role refinements for Contributor (http://www.loc.gov/marc/sourcecode/relator/relatorlist.html). URIs will be provided when available. The DCMI Usage Board has disapproved the idea of structured values to provide more information about the creator - it should be in a description for another resource. Creator and Contributor may be conflated with Creator being used as a refinement of Contributor.
Type of term	element
Refines	

Refined By	
Has Encoding Scheme	
Obligation	**O**
Occurence	

Name of Term	**contributor**
Term URI	http://purl.org/dc/elements/1.1/contributor
Label	Contributor
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	An entity responsible for making contributions to the content of the resource.
DC-Lib Definition	-
Source Comments	Examples of a Contributor include a person, an organisation, or a service. Typically, the name of a Contributor should be used to indicate the entity.
DC-Lib Comments	A subset of terms taken from the Library of Congress list of Relators have been approved as role refinements for Contributor (http://www.loc.gov/marc/sourcecode/relator/relatorlist.html). URIs will be provided when available. The DCMI Usage Board has disapproved the idea of structured values to provide more information about a contributor - it should be in a description for another resource. Creator and Contributor may be conflated with Creator being used as a refinement of Contributor.
Type of term	element
Refines	
Refined By	
Has Encoding Scheme	Role list (http://www.loc.gov/...)
Obligation	**MA**
Occurence	

Back to TOC

Name of Term	**publisher**
Term URI	http://purl.org/dc/elements/1.1/publisher
Label	Publisher
Defined By	http://dublincore.org/documents/dcmi-terms/

Source Definition	An entity responsible for making the resource available.
DC-Lib Definition	
Source Comments	Examples of a Publisher include a person, an organisation, or a service. Typically, the name of a Publisher should be used to indicate the entity.
DC-Lib Comments	A subset of terms taken from the Library of Congress list of Relators has been approved for use as role refinements of Publisher if applicable (http://www.loc.gov/marc/sourcecode/relator/relatorlist.html). URIs will be provided when available. The DCMI Usage Board has disapproved the idea of structured values to provide more information about the publisher - it should be in a description for another resource. Although some applications may wish to conflate Creator, Contributor and Publisher, DC-Lib maintains the distinction between Creator and Contributor (which may be conflated) and Publisher. If the elements are conflated and Publisher used as an element refinement for Contributor, the resulting element would be mapped to DC.Publisher.
Type of term	element
Refines	
Refined By	
Has Encoding Scheme	Role list (http://www.loc.gov/...)
Obligation	**O**
Occurence	

Name of Term	**subject**
Term URI	http://purl.org/dc/elements/1.1/subject
Label	Subject
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	The topic of the content of the resource.
DC-Lib Definition	
Source Comments	Typically, a Subject will be expressed as keywords, key phrases or classification codes that describe a topic of the resource. Recommended best practice is to select a value from a controlled vocabulary or formal classification scheme.
DC-Lib Comments	If a geographic or temporal aspect is recorded use the element Coverage. It may also be repeated in Subject if desired. If there is a subject string with elements in addition to a geographic, include the entire string in Subject with geographic element also in Coverage. It is highly recommended that either freetext or controlled vocabulary be supplied as element Subject in the metadata where appropriate and feasible. It is also recommended that a controlled vocabulary be used with encoding scheme specified. If no encoding scheme is specified, it is treated as keyword. If using qualified DC, always use the encoding scheme(s) for terms from a controlled vocabulary.
Type of term	element
Refines	
Refined By	
Has Encoding Scheme	Library of Congress Subject Headings - http://purl.org/dc/terms/LCSH Medical Subject Headings - http://purl.org/dc/terms/MESH Dewey Decimal Classification - http://purl.org/dc/terms/DDC Library of Congress Classification - http://purl.org/dc/terms/LCC Universal Dewey Classification - http://purl.org/dc/terms/UDC These are encoding schemes currently defined by DCMI. As additional schemes are registered, they will be included. Additional encoding schemes will be registered for those used in the library domain based on the MARC list of subject and classification schemes. Including an identifier to link to a registry where all encoding schemes are defined (e.g. based on RSLP schema) needs to be explored.
Obligation	**MA**
Occurence	

Name of Term	description
Term URI	http://purl.org/dc/elements/1.1/description
Label	Description
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	An account of the content of the resource.
DC-Lib Definition	
Source Comments	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.
DC-Lib Comments	It is permitted to link one or more external descriptions using a URI, but to facilitate keyword indexing of the content of the description, it is recommended that a text description also be included.
Type of term	element
Refines	
Refined By	Abstract, tableOfContents
Has Encoding Scheme	URI - http://purl.org/dc/terms/URI
Obligation	**R**
Occurence	

Name of Term	abstract
Term URI	http://purl.org/dc/terms/abstract
Label	Abstract
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	An account of the content of the resource.
DC-Lib Definition	
Source Comments	
DC-Lib Comments	Use text (and not only a URL) to describe the resource.
Type of term	element refinement
Refines	Description
Refined By	
Has Encoding Scheme	URI - http://purl.org/dc/terms/URI
Obligation	R
Occurence	

Name of Term	tableOfContents
Term URI	http://purl.org/dc/terms/tableOfContents
Label	Table Of Contents
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	A list of subunits of the content of the resource
DC-Lib Definition	
Source Comments	
DC-Lib Comments	Use text (and not only a URL) to describe the resource.
Type of term	element refinement
Refines	Description
Refined By	
Has Encoding Scheme	URI - http://purl.org/dc/terms/URI
Obligation	R
Occurence	

Back to TOC

Name of Term	**date**
Term URI	http://purl.org/dc/elements/1.1/date
Label	Date
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	A date associated with an event in the life cycle of the resource.
DC-Lib Definition	
Source Comments	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.
DC-Lib Comments	Recommend use of an element refinement for type of Date. Recommend that dates be encoded: 1) using W3C-DTF (a profile of ISO 8601 structured with hyphens), 2) using ISO 8601 (structured without hyphens), or 3) supplied as free text that does not take the form of a string of numerals (with or without hyphens). The second option, ISO 8601 (without hyphens), is preferred. It is acceptable to use widely-recognised practice such as day-month-year where the day and year are represented with numerals and month with a name or standard abbreviation (e.g., "1 January 2002" or "1 Jan 2002"). Avoid the use of potentially ambiguous date representations such as DD/MM/YY or MM/DD/YY (e.g., "04/05/05") It may be desirable to establish a DC-Lib encoding scheme or profile of ISO 8601 to cover B.C.E. dates, questionable and approximate dates. A date working group has been established to progress these issues.
Type of term	element
Refines	
Refined By	Created, Valid, Available, Issued, Modified
Has Encoding Scheme	ISO 8601(without hyphens) - http://purl.org/dc/terms/ISO8601 W3C-DTF (with hyphens) - http://purl.org/dc/terms/W3CDTF
Obligation	**MA**
Occurence	

Name of Term	**created**
Term URI	http://purl.org/dc/terms/created
Label	Created
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	Date of creation of the resource.
DC-Lib Definition	
Source Comments	
DC-Lib Comments	Use for the creation of the intellectual content.
Type of term	element refinement
Refines	Date
Refined By	
Has Encoding Scheme	ISO 8601(without hyphens) - http://purl.org/dc/terms/ISO8601 W3C-DTF (with hyphens) - http://purl.org/dc/terms/W3CDTF
Obligation	**MA**
Occurence	This qualified element should not be repeated except when giving date created using more than one encoding scheme.

Name of Term	**valid**
Term URI	http://purl.org/dc/terms/valid
Label	Valid
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	Date (often a range) of validity of the resource.
DC-Lib Definition	
Source Comments	
DC-Lib Comments	
Type of term	element refinement
Refines	Date
Refined By	
Has Encoding Scheme	ISO 8601(without hyphens) - http://purl.org/dc/terms/ISO8601 W3C-DTF (with hyphens) - http://purl.org/dc/terms/W3CDTF
Obligation	**O**
Occurence	

Name of Term	**available**
Term URI	http://purl.org/dc/terms/available
Label	Available
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	Date (often a range) that the resource will become or did become available.
DC-Lib Definition	
Source Comments	
DC-Lib Comments	
Type of term	element refinement
Refines	Date
Refined By	
Has Encoding Scheme	ISO 8601(without hyphens) - http://purl.org/dc/terms/ISO8601 W3C-DTF (with hyphens) - http://purl.org/dc/terms/W3CDTF
Obligation	**O**

Occurence	

Name of Term	**issued**
Term URI	http://purl.org/dc/terms/issued
Label	Issued
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	Date of formal issurance (e.g. publication) of the resource.
DC-Lib Definition	
Source Comments	
DC-Lib Comments	Use for the instantiation.
Type of term	element refinement
Refines	Date
Refined By	
Has Encoding Scheme	ISO 8601(without hyphens) - http://purl.org/dc/terms/ISO8601 W3C-DTF (with hyphens) - http://purl.org/dc/terms/W3CDTF
Obligation	**MA**
Occurence	

Name of Term	modified
Term URI	http://purl.org/dc/terms/modified
Label	Modified
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	Date on which resource was changed.
DC-Lib Definition	
Source Comments	
DC-Lib Comments	
Type of term	element refinement
Refines	Date
Refined By	
Has Encoding Scheme	ISO 8601(without hyphens) - http://purl.org/dc/terms/ISO8601 W3C-DTF (with hyphens) - http://purl.org/dc/terms/W3CDTF
Obligation	O
Occurence	

Name of Term	dateCopyrighted
Term URI	http://purl.org/dc/terms/dateCopyrighted
Label	Date Copyrighted
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	Date of copyright statement.
DC-Lib Definition	
Source Comments	
DC-Lib Comments	Decision by DCMI Usage Board May 2002. Recommend use if: 1) the value is different from Issued or Created, or 2) the copyright date is known but no value is supplied for Issued or Created. If same date is used for issued and copyright date, use only Issued.
Type of term	element refinement
Refines	Date
Refined By	
Has Encoding Scheme	ISO 8601(without hyphens) - http://purl.org/dc/terms/ISO8601

	W3C-DTF (with hyphens) - http://purl.org/dc/terms/W3CDTF
Obligation	**O**
Occurence	

Name of Term	**dateSubmitted**
Term URI	http://purl.org/dc/terms/dateSubmitted
Label	Date Submitted
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	Date of submission of the resource (e.g. thesis, articles, etc.).
DC-Lib Definition	
Source Comments	
DC-Lib Comments	Decision by DCMI Usage Board in May 2002. Recommended for theses and dissertations.
Type of term	element refinement
Refines	Date
Refined By	
Has Encoding Scheme	ISO 8601(without hyphens) - http://purl.org/dc/terms/ISO8601 W3C-DTF (with hyphens) - http://purl.org/dc/terms/W3CDTF
Obligation	**O**
Occurence	

Name of Term	**dateAccepted**
Term URI	http://purl.org/dc/terms/dateAccepted
Label	Date Accepted
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	Date of acceptance of the resource (e.g. of thesis by university department/institution, of article by journal, etc.).
DC-Lib Definition	
Source Comments	

DC-Lib Comments	Decision by DCMI Usage Board in May 2002. Recommended for theses and dissertations.
Type of term	element refinement
Refines	Date
Refined By	
Has Encoding Scheme	ISO 8601(without hyphens) - http://purl.org/dc/terms/ISO8601 W3C-DTF (with hyphens) - http://purl.org/dc/terms/W3CDTF
Obligation	**O**
Occurence	

Name of Term	**dateCaptured**
Term URI	http://www.loc.gov/mods/
Label	Date Captured
Defined By	
Source Definition	
DC-Lib Definition	Date that the resource was captured.
Source Comments	
DC-Lib Comments	This includes the date that a snapshot of the resource was taken (particularly for dynamic resources) if different from Date.Created. Use existing element <dateCaptured> under <publicationInfo> in the Metadata Object Description Schema. Decision by DCMI Usage Board in May 2002. Best practice is to use as a machine-processible date (ISO 8601 without hyphens or W3CDTF with hyphens).
Type of term	element refinement
Refines	Date
Refined By	
Has Encoding Scheme	ISO 8601(without hyphens) - http://purl.org/dc/terms/ISO8601 W3C-DTF (with hyphens) - http://purl.org/dc/terms/W3CDTF
Obligation	**O**

Occurence	

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Name of Term	**type**
Term URI	http://purl.org/dc/elements/1.1/type
Label	Resource Type
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	The nature or genre of the content of the resource.
DC-Lib Definition	
Source Comments	Type includes terms describing general categories, functions, genres, or aggregation levels for content. Recommended best practice is to select a value from a controlled vocabulary (for example, the list of DCMI Types). To describe the physical or digital manifestation of the resource, use the Format element.
DC-Lib Comments	Use a controlled list and identify the source with encoding scheme. Recommended that at least one value from DCMI-Type be supplied for a high level category. Use a controlled list and identify the source with encoding scheme. Consider registering values defined in the MARC list of sources as encoding schemes as well as any others that are identified as useful.
Type of term	element
Refines	
Refined By	
Has Encoding Scheme	DCMIType - http://purl.org/dc/dcmitype/ The DCMI Type Vocabulary is a list of types used to categorize the nature or genre of the content of the resource. See also http://dublincore.org/documents/dcmi-type-vocabulary/ Values from MARC list of sources to be registered as encoding schemes Art & Architecture thesaurus - http://www.loc.gov/marc/source/aat Thesaurus for graphic materials - http://www.loc.gov/marc/source/gmgpc (Note: These URIs established by LOC are subject to confirmation).
Obligation	**O**
Occurence	Type may be repeated for each encoding scheme used.

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Name of Term	**format**
Term URI	http://purl.org/dc/elements/1.1/format
Label	Format
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	The physical or digital manifestation of the resource.
DC-Lib Definition	
Source Comments	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).
DC-Lib Comments	Use this element primarily for IMT. Recommended for electronic resources.
Type of term	element
Refines	
Refined By	Extent, Medium
Has Encoding Scheme	IMT - http://purl.org/dc/terms/IMT The Internet media type of the resource. See also: http://www.isi.edu/in-notes/iana/assignments/media-types/media-types
Obligation	**R**
Occurence	

Name of Term	**extent**
Term URI	http://purl.org/dc/terms/extent
Label	Extent
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	The size or duration of the resource.
DC-Lib Definition	
Source Comments	
DC-Lib Comments	
Type of term	element refinement
Refines	Format
Refined By	
Has Encoding Scheme	
Similar to	
Obligation	**O**
Datatype	
Occurence	

Name of Term	**medium**
Term URI	http://purl.org/dc/terms/medium
Label	Medium
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	The material or physical carrier of the resource.
DC-Lib Definition	
Source Comments	
DC-Lib Comments	Used to specify the medium of the physical carrier of a resource. Format without an element refinement qualifier should be used to specify the electronic format of the resource, using the encoding scheme IMT. Format should be repeated if both are applicable (e.g. a PDF file on CD).
Type of term	element refinement
Refines	Format
Refined By	
Has Encoding Scheme	IMT - http://purl.org/dc/terms/IMT The Internet media type of the resource. See also: http://www.isi.edu/in-notes/iana/assignments/media-types/media-types
Obligation	**O**
Occurence	

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Name of Term	**identifier**
Term URI	http://purl.org/dc/elements/1.1/identifier
Label	Identifier
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	An unambiguous reference to the resource within a given context.
DC-Lib Definition	
Source Comments	Recommended best practice is to identify the resource by means of a string or number conforming to a formal identification system. Example of formal identification systems include the Uniform Resource Identifier (URI) (including the Uniform Resource Locator (URL)), the Digital Object Identifier (DOI) and the International Standard Book Number (ISBN).

DC-Lib Comments	*Standard identifier*: Provide at least one standard identifier from a standard scheme (e.g., URL, ISBN, etc.) if one or more standard identifiers have been assigned to the resource and are known to the metadata agency. *Unique-resource identifier*: Provide applicable identifiers assigned to one-of-a-kind resources (such as accession numbers assigned to items in a museum collection) if one or more of this class of identifiers have been assigned to the resource and are known to the metadata agency. If the structure of the identifier (e.g., all numerals) is potentially ambiguous it is recommended that the associated agencies' name be included as part of the identifier element. *Citation*: Provide a citation if no standard identifier is assigned and a formal citation is a common means of identifying the resource being described (e.g., a journal article). Use the element Identifier on a more abstract level; identifier for local library holdings like call number could be put into the DC-Lib element Location. (OpenURL may be registered as an encoding scheme).
Type of term	element
Refines	
Refined By	bibliographicCitation
Has Encoding Scheme	URI - http://purl.org/dc/terms/URI If not expressed by URI - SICI (Serial Item and Contribution Identifier), ISBN (International Standard Book Number), ISSN (International Standard Serial Number), DOI (Digital Object Identifier). To be registered as encoding schemes, URIs will be provided when available. Note: SICI and DOI may be registered as "info" URI schemes.
Obligation	**MA**
Occurence	

Name of Term	**bibliographicCitation**
Term URI	http://purl.org/dc/terms/bibliographicCitation
Label	Bibliographic Citation
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	A bibliographic reference for the resource.
DC-Lib Definition	Bibliographic citation information for a journal article, or similar bibliographic resource

Source Comments	Recommended practice is to include sufficient bibliographic detail to identify the resource as unambiguously as possible, whether or not the citation is in a standard form.
DC-Lib Comments	A draft version of "Guidelines for encoding bibliographic citations in DC metadata" can be found at http://epub.mimas.ac.uk/DC/dc-citation-guidelines/.
Type of term	element refinement
Refines	identifier
Refined By	
Has Encoding Scheme	
Obligation	**O**
Occurence	

Back to TOC

Name of Term	**source**
Term URI	http://purl.org/dc/elements/1.1/source
Label	Source
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	A Reference to a resource from which the present resource is derived.
DC-Lib Definition	
Source Comments	The present resource may be derived from the Source resource in whole or in part. Recommended best practice is to reference the Source resource by means of a string or number conforming to a formal identification system.
DC-Lib Comments	A constructed or derived ID of a local nature may be supplied, including a specification of the supplying organisation, in the absence of a globally unique one. Use only when the described resource is the result of digitization of non-digital originals. Otherwise, use Relation.
Type of term	element
Refines	
Refined By	
Has Encoding Scheme	URI - http://purl.org/dc/terms/URI SICI (Serial Item and Contribution Identifier), ISBN (International Standard Book Number), ISSN (International Standard Serial Number), DOI (Digital Object Identifier). To be registered as encoding schemes (these may also be expressed as URIs). URI will be provided when available.

	In the absence of a globally unique Identifier, a constructed or derived one of a local nature can be supplied, including a specification of the supplying organisation. (Consider registering OpenURL as an encoding scheme).
Obligation	**O**
Occurence	

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Name of Term	**language**
Term URI	http://purl.org/dc/elements/1.1/language
Label	Language
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	A language of the intellectual content of the resource.
DC-Lib Definition	
Source Comments	Recommended best practice is to use RFC 3066 [RFC3066], which, in conjunction with ISO 639 [ISO639], defines two- and three-letter primary language tags with optional subtags. Examples include "en" or "eng" for English, "akk" for Akkadian, and "en-GB" for English used in the United Kingdom
DC-Lib Comments	Language code may be used as a value for the Language qualifier to any DCMES element. Recommend codes rather than text, taken from ISO 639-2 bibliographic codes. Mandatory if applicable means if there is any spoken or written text, supply.
Type of term	element
Refines	
Refined By	

Has Encoding Scheme	ISO639-2 - DCMI approved encoding scheme. Use of the ISO 639-2 bibliographic code is preferred. A mapping is available at http://lcweb.loc.gov/standards/iso639-2/englangn.html. RFC 1766 - This scheme has been replaced by RFC 3066, which allows for a code from ISO 639-2 when there is no corresponding ISO 639-1 code. RFC 3066 is being registered as a DCMI approved scheme. RFC 3066 - Internet RFC 3066 'Tags for the Identification of Languages' specifies a primary subtag which is a two-letter code taken from ISO 639 part 1 or a three-letter code taken from ISO 639 part 2, followed optionally by a two-letter country code taken from ISO 3166. When a language in ISO 639 has both a two-letter and three-letter code, use the two-letter code; when it has only a three-letter code, use the three-letter code. This RFC replaces RFC 1766.
Obligation	**MA** (ISO 639-2), **O** (RFC 1766, RFC 3066)
Occurence	

Name of Term	**relation**
Term URI	http://purl.org/dc/elements/1.1/relation
Label	Relation
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	A reference to a related resource.
DC-Lib Definition	
Source Comments	Recommended best practice is to reference the resource by means of a string or number conforming to a formal identification system.
DC-Lib Comments	Relation without qualifier is optional; where it is qualified the recommendation for the qualifier should be followed. If using qualifiers, use the most specific one that is applicable. When no Identifier is available, a bibliographic description may be constructed. Future work will involve developing guidelines. Recommended use with qualifiers in certain situations: - When documents in hand are parts of "host documents" (e.g. journal, monographic series) and when there is no citation information in DC identifier. - When documents in hand are revisions or reformatted issues of earlier publications and information on these are readily available. OpenURL may be registered as an encoding scheme.
Type of term	element
Refines	
Refined By	isVersionOf, isFormatOf, hasFormat, isReplacedBy, Replaces, isPartOf, hasPart, Requires, isReferencedBy, References

Has Encoding Scheme	URI - http://purl.org/dc/terms/URI If not expressed by URI - SICI (Serial Item and Contribution Identifier), ISBN (International Standard Book Number), ISSN (International Standard Serial Number), DOI (Digital Object Identifier). To be registered as encoding schemes (these may also be expressed as URIs). http://dublincore.org/usage/terms/dc/current-schemes/
Obligation	**O**
Occurence	

Name of Term	**isVersionOf**
Term URI	http://purl.org/dc/terms/isVersionOf
Label	Is Version Of
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	The described resource is a version, edition, or adaptation of the referenced resource. Changes in version implies substantive changes in content rather than differences in format.
DC-Lib Definition	
Source Comments	
DC-Lib Comments	Do not include qualifier HasVersion, since this implies that it is clear which came first. Future work includes possibly identifying a need for HasVersion.
Type of term	element refinement
Refines	Relation
Refined By	
Has Encoding Scheme	URI - http://purl.org/dc/terms/URI If not expressed by URI - SICI (Serial Item and Contribution Identifier), ISBN (International Standard Book Number), ISSN (International Standard Serial Number), DOI (Digital Object Identifier). To be registered as encoding schemes (these may also be expressed as URIs). http://dublincore.org/usage/terms/dc/current-schemes/
Obligation	**R**
Occurence	

Name of Term	**isFormatOf**
Term URI	http://purl.org/dc/terms/isFormatOf

Label	Is Format Of
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	The described resource is the same intellectual content of the referenced resource, but presented in another format.
DC-Lib Definition	
Source Comments	
DC-Lib Comments	Use when there are alternative formats and it is not clear which preceded the other.
Type of term	element refinement
Refines	Relation
Refined By	
Has Encoding Scheme	URI - http://purl.org/dc/terms/URI If not expressed by URI - SICI (Serial Item and Contribution Identifier), ISBN (International Standard Book Number), ISSN (International Standard Serial Number), DOI (Digital Object Identifier). To be registered as encoding schemes (these may also be expressed as URIs). http://dublincore.org/usage/terms/dc/current-schemes/
Obligation	**R**
Occurence	

Name of Term	**hasFormat**
Term URI	http://purl.org/dc/terms/hasFormat
Label	Has Format
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	The described resource pre-existed the referenced resource, which is essentially the same intellectual content presented in another format.
DC-Lib Definition	
Source Comments	
DC-Lib Comments	Use only when the described resource references alternative physical formats. Example is the metadata for a home page for a dissertation that references that dissertation in various alternative formats (e.g. PDF, Postscript, etc.)
Type of term	element refinement
Refines	Relation

Refined By	
Has Encoding Scheme	URI - http://purl.org/dc/terms/URI If not expressed by URI - SICI (Serial Item and Contribution Identifier), ISBN (International Standard Book Number), ISSN (International Standard Serial Number), DOI (Digital Object Identifier). To be registered as encoding schemes (these may also be expressed as URIs). http://dublincore.org/usage/terms/dc/current-schemes/
Obligation	**R**
Occurence	

Name of Term	**isReplacedBy**
Term URI	http://purl.org/dc/terms/isReplacedBy
Label	Is Replaced By
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	The described resource is supplanted, displaced, or superceded by the referenced resource.
DC-Lib Definition	
Source Comments	
DC-Lib Comments	Used for succeeding version.
Type of term	element refinement
Refines	Relation
Refined By	
Has Encoding Scheme	URI If not expressed by URI - SICI (Serial Item and Contribution Identifier), ISBN (International Standard Book Number), ISSN (International Standard Serial Number), DOI (Digital Object Identifier). To be registered as encoding schemes (these may also be expressed as URIs). http://dublincore.org/usage/terms/dc/current-schemes/
Obligation	**O**
Occurence	

Name of Term	**replaces**
Term URI	http://purl.org/dc/terms/replaces
Label	Replaces

Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	The described resource supplants, displaces, or supersedes the referenced resource.
DC-Lib Definition	
Source Comments	
DC-Lib Comments	Used for preceding version.
Type of term	element refinement
Refines	Relation
Refined By	
Has Encoding Scheme	URI - http://purl.org/dc/terms/URI If not expressed by URI - SICI (Serial Item and Contribution Identifier), ISBN (International Standard Book Number), ISSN (International Standard Serial Number), DOI (Digital Object Identifier). To be registered as encoding schemes (these may also be expressed as URIs). http://dublincore.org/usage/terms/dc/current-schemes/
Obligation	**O**
Occurence	

Name of Term	**isPartOf**
Term URI	http://purl.org/dc/terms/isPartOf
Label	Is Part Of
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	The described resource is a physical or logical part of the referenced resource.
DC-Lib Definition	
Source Comments	
DC-Lib Comments	Recommended use when documents in hand are parts of "host documents" (e.g. journal, monographic series) and when there is no citation information in DC identifier (if used by Citation WG).
Type of term	element refinement
Refines	Relation
Refined By	
Has Encoding Scheme	URI - http://purl.org/dc/terms/URI If not expressed by URI - SICI (Serial Item and Contribution Identifier), ISBN (International Standard Book Number), ISSN (International Standard Serial Number), DOI (Digital Object Identifier). To be registered as encoding schemes (these may also be expressed as URIs). http://dublincore.org/usage/terms/dc/current-schemes/
Obligation	**R**
Occurence	

Name of Term	**hasPart**
Term URI	http://purl.org/dc/terms/hasPart
Label	Has Part
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	The described resource includes the referenced resource either physically or logically.
DC-Lib Definition	
Source Comments	
DC-Lib Comments	
Type of term	element refinement
Refines	Relation
Refined By	
Has Encoding Scheme	URI - http://purl.org/dc/terms/URI If not expressed by URI - SICI (Serial Item and Contribution Identifier), ISBN (International Standard Book Number), ISSN (International Standard Serial Number), DOI (Digital Object Identifier). To be registered as encoding schemes (these may also be expressed as URIs). http://dublincore.org/usage/terms/dc/current-schemes/
Obligation	**O**
Occurence	

Name of Term	requires
Term URI	http://purl.org/dc/terms/requires
Label	Requires
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	The described resource requires the referenced resource to support its function, delivery, or coherence of content.
DC-Lib Definition	
Source Comments	
DC-Lib Comments	
Type of term	element refinement
Refines	Relation
Refined By	
Has Encoding Scheme	URI - http://purl.org/dc/terms/URI If not expressed by URI - SICI (Serial Item and Contribution Identifier), ISBN (International Standard Book Number), ISSN (International Standard Serial Number), DOI (Digital Object Identifier). To be registered as encoding schemes (these may also be expressed as URIs). http://dublincore.org/usage/terms/dc/current-schemes/
Obligation	**R**
Occurence	

Name of Term	isReferencedBy
Term URI	http://purl.org/dc/terms/isReferencedBy
Label	Is Referenced By
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	The described resource is referenced, cited, or otherwise pointed to by the referenced resource.
DC-Lib Definition	
Source Comments	
DC-Lib Comments	May be of limited use in terms of later resources referencing the initial resource, but may be useful to link to a major review or assessing essay.
Type of term	element refinement
Refines	Relation

Refined By	
Has Encoding Scheme	URI - http://purl.org/dc/terms/URI If not expressed by URI - SICI (Serial Item and Contribution Identifier), ISBN (International Standard Book Number), ISSN (International Standard Serial Number), DOI (Digital Object Identifier). To be registered as encoding schemes (these may also be expressed as URIs). http://dublincore.org/usage/terms/dc/current-schemes/
Obligation	**O**
Occurence	

Name of Term	**references**
Term URI	http://purl.org/dc/terms/references
Label	References
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	The described resource references, cites, or otherwise points to the referenced resource.
DC-Lib Definition	
Source Comments	
DC-Lib Comments	May be of limited use except for other resources that are far reaching or thorough criticisms. Not appropriate, for example, to include all references from the bibliography of the described resource in repeated Relation. References tags
Type of term	element refinement
Refines	Relation
Refined By	
Has Encoding Scheme	URI - http://purl.org/dc/terms/URI If not expressed by URI - SICI (Serial Item and Contribution Identifier), ISBN (International Standard Book Number), ISSN (International Standard Serial Number), DOI (Digital Object Identifier). To be registered as encoding schemes (these may also be expressed as URIs). http://dublincore.org/usage/terms/dc/current-schemes/
Obligation	**O**
Occurence	

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Name of Term	**coverage**

Term URI	http://purl.org/dc/elements/1.1/coverage
Label	Coverage
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	The extent or scope of the content of the resource
DC-Lib Definition	
Source Comments	Coverage will typically include spatial location (a place name or geographic coordinates), temporal period (a period label, date, or date range) or jurisdiction (such as a named administrative entity). Recommended best practice is to select a value from a controlled vocabulary (for example, the Thesaurus of Geographic Names [TGN]) and that, where appropriate, named places or time periods be used in preference to numeric identifiers such as sets of coordinates or date ranges.
DC-Lib Comments	Use Coverage with qualifier Spatial or Temporal; use of unqualified Coverage is discouraged in qualified DC.
Type of term	element
Refines	
Refined By	Spatial, Temporal
Has Encoding Scheme	See Source Comments above.
Obligation	**O**
Occurence	

Name of Term	**spatial**
Term URI	http://purl.org/dc/terms/spatial
Label	Spatial
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	Spatial characteristics of the intellectual content of the resource.
DC-Lib Definition	
Source Comments	Coverage will typically include spatial location (a place name or geographic coordinates), temporal period (a period label, date, or date range) or jurisdiction (such as a named administrative entity). Recommended best practice is to select a value from a controlled vocabulary (for example, the Thesaurus of Geographic Names [TGN]) and that, where appropriate, named places or time periods be used in preference to numeric identifiers such as sets of coordinates or date ranges.

DC-Lib Comments	Use this element for geographic coverage. The value of this element may also be included in Subject if desired. There is a need to evaluate DCMI Box and DCMI Point as for their usefulness for libraries and how they relate to current library practices for recording cartographic data.
Type of term	element refinement
Refines	Coverage
Refined By	
Has Encoding Scheme	DCMI Point - http://purl.org/dc/terms/Point ISO 3166 - http://purl.org/dc/terms/ISO3166 DCMI Box - http://purl.org/dc/terms/Box TGN - http://purl.org/dc/terms/TGN Use Library of Congress URI for MARC Geographic Area Codes, MARC Country Codes e.g. http://www.loc.gov/MARC.GAC
Obligation	**MA**
Occurence	

Name of Term	**temporal**
Term URI	http://purl.org/dc/terms/temporal
Label	Temporal
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	Temporal characteristics of the intellectual content of the resource.
DC-Lib Definition	
Source Comments	Coverage will typically include temporal period. Recommended best practice is to select a value from a controlled vocabulary.
DC-Lib Comments	The value of this element may also be included in Subject if desired. Prefer standard representation of date/time values in both DC.Date and dc.coverage.temporal, although textual descriptions may also be used.
Type of term	element refinement
Refines	Coverage
Refined By	
Has Encoding Scheme	DCMI Period - http://purl.org/dc/terms/Period W3C-DTF - http://purl.org/dc/terms/W3CDTF
Obligation	**MA**
Occurence	

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Name of Term	**rights**
Term URI	http://purl.org/dc/elements/1.1/rights
Label	Rights
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	Information about rights held in and over the resource.
DC-Lib Definition	
Source Comments	Typically, a Rights element will contain a rights management statement for the resource, or reference a service providing such information. Rights information often encompasses Intellectual Property Rights (IPR), Copyright, and various Property Rights. If the Rights element is absent, no assumptions can be made about the status of these and other rights with respect to the resource.
DC-Lib Comments	Need to determine how to use for library applications; there is ongoing discussion on rights metadata in various applications.

Type of term	element
Refines	
Refined By	
Has Encoding Scheme	URI - http://purl.org/dc/terms/URI
Obligation	**R if applicable (if there are encumbrances)**
Occurence	

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Name of Term	**audience**
Term URI	http://purl.org/dc/terms/audience
Label	Audience
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	A class of entity for whom the resource is intended or useful.
DC-Lib Definition	
Source Comments	A class of entity may be determined by the creator or the publisher or by a third party.
DC-Lib Comments	Approved by DCMI Usage Board October 2001. Need to evaluate whether any refinements or encoding scheme(s) are appropriate for DC-Lib use. MARC target audience codes may be considered.
Type of term	element
Refines	
Refined By	
Has Encoding Scheme	See DC-Lib comment
Obligation	**O**
Occurence	

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Name of Term	**edition**
Term URI	http://www.loc.gov/mods
Label	Edition
Defined By	

Source Definition	
DC-Lib Definition	Information designating the version or edition of a work.
Source Comments	
DC-Lib Comments	Being able to specify the version or edition of a given work is often critical to successful resource discovery and identification to determine whether a resource is the same as another one. This is particularly important for resources that change frequently. This is not to be used for versions in the sense of different physical formats (e.g. the PDF version of a textual resource). Use existing element <edition> under <publicationInfo> in the Metadata Object Description Schema Decision by DCMI Usage Board in May 2002. This element will generally not be repeated. Element should be included if necessary for identification.
Type of term	element
Refines	
Refined By	
Has Encoding Scheme	
Obligation	**R**
Occurence	

Name of Term	**location**
Term URI	http://www.loc.gov/mods
Label	Location
Defined By	
Source Definition	
DC-Lib Definition	Identifies the organization holding the resource or from which access is obtained.
Source Comments	

DC-Lib Comments	Use for a physical location that allows the user to retrieve the item when a URI is not appropriate (e.g. for physical items not available electronically). This also facilitates access if the URI doesn't retrieve anything or only a poor substitute. Can also contain further identification within a location such as call number, accession number. Use existing element <location> in the Metadata Object Description Schema Decision by DCMI Usage Board in May 2002.
Type of term	element
Refines	
Refined By	
Has Encoding Scheme	MARC Code list for Organizations - http://www.loc.gov/marc/organizations/ Need to evaluate other encoding schemes, including ISO/DIS 15511.3 (International Standard Identifier for Libraries and Related Organizations (ISIL)). May also want to investigate a URI to an entry in an authority file.
Obligation	**MA**
Occurence	

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Encoding Schemes

Name of Term	**Box**
Term URI	http://purl.org/dc/terms/Box
Label	DCMI Box
Defined By	http://purl.org/dc/terms/
Definition	The DCMI Box identifies a region of space using its geographic limits.
Comments	
See Also	http://dublincore.org/documents/dcmi-box/
Type of term	encoding scheme
Encoding Scheme For	Spatial

Name of Term	**DCMIType**
Term URI	http://purl.org/dc/dcmitype/
Label	DCMI Type Vocabulary
Defined By	http://purl.org/dc/terms/

Definition	A list of types used to categorize the nature or genre of the content of the resource.
Comments	
See Also	http://dublincore.org/documents/dcmi-type-vocabulary/
Type of term	encoding scheme
Encoding Scheme For	Type

Name of Term	**DDC**
Term URI	http://purl.org/dc/terms/DDC
Label	DDC
Defined By	http://purl.org/dc/terms/
Definition	Dewey Decimal Classification
Comments	
See Also	http://www.oclc.org/dewey/
Type of term	encoding scheme
Encoding Scheme For	Subject

Name of Term	**DOI**
Term URI	URI will be provided when available
Label	DOI
Defined By	
Definition	Digital Object Identifier
Comments	May be registered as "info" URI scheme.
See Also	http://www.doi.org/
Type of term	encoding scheme
Encoding Scheme For	Identifier, Source, IsVersionOf, IsFormatOf, HasFormat, IsReplacedBy, Replaces, IsPartOf, HasPart, Requires, IsReferencedBy, References

Name of Term	**IMT**
Term URI	http://purl.org/dc/terms/IMT
Label	IMT
Defined By	http://purl.org/dc/terms/
Definition	The Internet media type of the resource.

Comments	
See Also	http://www.isi.edu/in-notes/iana/assignments/media-types/media-types
Type of term	encoding scheme
Encoding Scheme For	Format, Medium

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Name of Term	**ISBN**
Term URI	URI will be provided when available
Label	ISBN
Defined By	
Definition	International Standard Book Number
Comments	
See Also	http://www.isbn.org/standards/home/isbn/international/index.asp
Type of term	encoding scheme
Encoding Scheme For	Identifier, Source, IsVersionOf, IsFormatOf, HasFormat, IsReplacedBy, Replaces, IsPartOf, HasPart, Requires, IsReferencedBy, References

Name of Term	**ISO3166**
Term URI	http://purl.org/dc/terms/ISO3166
Label	ISO 3166
Defined By	http://purl.org/dc/terms/
Definition	ISO 3166 Codes for the representation of names of countries.
Comments	
See Also	http://www.din.de/gremien/nas/nabd/iso3166ma/codlstp1/index.html
Type of term	encoding scheme
Encoding Scheme For	Spatial

Name of Term	ISO639-2
Term URI	http://purl.org/dc/terms/ISO639-2
Label	ISO 639-2
Defined By	http://purl.org/dc/terms/
Definition	ISO 639-2: Codes for the representation of names of languages
Comments	
See Also	http://www.loc.gov/standards/iso639-2/
Type of term	encoding scheme
Encoding Scheme For	Language

Name of Term	ISO8601
Term URI	http://purl.org/dc/terms/ISO8601
Label	ISO 8601
Defined By	http://purl.org/dc/terms/
Definition	
Comments	
See Also	
Type of term	encoding scheme
Encoding Scheme For	Date, Created, Valid, Available, Issued, Modified, DateCopyrighted, DateSubmitted, DateAccepted, DateCaptured

Name of Term	ISSN
Term URI	URI will be provided when available
Label	ISSN
Defined By	
Definition	International Standard Serial Number
Comments	
See Also	http://www.issn.org:8080/pub/
Type of term	encoding scheme
Encoding Scheme For	Identifier, Source, IsVersionOf, IsFormatOf, HasFormat, IsReplacedBy, Replaces, IsPartOf, HasPart, Requires, IsReferencedBy, References

Name of Term	LCC

Term URI	http://purl.org/dc/terms/LCC
Label	LCC
Defined By	http://purl.org/dc/terms/
Definition	Library of Congress Classification
Comments	
See Also	http://lcweb.loc.gov/catdir/cpso/lcco/lcco.html
Type of term	encoding scheme
Encoding Scheme For	Subject

Name of Term	**LCSH**
Term URI	http://purl.org/dc/terms/LCSH
Label	LCSH
Defined By	http://purl.org/dc/terms/
Definition	Library of Congress Subject Headings
Comments	
See Also	http://lcweb.loc.gov/cds/lcsh.html
Type of term	encoding scheme
Encoding Scheme For	Subject

Name of Term	**MESH**
Term URI	http://purl.org/dc/terms/MESH
Label	MESH
Defined By	http://purl.org/dc/terms/
Definition	Medical Subject Headings
Comments	
See Also	http://nlm.nih.gov/mesh/meshhome.html
Type of term	encoding scheme
Encoding Scheme For	Subject

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Name of Term	Period
Term URI	http://purl.org/dc/terms/Period
Label	DCMI Period
Defined By	http://purl.org/dc/terms/
Definition	A specification of the limits of a time interval.
Comments	
See Also	http://dublincore.org/documents/dcmi-period/
Type of term	encoding scheme
Encoding Scheme For	Temporal

Name of Term	Point
Term URI	http://purl.org/dc/terms/Point
Label	DCMI Point
Defined By	http://purl.org/dc/terms/
Definition	The DCMI Point identifies a point in space using its geographic coordinates.
Comments	
See Also	http://dublincore.org/documents/dcmi-point/
Type of term	encoding scheme
Encoding Scheme For	Spatial

Name of Term	RFC3066
Term URI	http://purl.org/dc/terms/RFC3066
Label	RFC3066
Defined By	http://purl.org/dc/terms/
Definition	Internet RFC 3066 'Tags for the Identification of Languages' specifies a primary subtag which is a two-letter code taken from ISO 639 part 1 or a three-letter code taken from ISO 639 part 2, followed optionally by a two-letter country code taken from ISO 3166. When a language in ISO 639 has both a two-letter and three-letter code, use the two-letter code; when it has only a three-letter code, use the three-letter code. This RFC replaces RFC 1766.
Comments	
See Also	http://www.ietf.org/rfc/rfc3066.txt
Type of term	encoding scheme

Encoding Scheme For	Language

Name of Term	**SICI**
Term URI	URI will be provided when available
Label	SICI
Defined By	
Definition	Serial Item and Contributor Identifier
Comments	May be registered as "info" URI scheme.
See Also	http://sunsite.berkeley.edu/SICI/
Type of term	encoding scheme
Encoding Scheme For	Identifier, Source, IsVersionOf, IsFormatOf, HasFormat, IsReplacedBy, Replaces, IsPartOf, HasPart, Requires, IsReferencedBy, References

Name of Term	**TGN**
Term URI	http://purl.org/dc/terms/TGN
Label	TGN
Defined By	http://purl.org/dc/terms/
Definition	The Getty Thesaurus of Geographic Names.
Comments	
See Also	http://www.getty.edu/research/tools/vocabulary/tgn/index.html
Type of term	encoding scheme
Encoding Scheme For	Spatial

Name of Term	**UDC**
Term URI	http://purl.org/dc/terms/UDC
Label	UDC
Defined By	http://purl.org/dc/terms/
Definition	Universal Decimal Classification
Comments	
See Also	http://www.udcc.org/
Type of term	encoding scheme
Encoding Scheme For	Subject

Name of Term	URI
Term URI	http://purl.org/dc/terms/URI
Label	URI
Defined By	http://purl.org/dc/terms/
Definition	A URI uniform resource identifier.
Comments	
See Also	http://www.itef.org/rfc/rfc2396.txt
Type of term	encoding scheme
Encoding Scheme For	Description, Identifier, Source, Relation, Rights, Abstract, TableOfContents, IsVersionOf, IsFormatOf, HasFormat, IsReplacedBy, Replaces, IsPartOf, HasPart, Requires, IsReferencedBy, References

Name of Term	W3CDTF
Term URI	http://purl.org/dc/terms/W3CDTF
Label	W3C-DTF
Defined By	http://purl.org/dc/terms/
Definition	W3C encoding rules for dates and times - a profile based on ISO 8601.
Comments	
See Also	http://www.w3c.org/TR/NOTE-datetime
Type of term	encoding scheme
Encoding Scheme For	Date, Created, Valid, Available, Issued, Modified, DateCopyrighted, DateSubmitted, DateAccepted, DateCaptured, Temporal

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5. Acknowledgements

Thanks to all members of the DC-Libraries Application Profile drafting committee who participated in the first draft of this application profile. Thanks to Nicki Clegg of Web Services Delivery Unit, the British Library, for her work in re-formatting the profile. This revision is based on decisions made by the Usage Board in 2003 and Working Group discussion.

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Stuart Weibel (DCMI)
Robin Wendler (Harvard University)
Mary Woodley (California State University, Northridge)

6. Major changes since last update

- Reformatted to conform to the CEN DC AP Guidelines.
- "Best practice" and "Open questions" from previous versionmoved to "DC-Lib comments".
- Encoding schemes referenced in table of relevant element and expanded in separate tables at the end of the profile.
- Date, type, identifier, and coverage elements edited to reflect Usage Board decisions.
- DC URI added for ISO8601 in anticipation of this being included in dmi-terms document.
- Creator, contributor, and publisher updated to reflect Role refinement decision.
- Other edits according to Working Group discussions see http://www.jiscmail.ac.uk/cgi-bin/webadmin?A2=ind0311&L=dc-libraries&T=0&F=&S=&P=153

Report of the DC-Education Working Group Breakout Session

12 September 2005 (15:30-19:00), Madrid, Spain

Universidad Carlos III de Madrid, Padre Soler Building, Seminar Room 4.1.E05

Session 1 (15:30-17:00)

Stuart Sutton began the session with a general introduction to the history of the WG, especially the successful proposals for DC elements/refinements and the ongoing work with IEEE-LOM. There was an early realization that a DC-Ed application profile would ideally include some properties from IEEE-LOM, and the Ottawa Communiqué reinforced the commitment of both bodies to pursue that goal.

Stuartreviewed progress towards the 2004-2005 deliverables. The DCMI/IEEE-LOM cooperative work is continuing to progress. The Project Clearinghouse did not move forward, but the DC-Ed Application Profile is moving along.

Mikael Nilsson presented information about the cooperative work between DCMI and IEEE-LOM, which has picked up again subsequent to the approval of the DC Abstract Model. He pointed out that LOM elements are not immediately usable in combination with DCMI elements in APs. The only way to do so has been to use RDF to combine LOM and DC. With the new formalism introduced with the Abstract Model, where relationships between properties, values, encoding schemes are specified, discrepancies between bindings (XML, RDF, XHTML) can be resolved to ensure interoperability.

Mikael made some recommendations for using LOM metadata in DC descriptions. There will be some loss in transformations from one to the other in certain areas, for instance: LOM supports ordering and DC does not, so ordering in a LOM record cannot be carried into a DC record. He noted that the DC Abstract Model has emerged in part because of the Semantic Web's need to more firmly define relationships. That said, most of the problems in using DC and LOM together stem from the fact that DC is essentially flat and LOM is hierarchical, so properties cannot be pulled from the hierarchy and re-used without changing the context, and perhaps the definition. Some work still remains in this area before firm written recommendations can be made.

Session 2 (17:30-19:00)

Stuart reviewed the draft DC-ED application profile with the group. He pointed out that something called an AP has been floating around since the 2000 meeting in Australia. Formalizing the AP and documenting it properly has been delayed because there were too many things we don't know how to do properly. Given the work of the DC-Libraries WG and the CEN efforts to standardize how APs are presented, both as human- and machine-readable documents, it seemed that the time was coming where the work could be brought to completion.

At the WG meeting in Shanghai we decided we would go ahead, despite the still unanswered questions. The first step was the formation of a volunteer Drafting Committee (see the Committee wiki at: http://dublincore.org/educationwiki/DC_2dEducation_20Application_20Profile (we could still use volunteers. Diane Hillmann is chair, and Stuart Sutton is editor)).

The remainder of the meeting was devoted to discussion about the scope of the application profile (only educationally purposed materials, or a broader range of potentially repurposed materials?), whether energy spent applying constraints and obligations to regular DC elements was well-spent, and, if not, whether a more direct focus on educationally important elements might be a better strategy. The group consensus was that this last seemed reasonable. Additional suggestions included the development of an example set of metadata describing educationally relevant resources, drawn from a number of communities.

To summarize 2005-2006 Deliverables:

- Continue with DCMI/IEEE LOM cooperative work (LOM DCAM)
  - Joint DCMI/IEEE LTSC Taskforce (there was a proposal for this after the DC-Ed meeting, which was subsequently approved by the AB).
- DC-Ed AP continuing work including:
  - Emphasis on educational properties
  - Development of example set
  - Designation of controlled vocabularies

Report Submitted by:
Diane Hillmann, Co-Chair, with assistance from Sarah Currier

Education Application Profile

IMPORTANT NOTICE: The wording of this initial draft relies heavily on the wording of the DC:Libraries Application Profile. The DC-Education Working Group is indebted to the excellent (and pioneering) work of the DC-Libraries Working Group and trust that its members consider our substantial copying as the highest form of flattery.

Creator:	DCMI-Education Working Group
Contributors:	Stuart A. Sutton, University of Washington, USA Diane Hillmann, Cornell University, USA
Date Issued:	7/18/2006
Identifier:	http://www.ischool.washington.edu/sasutton/dcmi/ed/04-05/DC-Education_AP_06-20-05.html
Replaces:	http://www.ischool.washington.edu/sasutton/dcmi/ed/04-05/DC-Education_AP_11-30-04.html
Is Replaced By:	—
Latest Version:	/http://www.ischool.washington.edu/sasutton/dcmi/ed/04-05/DC-Education_AP_06-20-05.html
Status of Document:	DCMI Working Draft.
Description of Document:	This document proposes an application profile that clarifies the use of the Dublin Core Metadata Element Set in education and training-related applications and projects. It was originally prepared by the DCMI-Education Application Profile Drafting Committee, a subset of the DCMI-Education Working Group. This proposal has been formatted in conformance with the Dublin Core Application Profile Guidelines produced by the CEN MMI-DC Workshop.

DC-Education Application Profile

I. Introduction

The concept of *application profiles* (see Application profiles: mixing and matching metadata schemas) has emerged within the Dublin Core Metadata Initiative as a way to declare which elements from which namespaces areused in a particular application or project. Application profiles are defined as schemas which consist of data elements drawn from one or more namespaces, combined together by implementors, and optimized for a particular local application.

The DCMI-Education Working Group has explored various uses of the Dublin Core Metadata Element Set in education and training-related applications and has envisioned the following possible uses of this application profile:

- to serve as an interchange format between various systems using different metadata standards/formats;
- to use for harvesting metadata from data sources within and outside of the education and training domain; and
- to support simple creation of education and training domain records for resources within a variety of systems.

At the DC-Education Working Group meeting at DC2005, the group accepted the proposal that the application profile should focus primarily on the educationally-purposed elements, and rely on general best-practice recommendations for other elements. This implies that the purposes of the AP noted above would include this AP as a component of usage, requiring additional understanding of general DC elements.

Thus, an *education application profile* will be a specification that defines the following, as pertains to the educationally-purposed properties:

- required elements;
- recommended Dublin Core elements;
- recommended Dublin Core element refinements;
- recommended schemes and values (e.g. use of a specific controlled vocabulary or encoding scheme); and
- education and training domain elements used from other namespaces.

This document proposes an application profile that clarifies the use of the educationally relevant portion of the Dublin Core Metadata Element Set and recommends usage in education and training-related applications and projects. It was originally prepared by the DCMI-Education Application

Profile Drafting Committee, a subset of the DCMI-Education Working Group.

2. Namespaces and Format of entries

The DC-Education Application Profile uses terms from the following namespaces:

- DCMI Metadata Terms [http://dublincore.org/documents/dcmi-terms/]
- IEEE Learning Object Metadata (LOM) [To be determined] NOTE: Work continues on the RDF encoding of the IEEE LOM. Once expressed as RDF properties in a declared namespace, LOM elements will be considered for inclusion in the Application Profile.
- The Usage Board has decided that any encoding scheme that has a URI defined in a non-DCMI namespace may be used in an application profile. Those considered so far for this application profile are indicated below.

Format of entries:

This Application Profile is presented following the " CEN CWA 14855: Dublin Core Application Profiles Guidelines" produced by the CEN MMI-DC Workshop. On completion of the application profile according to CWA 14855 and approval of the Usage Board, the Working Group intends to declare a Resource Description Framework (RDF) version of the profile according to Guidelines for Machine-processable Representation of Dublin Core Application Profiles, Final CWA, ISSS/WS-MMI-DC/132 (December 2004) at http://www.ukoln.ac.uk/metadata/cen/ws-mmi-dc/.

Name of Term	A unique token assigned to the term.
Term URI	A Uniform Resource Identifier used to identify the term.
Label	A human-readable label assigned to the term.
Defined By	An identifier of a namespace, pointer to a schema, or bibliographic reference for a document within which the term is defined.
Source Definition	The definition of the term in the namespace in which the term was orginated.
Source Comments	Comments on the term from the namespace in which the term orginated.
DC-Ed Comments	DC-Education comments about the term.
Type of term	The grammatical category of the term (e.g. "Element", "Element Refinement", or "Encoding Scheme").
Refines	The described term semantically refines the referenced term. A refinement makes the meaning of the element narrower or more specific. It will share the meaning of the unrefined element but with a more restricted scope.
Refined By	The described term is semantically refined by the referenced term.
Encoding Scheme For	The described term, an encoding scheme, qualifies the referenced term. Using an encoding scheme will aid in the interpretation of an element value. These schemes include controlled vocabularies and formal notations or parsing rules. A value expressed using an encoding scheme will thus be a token selected from a controlled vocabulary (e.g., a term from a classification system or set of subject headings) or a string formatted in accordance with a formal notation (e.g., "2000-01-01" as the standard expression of a date). If an encoding scheme is not understood by a client or agent, the value may still be useful to a human reader. In some cases, encoding schemes not yet registered are indicated. These will be registered in the future, as appropriate registry applications become available.
Has Encoding Scheme	The described term is qualified by the referenced encoding scheme.
Obligation	Indicates whether the element is required to always or sometimes be present. In this application profile the obligation can be: mandatory (**M**), mandatory if applicable (**MA**), strongly recommended (**R**) or optional (**O**). Mandatory ensures that some of the elements are always supported and mandatory if applicable means that this element must be supported if the information is available. An element with a mandatory obligation must have a value. The strongly recommended and the optional elements should be filled with a value if the information is appropriate to the given resource but if not, they may be omitted.
occurrence	Indicates any limit to the repeatability of the element.

3. Table of Contents

Properties & Property Refinements	Schemes
• Audience • Conforms To • Education Level • Instructional Method • Mediator • Subject • Type	• GEM-BEN (audience) • NSDLEdLvl (educationLevel) • NSDLResType (type) • UKEC (educationLevel @@@) • UKEL (educationLevel)

General notes regarding all elements:

- Any encoding scheme that has a URI defined in a non-DCMI namespace may be used. Where applicable a table has been created for each encoding scheme in a separate section following the main body of tables for elements and refinements.

4. DC-Education Application Profile

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Name of Term	**audience**
Term URI	http://purl.org/dc/terms/audience
Label	Audience
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	A class of entity for whom the resource is intended or useful.
Source Comments	A class of entity may be determined by the creator or the publisher or by a third party.
DC-Ed Comments	Provide terms that most narrowly describe the intended (or easily implied) ultimate beneficiary for the resource being described. Avoid assigning broad classes such as "students" or "trainees" unless the intention of the creator is that the resource is useful for such broad classes. Where available, assign terms from a controlled vocabulary.
Type of term	element
Refines	—
Refined By	mediator educationLevel
Encoding Scheme For	—
Has Encoding Scheme	GEM Beneficiary
Obligation	**O**
occurrence	—

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Name of Term	**conformsTo**
Term URI	http://purl.org/dc/terms/conformsTo

Label	Conforms To
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	A reference to an established standard to which the resource conforms.
Source Comments	[none]
DC-Ed Comments	Specific, unambiguous references to achievement standard statements issued by formal standards bodies such as national, state, or provicial governing bodies or recognized organizations. Such standards include the many state K-12 achievement standards in the U.S. that define what students should learn at specific educational levels. The English National Curriculum is another example of such standards. See, for example, the Achievement Standards Network (http://www.jesandco.org/asn/viewer/default.aspx) repository of state and national U.S. standards.
Type of term	element-refinement
Refines	relation
Refined By	—
Encoding Scheme For	—
Has Encoding Scheme	—
Obligation	—
occurrence	—

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Name of Term	**educationLevel**
Term URI	http://purl.org/dc/terms/educationLevel
Label	Education Level
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	A general statement describing the education or training context. Alternatively, a more specific statement of the location of the audience in terms of its progression through an education or training context.
Source Comments	[none]
DC-Ed Comments	Values assigned for the educationLevel property should be taken from a controlled vocabulary; however, given substantial variance in jurisdictional terminology, no single vocabulary will serve all jurisdictions.
Type of term	element-refinement
Refines	audience
Refined By	—
Encoding Scheme For	—
Has Encoding Scheme	NSDL Education Level; (U.S.) United Kingdon Educational Contents; (UK) United Kingdom Education Levels; (UK)
Obligation	—
occurrence	—

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Name of Term	**instructionalMethod**
Term URI	http://purl.org/dc/terms/instructionalMethod
Label	Instructional Method
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	A process, used to engender knowledge, attitudes and skills, that the resource is designed to support.
Source Comments	Instructional Method will typically include ways of presenting instructional materials or conducting instructional activities, patterns of learner-to-learner and learner-to-instructor interactions, and mechanisms by which group and individual levels of learning are measured. Instructional methods include all aspects of the instruction and learning processes from planning and implementation through evaluation and feedback.
DC-Ed Comments	—
Type of term	element
Refines	—
Refined By	—
Encoding Scheme For	—
Has Encoding Scheme	—
Obligation	—
occurrence	—

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Name of Term	**mediator**
Term URI	http://purl.org/dc/terms/mediator
Label	Mediator
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	A class of entity that mediates access to the resource and for whom the resource is intended or useful.
Source Comments	The audiences for a resource are of two basic classes: (1) an ultimate beneficiary of the resource, and (2) frequently, an entity that mediates access to the resource. The mediator element refinement represents the second of these two classes.
DC-Ed Comments	The mediator property should be used only when it is either explicitly stated (or easily implied) that it was the intention of the creator of the resource that it be placed in the hands of some form of intermediary (e.g., a teacher or trainer) as opposed to the hands of the ultimate beneficiary (e.g., the student or the trainee).
Type of term	element-refinement
Refines	audience
Refined By	—
Encoding Scheme For	—
Has Encoding Scheme	—

Obligation	—
occurrence	—

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Name of Term	**subject**
Term URI	http://purl.org/dc/elements/1.1/subject
Label	Subject
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	The topic of the content of the resource.
Source Comments	Typically, a Subject will be expressed as keywords, key phrases or classification codes that describe a topic of the resource. Recommended best practice is to select a value from a controlled vocabulary or formal classification scheme.
DC-Ed Comments	—
Type of term	element
Refines	—
Refined By	—
Encoding Scheme For	—
Has Encoding Scheme	*[To be added -- Array of subject vocabularies?]*
Obligation	—
occurrence	—

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Name of Term	**type**
Term URI	http://purl.org/dc/elements/1.1/type
Label	Resource Type
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	The nature or genre of the content of the resource.
Source Comments	Type includes terms describing general categories, functions, genres, or aggregation levels for content. Recommended best practice is to select a value from a controlled vocabulary (for example, the DCMI Type Vocabulary [DCMITYPE]). To describe the physical or digital manifestation of the resource, use the Format element.
DC-Ed Comments	—
Type of term	element
Refines	—
Refined By	—
Encoding Scheme For	—

Has Encoding Scheme	NSDL Learning Resource Type (Draft vocabulary)
Obligation	—
occurrence	—

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Name of Term	**GEM-BEN**
Term URI	http://purl.org/gem/instance/GEM-BEN/
Label	GEM Beneficiary
Defined By	http://thegateway.org/
Source Definition	Words or phrases that describe the ultimate beneficiary of the resource being described--usually some category of student or trainee.
Source Comments	—
DC-Ed Comments	—
Type of term	encoding-scheme
Refines	—
Refined By	—
Encoding Scheme For	Audience
Has Encoding Scheme	—
Obligation	—
occurrence	—

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Name of Term	**NSDLEdLvl**
Term URI	http://metadataregistry.org/NSDLEdLvl
Label	NSDL Education Level
Defined By	http://metadataregistry.org/vocabulary/show/id/10
Source Definition	Terms representing levels of formal education relevant in most of the United States.
Source Comments	—
DC-Ed Comments	—
Type of term	encoding-scheme
Refines	—
Refined By	—
Encoding Scheme For	EducationLevel
Has Encoding Scheme	—

Obligation	—
occurrence	—

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Name of Term	**NSDLResType**
Term URI	http://metadataregistry.org/NSDLResType
Label	NSDL Learning Resource Type
Defined By	http://metadataregistry.org/vocabulary/show/id/11
Source Definition	Terms describing learning resources available through the NSDL.
Source Comments	—
DC-Ed Comments	—
Type of term	encoding-scheme
Refines	—
Refined By	—
Encoding Scheme For	Type
Has Encoding Scheme	—
Obligation	—
occurrence	—

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Name of Term	**UKEC**
Term URI	http://www.ukoln.ac.uk/metadata/education/ukec/
Label	UK Educational Contexts
Defined By	http://www.ukoln.ac.uk/metadata/education/
Source Definition	The UK Educational Contexts (UKEC) list provides a set of terms for the environments within which learning and use of learning objects is intended to take place.
Source Comments	—
DC-Ed Comments	—
Type of term	encoding-scheme
Refines	—
Refined By	—
Encoding Scheme For	educationLevel @@@
Has Encoding Scheme	—
Obligation	—

occurrence	—

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Name of Term	**UKEL**
Term URI	http://www.ukoln.ac.uk/metadata/education/ukel/
Label	UK Education Levels
Defined By	http://www.ukoln.ac.uk/metadata/education/
Source Definition	The UK Educational Levels (UKEL) list provides a set of high-level terms to name educational levels across all UK educational sectors.
Source Comments	—
DC-Ed Comments	—
Type of term	encoding-scheme
Refines	—
Refined By	—
Encoding Scheme For	educationLevel
Has Encoding Scheme	—
Obligation	—
occurrence	—

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5. Acknowledgements

Members of the Drafting Committee:

- Diane Hillmann, Chair (Cornell University, US)
- Stuart Sutton, Editor (University of Washington, US)
- Louise Ratliff (UCLA, US)
- Nancy Conner (Indiana Humanities Council, US)
- Mike Collett (Schemeta, UK)
- Jon Mason (education.au, Australia)
- Katy Ginger (DLESE, US)
- Norm Friesen (CanCore, Canada)
- Nancy Morgan (GEM Exchange, US)
- Brandon Muramatsu (Utah State, US)

6. Major changes since last update

- Added note regarding IEEE LOM RDF binding and pending inclusion of LOM RDF properties
- Eliminated "DC-Ed Definition" from all tables
- Added "Type of term" text (and link to definition) for all tables
- Added bibliographicCitation and instructionalMethod
- Added missing "Source Comment" when necessary
- Added "Refines" links ("Refined by" still to do)
- Added membership of drafting committee as of 06/10/05
- Added information about the DC2005 meeting
- Eliminated information on general DC elements (except Subject and Type, to enable recommendation of controlled vocabularies)
- Fixed misspelling of "occurrence"

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DC-Government Application Profile Wiki

Chair:	HansOverbeek, Advies Overheid.nl
Status:	This editorial board is currently active.
Established:	2005-09-14
Charter:	The EditorialBoard was formed during the DC-Government Working Group meeting at the DC-conference in Leganes, Madrid, with the objectives to discuss and further develop the draft DC-Government Application Profile. The meeting saw value in an Application Profile as a reference model to be used in government implementations. Rather than developing a "one size fits all" AP, this could serve as a good practice example, dealing with issues relevant to governments.
Instructions:	Read the workplan, then the issues and don't hesitate to change whatever you think would improve the government application profile. To track who says what, it would be nice if you supplied your name by logging on. After making changes please send a notification to the DC-Government mailinglist: DC-GOVERNMENT@JISCMAIL.AC.UK.

IMPORTANT: Do **not** cite materials in this Wiki other than for the purposes of collaborating on document creation. This Wiki is intended to be used to work on draft copies of documents. Finished documents will be published, in a persistent and citable form, on the DCMI Web site.

Please announce any changes to this Wiki via the DC-GOVERNMENT@jiscmail.ac.uk list.

Workplan

(Steps marked with * have been made)

- * Starting point is the working draft AP by Palle Aagaard and John Roberts issued 2005-08-10.
- * Ask people who volunteered for the Editorial Board (EB) in the Madrid WG-meeting to participate.
- * Propose the issues raised in Madrid as mentioned above and this approach to the EB. Call for any other ideas.
- * Discussion in the EB on collected issues.
- * Whenever appropriate bring discussions on idividual issues to the DC-GOVERNMENT mailing list
- * Bring the document “review DC-GOV from the perspective of ONL-WMS” by Melle Stegeman up-to-date to the latest experiences in the Netherlands. (See issues on elements)
- * Share that updated review with the EB
- * Whenever appropriate bring discussions on idividual issues coming from the review to the DC-GOVERNMENT mailing list
- If conclusions can be reached, adapt the AP with:
- explanation of the position of the AP (as a reference model not a standard for all governments)
- definition of the scope and functional requirements of the AP
- improve layout and printability of the AP
- Present the adapted AP in Mexico!

Progress

The EB is in contact and agreed on the work plan above. HansOverbeek started this wiki to be able to discuss issues together and to allow others to drop in and participate, without the need to go through long mail threads.

DCGAP Issues

Issue 1: Position of the DC-Government Application Profile

Describe the intended position of the DC-Gov Application profile – as a reference model, not a standard for all governments

Proposal: Self:DCGAPPosition

Issue 2: Scope & functional requirements of the DCGAP

Scope of Application Profile & functional requirements must be addressed. Start with the introduction of the Draft DCGAP. It describes the scope and functional requirements already for a great deal. We could add to that a description on where and why the DCGAP defers from standard DCMI definitions.

Proposal: Self:DCGAPScope

Issue 3: Discussion on Elements

Charter has to be written and distributed on the DC GOV mail list for discussion

Proposal: Self:Elements

Proposed approach to make the charter: (Please give your comments!)

- * Start from the DCGOVAP Draft

a. All elements that comply 1:1 with DC and with 1 or more usage get status: conforming (green)
b. All elements with one or more issues get status: issue (red)
c. All other elements get status: proposed (orange)

- * Send to EB
- Each EB member indicates which elements are used and which elements have issues
  a. Each element with one or more issues becomes red
  b. Each orange element with usage and no issues becomes green
- EB comments on issues
- * Share conclusions with DC-GOV mail list and ask for input
- Try to agree on issues and make red elements green
- Finally deprecate orange elements (no usage).
- In Mexico:
  a. Decide to recommend all green elements
  b. Try to discuss on open issues

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You can edit any page by pressing the link at the bottom of the page. Capitalized words joined together form a WikiName, which hyperlinks to another page. The highlighted title searches for all pages that link to the current page. Pages which do not yet exist are linked with a question mark: just follow the link and you can add a definition.

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To learn more about what a WikiWikiWeb is, read about MoinMoin:WhyWikiWorks and the MoinMoin:WikiNature. Also, consult the MoinMoin:WikiWikiWebFaq.

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- WikiSandBox: feel free to change this page and experiment with editing
- FindPage: search or browse the database in various ways
- SyntaxReference

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DC-Government Application Profile (DC-GAP)

Scope

The concept of **application profiles** (see Application profiles: mixing and matching metadata schemas) has emerged within the Dublin Core Metadata Initiative as a way to declare which elements from which namespaces are used in a particular application or project. Application profiles are defined as schemas which consist of data elements drawn from one or more namespaces, combined together by implementors, and optimised for a particular local application. The DCMI-government Working Group has explored various uses of the Dublin Core Metadata Element Set in governments and related applications and has envisioned the following possible uses; i.e. purpose and scope:

- primarily for resource discovery of networked texts – but can also be used for discovery of other types of resources
- to serve as an interchange format between various systems using different metadata standards/formats
- to use for harvesting metadata from data sources within and outside of the government domain
- to allow for acquiring resource discovery metadata from non-government creators using DC

So, the application profile should be used for describing all resources - especially networked resources. This means resources which are directly or indirectly accessed by the internet as e.g. electronic reports, documents, websites, services, events etc.

With the application profile it should be possible to discover and locate resources regardless of whether the resource itself is in an electronic format or not.

The application profile is not suited for describing people or organizations and is not intended to help with the management of resources.

A **government application profile** will be a specification that defines the following:

- required elements
- permitted Dublin Core elements
- permitted Dublin Core qualifiers
- permitted schemes and values (e.g. use of a specific controlled vocabulary or encoding scheme)
- government domain elements used from another namespace
- additional elements/qualifiers from other application profiles that may be used (e.g. DC-Education: Audience)
- refinement of standard definitions

This document proposes a possible application profile that clarifies the use of the Dublin Core Metadata Element Set in governments and government-related applications and projects.

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Position of the DC-Government Application Profile

- The DC-Government Application Profile (DC-GAP) defines how to describe metadata for governmental resources using the Dublin Core Metadata Element Set.
- DC-GAP should be used as a reference model when defining national or international application profiles.
- DC-GAP describes best practices. It is not intended to be a government standard.

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Namespaces

The DC-Government Application Profile uses terms from several namespaces:

- DCMI Metadata Terms http://dublincore.org/documents/dcmi-terms/
- Endorsed Government metadata standards (UK, Australia, Denmark, Canada(Ontario), Finland)
- The Usage Board has decided that any encoding scheme that has a URI defined in a non-DCMI namespace may be used. DCMI will not define these. Those so far considered for this application profile are indicated.

Format of entries:

This Application Profile is presented following the Dublin Core Application Profiles Guidelines produced by the CEN MMI-DC Workshop.

Name of Term	A unique token assigned to the term.
Term URI	A Uniform Resource Identifier used to identify the term.
Label	A human-readable label assigned to the term.
Defined By	An identifier of a namespace, pointer to a schema, or bibliographic reference for a document within which the term is defined.
Source Definition	The definition of the term in the namespace in which the term was orginated.
DC-Gov Definition	The DC-Gov definition of the term.
Source Comments	Comments on the term from the namespace in which the term orginated.
DC-Gov Comments	DC-Gov comments about the term.
Type of term	The grammatical category of the term (e.g. "Element", "Element Refinement", or "Encoding Scheme").
Refines	The described term semantically refines the referenced term. A refinement makes the meaning of the element narrower or more specific. It will share the meaning of the unrefined element but with a more restricted scope.
Refined By	The described term is semantically refined by the referenced term.
Encoding Scheme For	The described term, an encoding scheme, qualifies the referenced term. Using an encoding scheme will aid in the interpretation of an element value. These schemes include controlled vocabularies and formal notations or parsing rules. A value expressed using an encoding scheme will thus be a token selected from a controlled vocabulary (e.g., a term from a classification system or set of subject headings) or a string formatted in accordance with a formal notation (e.g., "2000-01-01" as the standard expression of a date). If an encoding scheme is not understood by a client or agent, the value may still be useful to a human reader.In some cases, encoding schemes not yet registered are indicated. These will be registered and/or approved by the DCMI Usage Board as DC Encoding Schemes in the future.

Has Encoding Scheme	The described term is qualified by the referenced encoding scheme.
Obligation	Indicates whether the element is required to always or sometimes be present. In this application profile the obligation can be: mandatory (M), mandatory if applicable (MA), strongly recommended (R) or optional (O). Mandatory ensures that some of the elements are always supported and mandatory if applicable means that this element must be supported if the information is available. An element with a mandatory obligation must have a value. The strongly recommended and the optional elements should be filled with a value if the information is appropriate to the given resource but if not, they may be omitted.
Occurence	Indicates any limit to the repeatability of the element.

General notes regarding all elements

- Either a Title or Identifier are mandatory (Identifier is mandatory if applicable).
- If the record is expressed in a format (e.g., HTML) that allows each element/qualifier/scheme value to be assigned a language attribute (e.g., the HTML tag lang="en"), the use of the attribute is permitted for any or all DC elements as desired.
- All elements may be used as unqualified. If using qualified Dublin Core, additional guidelines are given.
- Any encoding scheme that has a URI defined in a non-DCMI namespace may be used: DCMI will not define these. A mechanism to register these is awaited. Where applicable a table has been created for each encoding scheme in a separate section following the main body of tables for elements and refinements.

DC-GAP Elements

				DC	CA	DK	NL	NZ	UK	FI
Namespace	**Element**	**DC-GOV Recom.**	**# uses conform DC-GOV**	**DCTERMS**	**GO-ITS**	**?**	**OVERHEID**	**NZGLS**	**GOVTALK**	**JHS143**
DC	**title**	Rec	3	Y			Y		Y	
DCTERMS	**alternative**	Rec	3	Y			Y		Y	
DC	**creator**	issue	1	D			D		Y	
DC	**contributor**	Rec	3	Y			Y		Y	
DC	**publisher**	Rec	3	Y			Y		Y	
DC	**subject**	issue	2	Y			N		Y	
DC	**description**	Rec	3	Y			Y		Y	
DCTERMS	**abstract**	Rec	3	Y			Y		Y	
DCTERMS	**tableOfContents**	Rec	2	Y			N		Y	
DC	**date**	issue	2	Y			N		Y	
DCTERMS	**created**	Rec	2	Y			N		Y	
DCTERMS	**valid**	Rec	3	Y			Y		Y	
DCTERMS	**available**	Rec	3	Y			Y		Y	
DCTERMS	**issued**	Rec	3	Y			Y		Y	
DCTERMS	**modified**	Rec	3	Y			Y		Y	
DCTERMS	**dateCopyrighted**	issue	2	Y			N		Y	
LOCGOV	**dateCaptured**	issue	0	N			N		N	
DC	**type**	Rec	3	Y			Y		Y	
DC	**format**	Rec	3	Y			Y		Y	
DCTERMS	**extent**	Rec	2	Y			N		Y	
DCTERMS	**medium**	Rec	2	Y			N		Y	
DC	**identifier**	Rec	3	Y			Y		Y	
DCTERMS	**bibliographicCitation**	Rec	2	Y			N		Y	
DC	**source**	Rec	3	Y			Y		Y	
DC	**language**	Rec	3	Y			Y		Y	
DC	**relation**	issue	2	Y			N		Y	
DCTERMS	**isVersionOf**	Rec	2	Y			N		Y	

DCTERMS	**isFormatOf**	Rec	3	Y			Y		Y	
DCTERMS	**hasFormat**	Rec	2	Y			N		Y	
DCTERMS	**isReplacedBy**	Rec	2	Y			N		Y	
DCTERMS	**replaces**	Rec	2	Y			N		Y	
DCTERMS	**isPartOf**	Rec	3	Y			Y		Y	
DCTERMS	**hasPart**	Rec	3	Y			Y		Y	
DCTERMS	**requires**	Rec	2	Y			N		Y	
DCTERMS	**isReferencedBy**	Rec	2	Y			N		Y	
DCTERMS	**references**	Rec	2	Y			N		Y	
DC	**coverage**	Rec	2	Y			N		Y	
DCTERMS	**spatial**	Rec	3	Y			Y		Y	
DCTERMS	**temporal**	Rec	3	Y			Y		Y	
DC	**rights**	Rec	3	Y			Y		Y	
DCTERMS	**audience**	Rec	3	Y			Y		Y	
DCTERMS	**educationLevel**	Rec	2	Y			Y		Y	

Special DC Gov Elements

				DC	**CA**	**DK**	**NL**	**NZ**	**UK**	**FI**
Namespace	**Element**	**DC-GOV Recom.**	**# uses conform DC-GOV**	**DCTERMS**	**GO-ITS**	**?**	**OVERHEID**	**NZGLS**	**GOVTALK**	**JHS143**
GO-ITS	**version**	issue	1	N	Y		N		N	
GOVTALK	**location**	Prop	1	N			N		Y	
GO-ITS	**mandate**	Prop	2	N	Y		N		Y	
GO-ITS	**contact**	issue	1	N	Y		N		N	
NZGLS	**function**	Prop	1	N			N	Y	N	
JHS143	**status**	Prop	2	N			N		Y	Y
JHS143	**audittrail**	Prop	1	N			N		N	Y
OVERHEID	**organsationType**	Prop	1	N			Y		N	
OVERHEID	**isRatifiedBy**	Prop	1	N			Y		?	
OVERHEID	**accessibility**	Prop	1	N			Y		?	
OVERHEID	**category**	Prop	1	N			Y		N	
OVERHEID	**nextVersionDue**	Prop	1	N			Y		?	
OVERHEID	**updatingFrequency**	Prop	1	N			Y		?	
GOVTALK	**addressee**	Prop	1	N			N		Y	

Recommendation

Prop	Proposed - Candidate element, once suggested, possibly adapted by DC-Government
Rec	Recommended by DC-government
issue	issue - There is an issue on this element which needs discussion to decide on recommendation or deprication
Depr	Depricated - Element is not compliant with DC

Usage

Y	Yes
N	No
D	Different from DC-Government AP

Encoding Schemes

Box 2006-09-22 DCMIType DOI IMT ISBN ISO3166 ISO639-2 ISO8601 ISSN Period Point RFC3066 URI W3CDTF Page 105 of 183

Metadata Documents

Title:	e-Government Metadata Standard Version 3.1
Published Date:	29/8/2006
Version:	3.1
Description:	The e-Government Metadata Standard lists the elements and refinements that will be used by the public sector to create metadata for information resources. It also gives guidance on the purpose and use of each element. This is version 3.1.

This document can be downloaded in the following formats:

Title	Format	Filesize
e-Government Metadata Standard Version 3.1	pdf	446.74kB
e-Government Metadata Standard Version 3.1	doc	816.00kB

Schemas and Standards

- Gateway
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  - Guidance for Developers
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Treasury Board of Canada, Secretariat
Information Standards and Interoperability
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March 25, 2006

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Date published: 2006-05-11
Last updated: 2006-04-10
Date reviewed: 2006-04-10

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        - W3C : World Wide Web Consortium
      - Ressources anglophones diverses
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En Bref...

30 juin Des licences de logiciels libres de droit européen

23 juin Développement des archives ouvertes : au CNRS, incitation institutionnelle forte pour un dépôt de la production scientifique

17 février Rédaction collective d'un article pour DC 2006

31 janvier La vie d'artist en Janvier 2006

Décembre 2005 Installation du forum terminologique autour du thème Digital Libraries

Dans la rubrique

13/04/06 Les documents diffusés sur la liste DCMI-FR

11/04/06 Rédaction collective d'un article pour DC 2006 - version finale

23/02/06 Eléments de métadonnées du Dublin Core,

23/02/06 Liste de Diffusion DCMI-FR

15/02/06 DC 2006 - Appel aux communications

DCMI Dublin Core Metadata Initiative / DCMI-FR

Cette rubrique joue deux rôles :

1. Faire le point des activités du DCMI (Dublin Core Metadata Initiative),
2. Servir d'espace d'accueil pour les travaux et documents de la liste DCMI-FR

Les documents diffusés sur la liste DCMI-FR

Les derniers documents enregistrés.

Le 11 Avril 2006

- Profil d'application du Dublin Core pour la découverte des ressources Web au gouvernement du Canada

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Government of Canada Metadata Implementation Guide for Web Resources - 4th edition, October 2005

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4th edition, October 2005

Prepared by the Training Sub-group of the Government On-Line Metadata Working Group

1st edition entitled *Common Look and Feel Metadata Implementation Guides*, September 2002

2nd edition entitled *Government of Canada Metadata Implementation Guide for Web Resources*, May 2003

3rd edition entitled *Government of Canada Metadata Implementation Guide for Web Resources*, July 2004

This document is also available in alternate formats on request.

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Important Notices

OLAC Metadata

Date issued:	2006-04-05
Status of document:	*Standard.* This document describes a standard that is currently followed by OLAC archives and services.
This version:	http://www.language-archives.org/OLAC/metadata-20060405.html
Latest version:	http://www.language-archives.org/OLAC/metadata.html
Previous version:	http://www.language-archives.org/OLAC/metadata-20031208.html
Abstract:	This document defines the format used by the Open Language Archives Community [OLAC] for the interchange of metadata within the framework of the Open Archives Initiative [OAI]. The metadata set is based on the complete set of Dublin Core metadata terms [DCMT], but the format allows for the use of extensions to express community-specific qualifiers.
Editors:	Gary Simons, SIL International (mailto:gary_simons@sil.org) Steven Bird, University of Melbourne and University of Pennsylvania (mailto:sb@csse.unimelb.edu.au)
Changes since previous version:	Updated to support the current versions of Dublin Core schemas by pointing (in section 3 and references) to the latest DC versions at `dublincore.org` rather than to older copies stored on the OLAC site.

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1. Introduction
2. The metadata set
3. The metadata format
4. Using OLAC extensions
5. Defining a third-party extension
6. Documenting an extension

References

1. Introduction

This document defines the metadata format used by the Open Language Archives Community [OLAC] to describe language resources and to provide associated services. OLAC uses an XML format to interchange language-resource metadata within the framework of the Open Archives Initiative [OAI].

Section 2 of this document describes the set of metadata elements and qualifiers used in resource description. Section 3 goes on to describe the XML format used to represent metadata. Section 4 describes how OLAC extensions are used. Section 5 describes how a third-party extension is formally defined, while section 6 describes how an extension is documented.

2. The metadata set

The OLAC metadata set is based on the Dublin Core (DC) metadata set and uses all fifteen elements defined in that standard. (The rationale for following DC is discussed in the OLAC white paper [OLAC-WP].) To provide greater precision in resource description, OLAC follows the DC recommendation for qualifying elements by means of element refinements or encoding schemes. The authorative definition of all DC elements, refinements, and schemes is found in [DCMT].

The qualifiers recommended by DC are applicable across a wide range of resources. However, the language resource community has a number of resource description requirements that are not met by these general standards. In order to meet these needs, members of OLAC have developed community-specific qualifiers, and the community at large has adopted some of them (following [OLAC-Process]) as recommended best practice for language resource description. These recommended qualifiers are listed in [OLAC-Extensions] and the manner of using them in resource description is documented below in Using OLAC extensions.

3. The metadata format

The XML implementation of OLAC metadata follows the "Guidelines for implementing Dublin Core in XML" [DCXML]. The OLAC metadata schema is an application profile [HP2000] that incorporates the elements from the two metadata schemas (Simple DC and Qualified DC) developed by the DC Architecture Working Group for implementing qualified DC [DC-Schemas]. The OLAC metadata schema and the schemas for all OLAC extensions use the following Dublin Core schemas:

- Simple DC: http://dublincore.org/schemas/xmls/qdc/2006/01/06/dc.xsd
- Qualified DC: http://dublincore.org/schemas/xmls/qdc/2006/01/06/dcterms.xsd

The most recent version of the OLAC metadata schema (along with a sample record) can be found at:

- Schema: http://www.language-archives.org/OLAC/1.0/olac.xsd
- Example: http://www.language-archives.org/OLAC/1.0/olac.xml

The container for an OLAC metadata record is the element `<olac>`, which is defined in a namespace called "`http://www.language-archives.org/OLAC/1.0/`". In the sample record that follows, the namespace prefix `olac` is used, and the DC namespace is declared to be the default so that the metadata element tags need not be prefixed. For instance, the following is a valid OLAC metadata record:

```
<olac:olac xmlns:olac="http://www.language-archives.org/OLAC/1.0/"
   xmlns="http://purl.org/dc/elements/1.1/"
   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xsi:schemaLocation="http://www.language-archives.org/OLAC/1.0/
      http://www.language-archives.org/OLAC/1.0/olac.xsd">
   <creator>Bloomfield, Leonard</creator>
   <date>1933</date>
   <title>Language</title>
   <publisher>New York: Holt</publisher>
</olac:olac>
```

When OLAC metadata is stored in a static repository [OLAC-Repositories] then namespace declarations can be removed from the individual OLAC records and put on the root element. Accordingly, the above record can be simplified as follows:

```
<olac:olac xmlns="http://purl.org/dc/elements/1.1/">
   <creator>Bloomfield, Leonard</creator>
   <date>1933</date>
   <title>Language</title>
   <publisher>New York: Holt</publisher>
</olac:olac>
```

An example of an OLAC static repository is found at:

http://www.language-archives.org/OLAC/1.0/static-repository.xml

In addition to these core DC metadata elements, a record may use DC qualifiers following the guidelines given in [DCXML]. A qualified element may specify a refinement (using an element defined in the `dcterms` namespace) or an encoding scheme (using a scheme defined in `dcterms` as the value of the `xsi:type` attribute), or both. The `dcterms` namespace must be declared as follows: `xmlns:dcterms="http://purl.org/dc/terms/"`. For instance, the following element represents a creation date encoded in the W3C date and time format:

```
<dcterms:created xsi:type="dcterms:W3C-DTF">2002-11-28</dcterms:created>
```

The `xsi:type` attribute is a directive that is built into the XML Schema standard [XMLS]. It functions to override the definition of the current element by the type definition named in its value. In this example, `dcterms:W3C-DTF` resolves to the definition for a complex type named W3C-DTF in the XML schema that defines the `dcterms` namespace.

Any element may also use the `xml:lang` attribute to indicate the language of the element content. For instance, the following represents a title in the Lau language of Solomon Islands and its translation into English:

```
<title xml:lang="x-sil-LLU">Na tala 'uria na idulaa diana</title>
<dcterms:alternative xml:lang="en">The path to good reading</dcterms:
alternative>
```

Values of the `xml:lang` attribute are controlled by the Internet Engineering Task Force standard, "Tags for the Identification of Languages" [RFC1766]. That standard includes approximately 140 two-letter codes from the ISO standard for language identification [ISO639]. It also reserves the prefix `x-` for specifying user-defined language codes. In order to provide codes for all known languages, OLAC uses this mechanism to define codes for more than 7,000 languages, both living and extinct. See [OLAC-Language] for the complete definition of the language codes used by OLAC. By using multiple instances of the metadata elements tagged for different languages, data providers may offer a metadata record in multiple languages.

4. Using OLAC extensions

The `xsi:type` mechanism has access to the full power of XML Schema, and may be used for a variety of purposes other than narrowing the meaning of the element, or restricting element content (as done for DC qualifiers). It may do both simultaneously, and it may also define additional attributes, which may in turn be restricted by patterns or enumerations.

OLAC extensions use a convention of defining an `olac:code` attribute to hold restricted element values. This leaves the element content to be used for an unrestricted comment. When code and content are used together, the content provides an escape hatch for expressing a more precise resource description than is possible with the restricted code value alone. The `olac:code` attribute is also defined to be optional, which provides a migration path for adding precision to legacy data that is not originally qualified. For instance, the following are three steps in the migration of describing a resource about the Dschang language of

Cameroon:

```
1. <subject>Dschang</subject>
2. <subject xsi:type="olac:language">Dschang</subject>
3. <subject xsi:type="olac:language" olac:code="x-sil-BAN"/>
```

All metadata extensions that have been adopted by OLAC as recommended best practice are defined in the `olac` namespace schema. See [OLAC-Extensions] for the complete list of the recommended extensions and links to their full documentation.

Some OLAC extensions use vocabularies defined in OLAC recommendations, while others (e.g. the language codes) use externally-defined vocabularies that are not controlled by OLAC and are not subject to the OLAC process. In such cases, the document describing the OLAC extension does not define the vocabulary, but simply refers to the external definition.

Once an extension has been adopted as an OLAC recommendation, subsequent changes must be carefully controlled. Redefining a code value to mean something different would cause problems for all existing metadata records that employ the existing code value. To widen the meaning of a code is safe since the code would still be correct in all existing uses. However, when the interpretation of a code is narrowed or shifted, there will be existing uses of the code that are no longer valid. Thus, the existing code should be retired and a new code adopted to replace it. (If it is not possible to meet this requirement, then the old version of the vocabulary must retain its adopted status while the new version is assigned candidate status for a period of review and testing.)

5. Defining a third-party extension

An OLAC metadata record may use extensions from other namespaces. This makes it possible for subcommunities within OLAC to develop and share metadata extensions that are specific to a common special interest. By using `xsi:type`, it is possible to extend the OLAC application profile without modifying the OLAC schema.

For instance, suppose that a given subcommunity required greater precision in identifying the roles of contributors than is possible with the OLAC Role vocabulary [OLAC-Role], and thus defined a specialized vocabulary that included (among others) the term `commentator`. This specialized vocabulary and code value could be represented as follows in a metadata element:

```
<contributor xsi:type="example:role" example:code="commentator">Sampson,
Geoffrey</contributor>
```

In order to do this, an organization representing that subcommunity (say, example.org) would define a new XML schema as follows:

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema  xmlns:xs="http://www.w3.org/2001/XMLSchema"
            xmlns:dc="http://purl.org/dc/elements/1.1/"
            xmlns="http://www.example.org/"
            targetNamespace="http://www.example.org/"
            elementFormDefault="qualified"
            attributeFormDefault="qualified">

  <xs:import namespace="http://purl.org/dc/elements/1.1/"
    schemaLocation="http://www.language-archives.org/OLAC/1.0/dc.xsd"/>

  <xs:annotation>
    <xs:appinfo>
```

```
      <olac-extension xmlns="http://www.language-archives.org/OLAC/1.0/olac-
extension.xsd">
        <shortName>role</shortName>
        <longName>Code for My Specialized Roles</longName>
        <versionDate>2002-08-16</versionDate>
        <description>A hypothetical extension for an individual archive,
defining
          specialized roles not available in the OLAC Role vocabulary.</
description>
        <appliesTo>creator</appliesTo>
        <appliesTo>contributor</appliesTo>
        <documentation>http://www.example.org/roles.html</documentation>
      </olac-extension>
    </xs:appinfo>
  </xs:annotation>

  <!-- Type for third party role refinement -->
  <xs:complexType name="role">
    <xs:complexContent mixed="true">
      <xs:extension base="dc:SimpleLiteral">
        <xs:attribute name="code" type="role-vocab" use="required"/>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>

  <!-- Third party role vocabulary -->
  <xs:simpleType name="role-vocab">
    <xs:restriction base="xs:string">
      <xs:enumeration value="calligrapher"/>
      <xs:enumeration value="censor"/>
      <xs:enumeration value="commentator"/>
      <xs:enumeration value="corrector"/>
    </xs:restriction>
  </xs:simpleType>

</xs:schema>
```

This schema contains four top-level elements: (1) a directive to import the schema for DC elements (which is needed since the complexType extends a type defined in that schema); (2) an annotation providing summary documentation for the extension; (3) a complexType declaration for the overriding element definition which defines a `namespace:code` attribute with values taken from the specialized vocabulary; and (4) a simpleType declaration which defines the vocabulary itself. Refer to the XML Schema specification [XMLS] and primer [XMLSP] for documentation on how to define types in XML.

The extension schema is associated with a target namespace (namely, `http://www.example.org/`) and stored in a specific location on the developer's web site (e.g., `http://www.example.org/example.xsd`). Now an OLAC metadata record using the desired metadata element can be created as follows:

```
<?xml version="1.0" encoding="UTF-8"?>
<olac:olac xmlns="http://purl.org/dc/elements/1.1/"
           xmlns:dcterms="http://purl.org/dc/terms/"
           xmlns:olac="http://www.language-archives.org/OLAC/1.0/"
           xmlns:example="http://www.example.org/"
           xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
           xsi:schemaLocation="http://www.example.org/
               http://www.example.org/example.xsd
```

```
                http://www.language-archives.org/OLAC/1.0/
                  http://www.language-archives.org/OLAC/1.0/olac.xsd">

  <!-- Third party extension -->

    <contributor xsi:type="example:role" example:code="commentator">Sampson,
  Geoffrey</contributor>

    <!-- standard OLAC metadata elements ... -->

  </olac:olac>
```

Developers of third-party extensions should note that standard OLAC service providers harvest five things from each metadata element: the tag name, the element content, the value of the `xml:lang` attribute, the value of the `xsi:type` attribute, and the value of the `olac:code` attribute. Third-party extensions may define attributes to hold coded values (e.g. `example:code`), to be exploited by specialized subcommunity service providers. However, a third-party extension cannot use the `olac:code` attribute, and any new attributes defined by a third-party extension are not validated or used standard OLAC services.

In order to be listed on the OLAC website [OLAC-Third-Party], a third-party extension must be germane to the mission of OLAC, and it must represent a new perspective on resource description. The latter condition prevents extensions which simply rename all the terms in an existing vocabulary, or which copy an existing vocabulary with minor modifications or additions. Note that, when the purpose of a third-party extension is to augment an existing OLAC extension by adding more vocabulary items, the third-party extension must only provide the new terms, to avoid proliferating copies of OLAC terms.

6. Documenting an extension

Each extension should be accompanied with human-readable documentation that provides the semantics for the vocabulary. Additionally, the schema defining an extension should provide summary documentation as shown below.

This documentation should be placed after the `import` statement(s) and before the type declarations; see the example above in Defining a third-party extension. The `<olac-extension>` element should be embedded in `<xs:appinfo>` within `<xs:annotation>`). The `<olac-extension>` element is defined in:

> http://www.language-archives.org/OLAC/1.0/olac-extension.xsd

The summary documentation includes six mandatory elements:

shortName

> The short name by which the extension is accessed. This name includes a namespace prefix and should be the same as the name of the `<complexType>` that defines the extension.

longName

> The full name of the extension for use as a title in documentation.

versionDate

> The date of the latest version of the extension. The date should be modified only when the extension definition changes in such a way as to alter the set of element instances that would be accepted as valid. The version date should not be modified when only

documentation has changed. Use the W3C date format, e.g. 2002-11-30 (for 30 November 2002).

description

A summary description of what the extension is used for.

appliesTo

The content names a Dublin Core element with which the extension may be used. This element is repeated if the extension applies to more than one element.

documentation

The URI for a complete document that defines and exemplifies the extension. If the extension involves a controlled vocabulary, the document should also enumerate and define the terms of the vocabulary.

The information contained in the summary documentation is extracted for display on the OLAC website in [OLAC-Extensions] or [OLAC-Third-Party].

References

[DCMT]	DCMI Metadata Terms. <http://dublincore.org/documents/dcmi-terms/>
[DC-Schemas]	XML schemas to support the "Guidelines for implementing DC in XML" recommendation. <http://dublincore.org/schemas/xmls/>
[DCXML]	Guidelines for implementing Dublin Core in XML. <http://dublincore.org/documents/2003/04/02/dc-xml-guidelines/>
[HP2000]	Heery, Rachel and Manjula Patel, 2000. Application profiles: mixing and matching metadata schemas. Ariadne, Issue 25. <http://www.ariadne.ac.uk/issue25/app-profiles/>
[ISO639]	Codes for the Representation of Names of Languages. <http://lcweb.loc.gov/standards/iso639-2/langhome.html>
[OAI]	Open Archives Initiative. <http://www.openarchives.org/>
[OLAC]	Open Language Archives Community. <http://www.language-archives.org/>
[OLAC-Extensions]	Recommended metadata extensions. <http://www.language-archives.org/REC/olac-extensions.html>
[OLAC-Language]	OLAC Language Vocabulary. <http://www.language-archives.org/REC/language.html>
[OLAC-Process]	OLAC Process. <http://www.language-archives.org/OLAC/process.html>
[OLAC-Repositories]	OLAC Repositories. <http://www.language-archives.org/OLAC/repositories.html>
[OLAC-Role]	OLAC Role Vocabulary. <http://www.language-archives.org/REC/role.html>
[OLAC-Third-Party]	Third Party Extensions. <http://www.language-archives.org/NOTE/third-party-extensions.html>
[OLAC-WP]	White Paper on Establishing an Infrastructure for Open Language Archiving <http://www.language-archives.org/docs/white-paper.html>

[RFC1766] Tags for the Identification of Languages.
<http://www.ietf.org/rfc/rfc1766.txt>

[XMLS] XML Schema, Part 1: Structures.
<http://www.w3.org/TR/xmlschema-1/>

[XMLSP] XML Schema, Part 0: Primer.
<http://www.w3.org/TR/xmlschema-0/>

Title	Mathematical Literature Application Profile
Contributor	David Ruddy, Cornell University Library et al.
Date Issued	
Identifier	URI for this document - to be assigned
Document Status	draft--last modified 2005-04-13
Description	The beginnings of a possible application profile that defines the use of Dublin Core terms for sharing metadata describing mathematical literature available on-line. It is principally intended to define qualified Dublin Core elements for use in OAI metadata harvesting.

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1. Namespaces and Format of Entries

The Mathematical Literature Application Profile uses terms from the following namespaces:

- DCMI Metadata Terms: http://dublincore.org/documents/dcmi-terms/
- others

Format of Entries

Name of Term	**A unique token assigned to the term**
Term URI	A Uniform Resource Identifier used to identify the term.
Label	A human-readable label assigned to the term.
Defined By	An identifier of a namespace, pointer to a schema, or bibliographic reference for a document within which the term is defined.
Source Definition	The definition of the term in the namespace in which the term was orginated.
Local Definition	The definition of the terms when the term orginates locally. (remove this if no locally defined terms.)
Source Comments	Additional information about the term and its application, from the namespace in which the term orginated.
Local Comments	Additional information about terms defined locally. (remove this if no locally defined terms, or change to Constraints, if we want local constraints on externally defined terms.)
Type Of Term	The grammatical category of the term (e.g. "Element", "Element Refinement", or "Encoding Scheme").
Refines	The described term semantically refines the referenced term. A refinement makes the meaning of the element narrower or more specific. It will share the meaning of the unrefined element but with a more restricted scope.
Refined By	The described term is semantically refined by the referenced term.
Encoding Scheme For	The described term, an encoding scheme, qualifies the referenced term. Using an encoding scheme will aid in the interpretation of an element value. These schemes include controlled vocabularies and formal notations or parsing rules. A value expressed using an encoding scheme will thus be a token selected from a controlled vocabulary (e.g., a term from a classification system or set of subject headings) or a string formatted in accordance with a formal notation (e.g., "2000-01-01" as the standard expression of a date). If an encoding scheme is not understood by a client or agent, the value may still be useful to a human reader. (taken from DC-Lib. Modify)
Has Encoding Scheme	The described term is qualified by the referenced encoding scheme.
Obligation	Indicates whether the element is required to always or sometimes be present. In this application profile the obligation can be: mandatory (M), mandatory if applicable (MA), strongly recommended (R) or optional (O). Mandatory ensures that some of the elements are always supported and mandatory if applicable means that this element must be supported if the information is available. An element with a mandatory obligation must have a value. The strongly recommended and the optional elements should be filled with a value if the information is appropriate to the given resource but if not, they may be omitted. (taken from DC-Lib. Modify)
Occurence	Indicates any limit to the repeatability of the element.
Notes	A temporary attribute, for development purposes.

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2. Terms

Elements and element refinements

Name of Term	**title**
Term URI	http://purl.org/dc/elements/1.1/title
Label	Title
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	A name given to the resource.
Local Definition	--
Source Comments	Typically, a title will be a name by which the resource is formally known.
Local Comments	
Type Of Term	Element
Refines	
Refined By	alternative

Has Encoding Scheme	
Obligation	M
Occurence	
Notes	To be defined: Translations: are these parallel titles, and thus a "main" title (repeating Title element? Transliterations: are these parallel titles, and thus a "main" title (repeating Title element? The relevance or irrelevance of order of multiple Titles. The relationship to an Alternative title Best practice for encoding mathematical expressions.

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Name of Term	**alternative**
Term URI	http://purl.org/dc/terms/alternative
Label	Alternative
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	Any form of the title used as a substitute or alternative to the formal title of the resource.
Local Definition	--
Source Comments	This qualifier can include Title abbreviations as well as translations.
Local Comments	
Type Of Term	Element Refinement
Refines	title
Refined By	
Has Encoding Scheme	
Obligation	R
Occurence	
Notes	See notes under Title.

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Name of Term	**creator**
Term URI	http://purl.org/dc/elements/1.1/creator
Label	Creator
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	An entity primarily responsible for making the content of the resource.
Local Definition	--
Source Comments	Examples of a Creator include a person, an organisation, or a service. Typically, the name of a Creator should be used to indicate the entity.
Local Comments	If Creator is used within this profile as a refinement of Contributor, note that here.
Type Of Term	Element
Refines	
Refined By	
Has Encoding Scheme	
Obligation	MA? or O (if a refinement)?
Occurence	
Notes	To be decided: Encourage (how strongly?) use of Contributor, along with MARC relator terms? This could essentially conflate Creator and Contributor, with Creator as a refinement of Contributor. Best practice for formatting names (inverted?, non-inverted?, etc.)?

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Name of Term	contributor
Term URI	http://purl.org/dc/elements/1.1/contributor
Label	Contributor
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	An entity responsible for making contributions to the content of the resource.
Local Definition	--
Source Comments	Examples of a Contributor include a person, an organisation, or a service. Typically, the name of a Contributor should be used to indicate the entity.
Local Comments	
Type Of Term	Element
Refines	
Refined By	
Has Encoding Scheme	Role refinements from Library of Congress list of Relators?
Obligation	O? or MA (if conflated with Creator)?
Occurence	
Notes	See notes under Creator.

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Name of Term	publisher
Term URI	http://purl.org/dc/elements/1.1/publisher
Label	Publisher
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	An entity responsible for making the resource available.
Local Definition	--
Source Comments	Examples of a Publisher include a person, an organisation, or a service. Typically, the name of a Publisher should be used to indicate the entity.
Local Comments	
Type Of Term	Element
Refines	
Refined By	
Has Encoding Scheme	
Obligation	O (or MA?)
Notes	Use of LOC Relator terms?

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Name of Term	subject
Term URI	http://purl.org/dc/elements/1.1/subject
Label	Subject
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	The topic of the content of the resource.
Local Definition	--
Source Comments	Typically, a Subject will be expressed as keywords, key phrases or classification codes that describe a topic of the resource. Recommended best practice is to select a value from a controlled vocabulary or formal classification scheme.
Local Comments	
Type Of Term	Element
Refines	
Refined By	
Has Encoding Scheme	MSC
Obligation	MA (or R?)
Occurence	
Notes	Need to sort out issues of MSC namespace. Need to define use of unqualified element (i.e., non-MSC terms).

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Name of Term	description
Term URI	http://purl.org/dc/elements/1.1/description
Label	Description
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	An account of the content of the resource.
Local Definition	--
Source Comments	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.
Local Comments	
Type Of Term	Element
Refines	
Refined By	abstract
Has Encoding Scheme	DC-Lib allows a URI qualifier, to point to remote description. Should we support this?
Obligation	R
Occurence	
Notes	Should use of this element and Abstract be made explicit? Needs best practice guidelines for encoding mathematical expressions.

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Name of Term	abstract
Term URI	http://purl.org/dc/terms/abstract
Label	Abstract
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	An account of the content of the resource.
Local Definition	--
Source Comments	
Local Comments	

Type Of Term	Element Refinement
Refines	description
Refined By	
Has Encoding Scheme	
Obligation	R
Occurence	
Notes	See note under Description. This needs guidelines for encoding of mathematical expressions.

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Name of Term	**date**
Term URI	http://purl.org/dc/elements/1.1/date
Label	Date
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	A date associated with an event in the life cycle of the resource.
Local Definition	--
Source Comments	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.
Local Comments	
Type Of Term	Element
Refines	
Refined By	issued
Has Encoding Scheme	ISO8601(without hyphens) - http://purl.org/dc/terms/ISO8601 W3CDTF (with hyphens) - http://purl.org/dc/terms/W3CDTF
Obligation	O
Occurence	
Notes	Questions: What's the use of Date mean, in this profile? Should it be discouraged (or even allowed) in favor of a refined date? Is 8601 necessary? I.e., is it possible to go with W3CDTF only? [do we need to support interval dates?] I've not included these Date refinements, from DC-Lib: created, valid, available, modified, dateCopyrighted, dateSubmitted, dateAccepted, dateCaptured

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Name of Term	issued
Term URI	http://purl.org/dc/terms/issued
Label	Issued
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	Date of formal issurance (e.g. publication) of the resource.
Local Definition	--
Source Comments	
Local Comments	
Type Of Term	Element Refinement
Refines	date
Refined By	
Has Encoding Scheme	ISO8601(without hyphens) - http://purl.org/dc/terms/ISO8601 W3CDTF (with hyphens) - http://purl.org/dc/terms/W3CDTF
Obligation	MA
Occurence	
Notes	See notes under Date. To be defined: Is "publication" date problematic for us? Use of unqualified Issued? Assumed to be presentation format ("April 2003")?

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Name of Term	type
Term URI	http://purl.org/dc/elements/1.1/type
Label	Resource Type
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	The nature or genre of the content of the resource.
Local Definition	--
Source Comments	Type includes terms describing general categories, functions, genres, or aggregation levels for content. Recommended best practice is to select a value from a controlled vocabulary (for example, the list of DCMI Types). To describe the physical or digital manifestation of the resource, use the Format element.
Local Comments	
Type Of Term	Element
Refines	
Refined By	
Has Encoding Scheme	DCMIType - http://purl.org/dc/dcmitype/
Obligation	O
Occurence	Type may be repeated for each encoding scheme used.
Notes	Do we want our own Type vocabulary, to indicate something like article/monograph/etc.? Should this have an obligation of MA?

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Name of Term	format
Term URI	http://purl.org/dc/elements/1.1/format
Label	Format
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	The physical or digital manifestation of the resource.
Local Definition	--

Source Comments	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).
Local Comments	
Type Of Term	Element
Refines	
Refined By	extent
Has Encoding Scheme	IMT - http://purl.org/dc/terms/IMT
Obligation	R
Occurence	
Notes	I've not included the DC-Lib refinement medium. Extent is a question also (see below).

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Name of Term	**extent**
Term URI	http://purl.org/dc/terms/extent
Label	Extent
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	The size or duration of the resource.
Local Definition	--
Source Comments	
Local Comments	If restricted to page range or page total, note that here.
Type Of Term	Element Refinement
Refines	format
Refined By	
Has Encoding Scheme	
Obligation	O
Occurence	
Notes	This element seems potentially useful, if restricted to page count. Is this valuable to have, separate from what might be available in bibliographicCitation? Should restrictions be placed on its use?

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Name of Term	**identifier**
Term URI	http://purl.org/dc/elements/1.1/identifier
Label	Identifier
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	An unambiguous reference to the resource within a given context.
Local Definition	--
Source Comments	Recommended best practice is to identify the resource by means of a string or number conforming to a formal identification system. Example of formal identification systems include the Uniform Resource Identifier (URI) (including the Uniform Resource Locator (URL)), the Digital Object Identifier (DOI) and the International Standard Book Number (ISBN).
Local Comments	
Type Of Term	Element
Refines	
Refined By	bibliographicCitation

Has Encoding Scheme	URI - http://purl.org/dc/terms/URI DOI (Digital Object Identifier) ISBN (International Standard Book Number) ISSN (International Standard Serial Number) SICI (Serial Item and Contribution Identifier)
Obligation	MA
Occurence	
Notes	

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Name of Term	**bibliographicCitation**
Term URI	http://purl.org/dc/terms/bibliographicCitation
Label	Bibliographic Citation
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	A bibliographic reference for the resource.
Local Definition	--
Source Comments	Recommended practice is to include sufficient bibliographic detail to identify the resource as unambiguously as possible, whether or not the citation is in a standard form.
Local Comments	See "Guidelines for encoding bibliographic citations in Dublin Core metadata," at http://epub.mimas.ac.uk/DC/dc-citation-guidelines/
Type Of Term	Element Refinement
Refines	identifier
Refined By	Some method of rendering machine readable citations?
Has Encoding Scheme	
Obligation	MA
Occurence	
Notes	DC-Lib has optional; I'm thinking this should be MA for articles. Potentially, this could be refined by an element containing the OpenURL elements, encoded as a URI, or separate elements.

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Name of Term	**language**
Term URI	http://purl.org/dc/elements/1.1/language
Label	Language
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	A language of the intellectual content of the resource.
Local Definition	--
Source Comments	Recommended best practice is to use RFC 3066 [RFC3066], which, in conjunction with ISO 639 [ISO639], defines two- and three-letter primary language tags with optional subtags. Examples include "en" or "eng" for English, "akk" for Akkadian, and "en-GB" for English used in the United Kingdom.
Local Comments	
Type Of Term	Element
Refines	
Refined By	
Has Encoding Scheme	ISO639-2 - http://purl.org/dc/terms/ISO639-2 RFC3066?
Obligation	
Occurence	

Notes	I think DC-Lib is dicouraging use of two-letter codes, from ISO 639-1, in favor of three-letter codes of ISO 639-2. How important is it to follow this practice? Do we also accept DC-Lib's allowance of RFC 3066?

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Name of Term	**relation**
Term URI	http://purl.org/dc/elements/1.1/relation
Label	Relation
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	A reference to a related resource.
Local Definition	--
Source Comments	Recommended best practice is to reference the resource by means of a string or number conforming to a formal identification system.
Local Comments	
Type Of Term	Element
Refines	
Refined By	isPartOf, hasPart, isReferencedBy, references
Has Encoding Scheme	URI - http://purl.org/dc/terms/URI DOI (Digital Object Identifier) ISBN (International Standard Book Number) ISSN (International Standard Serial Number) SICI (Serial Item and Contribution Identifier)
Obligation	O
Occurence	
Notes	Which refinements to include? isPartOf and hasPart will be needed if this AP includes monographic literature.

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Name of Term	**isPartOf**
Term URI	http://purl.org/dc/terms/isPartOf
Label	Is Part Of
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	The described resource is a physical or logical part of the referenced resource.
Local Definition	--
Source Comments	
Local Comments	
Type Of Term	Element Refinement
Refines	relation
Refined By	
Has Encoding Scheme	URI - http://purl.org/dc/terms/URI DOI (Digital Object Identifier) ISBN (International Standard Book Number) ISSN (International Standard Serial Number) SICI (Serial Item and Contribution Identifier)
Obligation	R
Occurence	
Notes	

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Name of Term	hasPart
Term URI	http://purl.org/dc/terms/hasPart
Label	Has Part
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	The described resource includes the referenced resource either physically or logically.
Local Definition	--
Source Comments	
Local Comments	
Type Of Term	Element Refinement
Refines	relation
Refined By	
Has Encoding Scheme	URI - http://purl.org/dc/terms/URI DOI (Digital Object Identifier) ISBN (International Standard Book Number) ISSN (International Standard Serial Number) SICI (Serial Item and Contribution Identifier)
Obligation	O
Occurence	
Notes	

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Name of Term	isReferencedBy
Term URI	http://purl.org/dc/terms/isReferencedBy
Label	Is Referenced By
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	The described resource is referenced, cited, or otherwise pointed to by the referenced resource.
Local Definition	--
Source Comments	
Local Comments	
Type Of Term	Element Refinement
Refines	relation
Refined By	
Has Encoding Scheme	URI - http://purl.org/dc/terms/URI DOI (Digital Object Identifier) ISBN (International Standard Book Number) ISSN (International Standard Serial Number) SICI (Serial Item and Contribution Identifier) MR (Mathematical Reviews Number) - needs to be registered ZBL (Zentralblatt MATH Number) - needs to be registered
Obligation	O
Occurence	
Notes	I believe this is how we would reference MR and ZBL reviews.

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Name of Term	references
Term URI	http://purl.org/dc/terms/references
Label	References
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	The described resource references, cites, or otherwise points to the referenced resource.

Local Definition	--
Source Comments	
Local Comments	
Type Of Term	Element Refinement
Refines	relation
Refined By	
Has Encoding Scheme	URI - http://purl.org/dc/terms/URI DOI (Digital Object Identifier) ISBN (International Standard Book Number) ISSN (International Standard Serial Number) SICI (Serial Item and Contribution Identifier)
Obligation	O
Occurence	
Notes	Do we really want this? DC-Lib says it is not appropriate to use this to include entire reference section of a work.

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Name of Term	**rights**
Term URI	http://purl.org/dc/elements/1.1/rights
Label	Rights
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	Information about rights held in and over the resource.
Local Definition	--
Source Comments	Typically, a Rights element will contain a rights management statement for the resource, or reference a service providing such information. Rights information often encompasses Intellectual Property Rights (IPR), Copyright, and various Property Rights. If the Rights element is absent, no assumptions can be made about the status of these and other rights with respect to the resource.
Local Comments	
Type Of Term	Element
Refines	
Refined By	
Has Encoding Scheme	URI - http://purl.org/dc/terms/URI
Obligation	R
Occurence	
Notes	

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Encoding Schemes

Name of Term	DCMIType
Term URI	http://purl.org/dc/dcmitype/
Label	DCMI Type Vocabulary
Defined By	http://purl.org/dc/terms/
Definition	A list of types used to categorize the nature or genre of the content of the resource.
Comments	
See Also	http://dublincore.org/documents/dcmi-type-vocabulary/
Type Of Term	Encoding Scheme
Encoding Scheme For	type
Notes	

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Name of Term	DOI
Term URI	URI will be provided when available
Label	DOI
Defined By	
Definition	Digital Object Identifier
Comments	
See Also	http://www.doi.org/
Type Of Term	Encoding Scheme
Encoding Scheme For	identifier, relation, isPartOf, hasPart, isReferencedBy, references
Notes	

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Name of Term	IMT
Term URI	http://purl.org/dc/terms/IMT
Label	IMT
Defined By	http://purl.org/dc/terms/
Definition	The Internet media type of the resource.
Comments	
See Also	http://www.isi.edu/in-notes/iana/assignments/media-types/media-types
Type Of Term	Encoding Scheme
Encoding Scheme For	format
Notes	

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Name of Term	ISBN
Term URI	URI will be provided when available
Label	ISBN
Defined By	
Definition	International Standard Book Number
Comments	
See Also	http://www.isbn.org/standards/home/isbn/international/index.asp
Type Of Term	Encoding Scheme
Encoding Scheme For	identifier, relation, isPartOf, hasPart, isReferencedBy, references
Notes	

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Name of Term	ISO639-2
Term URI	http://purl.org/dc/terms/ISO639-2
Label	ISO 639-2
Defined By	http://purl.org/dc/terms/
Definition	ISO 639-2: Codes for the representation of names of languages
Comments	
See Also	http://www.loc.gov/standards/iso639-2/
Type Of Term	Encoding Scheme
Encoding Scheme For	language
Notes	With RFC3066, we perhaps don't need this. Is 639-2 subsumed within RFC3066?

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Name of Term	ISO8601
Term URI	http://purl.org/dc/terms/ISO8601
Label	ISO 8601
Defined By	http://purl.org/dc/terms/
Definition	
Comments	
See Also	
Type Of Term	Encoding Scheme
Encoding Scheme For	date, issued
Notes	use this, or W3CDTF, or both? Seems like we'll need both.

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Name of Term	ISSN
Term URI	URI will be provided when available
Label	ISSN
Defined By	
Definition	International Standard Serial Number
Comments	
See Also	http://www.issn.org:8080/pub/
Type Of Term	Encoding Scheme
Encoding Scheme For	identifier, relation, isPartOf, hasPart, isReferencedBy, references
Notes	

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Name of Term	MR
Term URI	URI will be provided when available
Label	MR
Defined By	?
Definition	Mathematical Reviews Number
Comments	
See Also	
Type Of Term	Encoding Scheme
Encoding Scheme For	relation?, isReferencedBy
Notes	this should be registered (how?) as an encoding scheme

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Name of Term	MSC
Term URI	URI will be provided when available
Label	MSC
Defined By	?
Definition	Mathematical Subject Classification Code
Comments	
See Also	
Type Of Term	Encoding Scheme
Encoding Scheme For	subject
Notes	this should be registered (how?) as an encoding scheme

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Name of Term	RFC3066
Term URI	http://purl.org/dc/terms/RFC3066
Label	RFC 3066
Defined By	http://purl.org/dc/terms/
Definition	Internet RFC 3066 'Tags for the Identification of Languages' specifies a primary subtag which is a two-letter code taken from ISO 639 part 1 or a three-letter code taken from ISO 639 part 2, followed optionally by a two-letter country code taken from ISO 3166. When a language in ISO 639 has both a two-letter and three-letter code, use the two-letter code; when it has only a three-letter code, use the three-letter code. This RFC replaces RFC 1766.
Comments	

See Also	http://www.ietf.org/rfc/rfc3066.txt
Type Of Term	Encoding Scheme
Encoding Scheme For	language
Notes	

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Name of Term	**SICI**
Term URI	URI will be provided when available
Label	SICI
Defined By	
Definition	Serial Item and Contributor Identifier
Comments	
See Also	http://sunsite.berkeley.edu/SICI/
Type Of Term	Encoding Scheme
Encoding Scheme For	identifier, relation, isPartOf, hasPart, isReferencedBy, references
Notes	

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Name of Term	**URI**
Term URI	http://purl.org/dc/terms/URI
Label	URI
Defined By	http://purl.org/dc/terms/
Definition	A URI uniform resource identifier.
Comments	
See Also	http://www.itef.org/rfc/rfc2396.txt
Type Of Term	Encoding Scheme
Encoding Scheme For	description?, abstract?, identifier, source?, relation, isPartOf, hasPart, isReferencedBy, references
Notes	

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Name of Term	**W3CDTF**
Term URI	http://purl.org/dc/terms/W3CDTF
Label	W3C-DTF
Defined By	http://purl.org/dc/terms/
Definition	W3C encoding rules for dates and times - a profile based on ISO 8601.
Comments	
See Also	http://www.w3c.org/TR/NOTE-datetime
Type Of Term	Encoding Scheme
Encoding Scheme For	xdate, issued
Notes	

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Name of Term	**ZBL**
Term URI	URI will be provided when available

Label	ZBL
Defined By	?
Definition	Zentralblatt MATH Number
Comments	
See Also	
Type Of Term	Encoding Scheme
Encoding Scheme For	relation?, isReferencedBy
Notes	this should be registered (how?) as an encoding scheme

Back to TOC

3. General notes and questions

1. Elements from DC simple and DC-Lib not included here:

- tableOfContents
- most of the date refinemenents
- medium
- many of the relation refinements
- coverage, spatial, temporal
- source
- audience
- edition (can be covered by bibliographicCitation?)
- location

2. How to include the bibliographicCitation in a machine processible format?
There appear to be a few possible approaches:

- Define an element set that works for us, such as in minidml.
- Use the Key/Encoded-Value format for the ContextObject defined by the OpenURL community.
  The emerging standard "OpenURL Framework for Context-Sensitive Services" (ANSI/NISO Z39.88-2004) defines a "ContextObject," the main use of which is to carry data about a referenced resource within an OpenURL, but it can exist as a data object on its own. In this context, it could be used to provide a machine readible form of the DC term bibliographicCitation.
  The ContextObject may contain different "entities." The "referent" entity contains data about the referenced resource and is required in a ContextObject. It contains data elements like journal title (or ISSN), volume number, issue number, start page.
  One way of encoding the ContextObject is via the KEV (Key/Encoded-Value) format. This is a key/value string with URL-encoding. It can easily be made into a URI, and thus could be included as a DC bibliographicCitation with type URI. An example would look like this:

- Use an XML encoding or the elements within the ContextObject, defined by the OpenURL community.
  I have not seen a published recommendation for encoding the ContextObject in XML, although one may exist. This is worth looking into further, since it's exactly what we need here. There would be obvious syntactic issues here--principally whether we build in hierarchy, or stick with the flat structure (see DC-Architecture recommendations).

3. How to indicate what minidml calls the "provider"--the service providing access to the described resource--such as NUMDAM, Project Euclid, etc.:

- Use MODS location element? I think this abuses the definition of the element.
- Use a data element from the ContextObject (see above). Besides the "referent" entity, the ContextObject may contain an entity called the "referrer," defined as the service that generated the ContextObject. Could be used to identify the service that is providing access to the referenced resource. I'm guessing this is not the way to go.
  Rely on the OAI about page: Identify request. This has the data element. The problem is that there is some argument for getting this element to the record level. We could say this is the responsibility of the harvester, leaving it up to them.

4. Regarding encoding schemes for identifiers and isReferencedBy, We need a better understanding of

the difference between encoding these as a URI (type="dct:URI") versus indicating the particular identifier type in the type attribute (type="xxx:DOI"). As I understand it, with the later, the encoding scheme needs it's own declared namespace, which may be a substantially more involved process. With the former, it needs to be in registered in some global (?) namespace, such as "info:". See http://info-uri.info/registry/OAIHandler?verb=ListRecords&metadataPrefix=oai_dc.

See Recommendation 7 of the "Guidelines for Encoding Bibliographic Citation Information in DC"

NSDL may become, shortly, a potential register of these sorts of things, providing a relatively quick way for communities to register schemas, encoding schemes, etc.

Draft Kernel Metadata Specification (August 2004)

Kernel metadata is designed to support orderly collection management, a prerequisite to higher-order services such as electronic permanence and searching. It is complemented by an open set of terms that can be freely proposed; see http://dublincore.org/groups/kernel/propose_term.html .

While it may also be useful for discovery in the Dublin Core metadata sense, kernel metadata aims to provide the data necessary for low-level operations such as generating simple (if rough) descriptions from a list of object identifiers and creating collection subset views for limited surveying and troubleshooting purposes.

Kernel metadata is meant to balance the needs for expressive power, very simple machine processing, and direct human manipulation. For predictability there are exactly four required kernel elements, but for flexibility any number of non-kernel elements may follow them. We use the ERC (Electronic Resource Citation) format in this document for simplicity of exposition, although we could easily express things equivalently in an XML-based format. Here's an example.

```
erc:
who:    Lederberg, Joshua
what:   Studies of Human Families for Genetic Linkage
when:   1974
where:  http://profiles.nlm.nih.gov/BB/AA/TT/tt.pdf
note:   This is an example of a
        small descriptive record.
```

The ERC is a sequence of elements ending in a blank line. An element consists of a label, a colon, and an optional value. A long value may be folded (continued) onto the next line by inserting a newline and indenting the next line. A value can be thus folded across multiple lines. An element value folded across several lines is treated as if the lines were joined together on one long line. For example, the ``note'' element from the example is considered the same as

```
note:   This is an example of a small descriptive record.
```

For annotation purposes, any line beginning with a '#' (hash) character is treated as if it were not present (in programmer terms, a *comment* line). That's the basic ERC record syntax.

The kernel element names mostly map one-to-one with the Dublin Core, however ``who'' maps from the Creator, Contributor, and Publisher elements in a manner consistent with the important Dublin Core minority view that would have them collapsed into one ``agent'' element. The general reason for using different names from Dublin Core was to reflect more stringent kernel value rules. Having said that, kernel metadata semantics still rely heavily on the wording of the NISO/ANSI Z39.85 Dublin Core metadata standard.

Value Rules

An element value may contain multiple values, each separated from the next by a `|' (pipe) character. Each value may contain free text, but special assumptions apply to values that begin with any of the following conventions.

1. An initial `[:]` signals that the value is a 4-digit date (yyyy), an 8-digit date (yyyymmdd), or a 14-digit time (yyyymmddHHMMSS), or a comma-separated list of dates and ranges. A range is a period of time specified by a start date, a hyphen, and an end date, where either date, but not both, may be missing. Optional whitespace may be inserted between any digits for readability.

2. An initial `,` (comma) signals a sort-friendly element, such as one containing a person's name in the form

`Familyname, Givenname`, or containing the words in a document title with the initial stopwords removed or rotated to the end of the element.

3. An initial `(:`*value*`)` signals a controlled vocabulary term *value*. This is especially important for the different flavors of ``missing'', when a value cannot otherwise be supplied for a required element. Everything after the `(:`*value*`)` is considered to be a free text equivalent.

Because these conventions were absent from the example ERC above, no special assumptions could be inferred. A contrived example that does allows all the assumptions is

```
erc:
who:    , Smith, Jill
what:   Cocktail Napkin Drawing #2
when:   [:] 1969 04 01 213000
where:  (:unav) destroyed during spill of 1969 04 01 213500
```

The four main kernel element labels are special in that they are required and can be re-used with different meanings in different contexts. The primary context is the story of an *expression* of an object, such as the publication of a written work. This matches a typical bibliographic citation.

```
who   (erc) a responsible person or party
what  (erc) a name or other human-oriented identifier
when  (erc) a date important in the object's lifecycle
where (erc) a location or system-oriented identifier
```

Another context is the story of an object's content. This is the ``erc-about'' context.

```
who   (erc-about) a person or party figuring in the information content
what  (erc-about) a subject or topic figuring in the information content
when  (erc-about) a time period covered by the information content
where (erc-about) a location or region covered by the information content
```

Another context is the story of the origin of the metadata record itself. This is the ``erc-from'' context.

```
who   (erc-from) a person or party responsible for the record
what  (erc-from) a short form of the identifier for the record
when  (erc-from) the last modification date of the record
where (erc-from) a location of the fullest form of the record
```

Another context is the story of a support commitment made to an object. This is the ``erc-support'' context.

```
who   (erc-support) a person or party responsible for the object
what  (erc-support) the short form of the commitment made to the object
when  (erc-support) the last modification date of the commitment
where (erc-support) a location of the fullest form of the commitment
```

Kernel Glossary of Elements and Values

in

(t11) A structured element that references a serial publication by name, volume, issue, date, and issue URL in which the described object appears. *DC Mapping:* Relation

how

(h5, erc) An account of the content of the resource. Examples of ``how'' include, but are not limited to, an abstract, table of contents, free-text account of the content, or reference to a graphical representation of content. *DC Mapping:* Description

format

(h22, erc) The physical or digital manifestation of the resource. Typically, ``format'' will include the media-type or dimensions of the resource as opposed to its nature or genre. The ``format'' element may be used to identify 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, such as, the list of Internet Media Types (MIME) defining computer media formats. *DC Mapping:* Format

note

(t11) A free text note about the record. *DC Mapping:* none

what

(h2, erc) A human-oriented name given to the resource, or what this expression of the resource was called. Typically, ``what'' will be a name by which the resource is formally known. Compared to the ``where'' element, which is also a kind of name, the ``what'' element is suitable for human consumption. *DC Mapping:* Title

(h12, erc-about) A subject or topic figuring in the information content.

when

(h3, erc) A date of an important event in the lifecycle of the resource, often when it was expressed. Typically, ``when'' will be associated with the creation or availability of the resource. *DC Mapping:* Date

(h13, erc-about) A time period covered by the information content

where

(h4, erc) An access-oriented name given to the resource, or where this resource was expressed. Recommended best practice is to identify the resource by means of a string or number conforming to a formal identification system. Formal identification systems include but are not limited to URL, ARK, DOI, and ISBN. *DC Mapping:* Identifier

(h14, erc-about) A location or region covered by the information content.

who

(h1, erc) An entity responsible for creating or making available the content of the resource, in other words, who expressed the resource. Examples of ``who'' include a person, an organization, or a service. *DC Mapping:* Creator, but if no Creator use Publisher, and if no Publisher, use Contributor.

(h14, erc-about) A person or party figuring in the information content.

:unkn

A null element term explaining that the value is unknown. Compared to :unav, this explanation carries a high degree of authority regarding the object described. Anonymous authorship is an example.

:unav

A null element term explaining that the value is unavailable indefinitely. Compared to :unkn, this explanation is intended for intermediary systems that know less about the object described and have to rely on the best metadata received.

:unac

A null element term explaining that the value is temporarily inaccessible. This might be due, for example, to a system outage.

:unap
A null element term explaining that the value is not applicable or makes no sense.

:unas
A null element term explaining that a value was never assigned. An untitled painting is an example.

:none
A null element term explaining that the element never had a value and never will.

:null
A null element term explaining that the value is explicitly empty.

:unal
A null element term explaining that the value is unallowed or suppressed intentionally.

:tba
A null element term explaining that the value is to be assigned or announced later.

:etal
A null element term explaining that the value is a stand-in for other values too numerous to list (*et alia*).

DRAFT -- The DC Kernel Application Profile -- DRAFT
30 August 2006

This document defines the DC Kernel Application Profile (KAP), specifying its elements and requirements. The DC KAP is designed for providers that need to support the orderly management of their information objects, and wish to do so with minimal overhead in reading and processing metadata descriptions.

The document begins by listing kernel metadata requirements in more detail and correlating them with specific characteristics as found in the kernel metadata specification [KSpec]. It then compares the core DC semantics and DCMI Abstract Model [AModel] with kernel metadata elements and the Electronic Resource Citation (ERC) record structure for holding kernel resource descriptions.

|| Requirements

The overall goal of low-overhead, orderly management includes the needs to reliably identify problem objects during troubleshooting, and to query collections to produce ordered object subsets for the purpose of collection surveying. Organizations that perform orderly management should also be able to report externally on their support commitments and policies. The KAP frames these needs in the context of the following more specific requirments.

+ Reduction

Beginning with the 15 basic DC elements, the DC Kernel Specification [KSpec] distills out a smaller subset of elements to produce a concise description for troubleshooting that can be grasped in a glance. The kernel borrows from the journalistic tradition that "boils down" the essence of a story into the "who, what when, where" of an expression of an information resource.

+ Economy of Expression

To minimize the visual bandwidth in that glance, a simple eye- and machine-readable ERC format is specified that has both a normal and extra concise format (allowing suppression of labels by relying on positional elements). Multi-valued dates and ranges are also allowed so as to avoid having to rely on additional date elements, especially those indicating starts and ends of open-ended ranges.

+ Predictability

To meet the need for determinism during troubleshooting, the above four elements are required. Some flexibility in that requirement is permitted if the value for the given label is one of nine well-known values for "empty" (:unkn, :unav, :unac, :unap, :unas, :none, :null, :unal, and :tba).

+ Sort-Friendliness

To be useful in orderly management, it should be possible for specific element metadata to be entered in such a way that adjacent records in a collection survey can be meaningfully ordered by simple lexical sort on that element. The "sort-friendly" feature should be optional so that providers can opt out of making such assertions about their metadata.

+ Economy of Interpretation

To minimize burden of metadata interpretation by collection manager scripts, the ERC format is based on email headers [ANVL] and may be parsed in two lines of Perl (eg, without a DOM parser as required for XML).

|| Mapping from Kernel to Dublin Core Elements

Kernel elements are mapped to the 15 Dublin Core elements according to the "story" type.

```
 erc:  the story of the expression of a resource
    who         from DC Creator, Contributor, or Publisher
    what        from DC Title
    when        from DC Date
    where       from DC Identifier

 erc-about:  the story of a resource's content
    who         (not mapped from DC)
    what        from DC Subject
    when        from DC Coverage (temporal)
    where       from DC Coverage (spatial)

 erc-from:  the story of the origin of the metadata record itself
    who         (not mapped from DC)
    what        (not mapped from DC)
    when        (not mapped from DC)
    where       (not mapped from DC)

 erc-support:  the story of a support commitment made to an object
    who         (not mapped from DC)
    what        (not mapped from DC)
    when        (not mapped from DC)
    where       (not mapped from DC)
```

|| The Abstract Model and DC Kernel Metadata Resource Descriptions

The following aspects of the DCMI abstract model are supported by the KAP:

+ properties
+ property URIs (base URL plus element name)
+ value strings
+ description sets

The KAP does not support the following aspects of the DCMI abstract model:

+ value string languages
+ encoding schemes
+ encoding scheme URIs
+ resource classes
+ rich representations
+ related descriptions
+ property/sub-property relationships

URIs are not explicitly supported in the KAP, but may be implicit for:

+ value URIs
+ resource URIs
+ resource class URIs

Each property may be repeated.

|| References

[Spec] http://www.jiscmail.ac.uk/files/DC-KERNEL/Aspec.html

[Model] http://www.dublincore.org/documents/abstract-model/

[ANVL] http://www.cdlib.org/inside/diglib/ark/anvlspec.pdf

DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT Functional Requirements for Describing Agents

Dublin Core Metadata Initiative - Agents Working Group

Date: 30 January 2004

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British Library

Status of this document: *Working Draft*

Change history: *Draft 2* (2004-02-05)

Description: This document outlines a set of functional requirements for describing agents.

Comments and feedback should be sent to the working group mailing list, <dc-agents@jiscmail.ac.uk>, the archives for which may be browsed at <http://jiscmail.ac.uk/lists/dc-agents.html>, (NOTE, you must be a member of the WG to post messages to the WG) or, alternatively, send your feedback to the Authors of this Working Draft.

1. Background/Discussion

There is some ambiguity with this issue. The principle question is whether we are trying to 'describe' agents or 'identify' them? How relevant or important is the question? Dublin Core metadata is used for descriptions of resources for the purposes of making discovering them easier. Therefore we characterise DC metadata records as description for discovery. So can we apply this concept to agent descriptions? Perhaps we are describing agents for the purpose of unambiguously identifying them so they can be correctly associated with the resources for which they are responsible? In other words, description for identification. Agent descriptions, therefore, serve two purposes: description *and* identification. So we are trying to describe agents in a way that will allow us to:

- **disambiguate different agents who have shared or similar attributes (such as name, etc);**
- **recognise when agents are the same, despite appearing to be different, for example different presentations of the same name, pseudonyms, etc.;**
- **contact the correct agent associated with a resource;**
- **and collocate all the works of any specific agent.**

Disambiguation may be the most significant of these purposes. It enables effective searching for resources by enabling a reasonable degree of certainty about associated agents, and it is essential for protection of intellectual property and to assist with copyright payments, where a high degree of certainty about agents is needed.

So the resource description/discovery community needs an agent core because the DC element set does not allow a sufficiently precise description of an agent to support the above functions.

2. Scope

This document aims to set out the requirements and the metadata elements needed for unambiguously describing OR identifying the agents associated with resources. Agent descriptions may be contained within DC metadata records, or linked to the DC metadata records for particular resources as an associated metadata description. It is not within the scope of this document to consider the issue of where agent descriptions should be located. The functional requirements set out in this document will form the basis for development of a core set of metadata elements for describing agents.

For the purposes of this document agents are defined as *persons* (author, publisher, sculptor, editor, director, etc.) or *groups* (organization, corporation, library, orchestra, country, federation, etc.) that have a role in the lifecycle of a resource.

We also point out the constraints of the various data protection acts which ensure that there is only a limited amount of data that can legally be recorded about persons. So dates and location may be problematic for living people unless their explicit permission to include such data is obtained.

3. Entities

We define two classes of agents in this document:

1. Person: an individual human being, living or dead; and

2. Group: a set, either existing or defunct, of individual entities acting collectively.

4. Attributes

Each class of entity has associated with it a set of attributes or characteristics that serve to identify that entity unambiguously from all other entities of either class.

4.1 Attributes of a Person

This document defines the attributes of a *person* as the following:

identifier
name
dates
title
affiliation

location
email
other information

1. **Identifier**

A scheme, numeric or alphabetic, or a combination of the two, used to identify unambiguously a specific individual agent. No such schemes yet exist. This element will allow for the use of such schemes when and if they are developed.

4.1.2 Name

The name or names by which the person is known, including alternative names.

4.1.3 Dates

May include date of the person's birth and/or death, or *floruit* dates (ie. an indication of the period in which the person was known to be active in a given field of endeavour).

4.1.4 Title

A word or phrase used to identify the rank, office, nobility, honour, etc. of the person.

4.1.5 Affiliation

The name of the organization, institution, company, or other body with which the person was or is associated, or by whom the person was employed or contracted.

4.1.6 Location

Information about the person’s principal area of residence over time. Context may be indicated by the use of appropriate qualifiers (for example: Lived in Canberra 1991-2005).

4.1.7 Email

Email address or addresses currently assigned to the person at the time of the description.

4.1.8 Other Information

Any additional significant information about the person that is needed to unambiguously identify that person.

4.2 Attributes of a Group

This document defines the attributes of a *group* as the following:

legal number
name
jurisdiction
location
dates
web site
other information

4.2.1 Legal number

Any official number assigned by a public authority that is used to identify the group.

4.2.2. Name

Names by which the group is or was known. May include other forms of the name and changes of name over time.

4.2.3 Jurisdiction

The legal name of the judicial and administrative entity which has jurisdiction over the territory in which the group operates.

4.2.4 Location

The place from which the group operated.

4.2.5 Dates

Dates indicating the period the group operated. May include such things as date of founding and dissolution, date of legal mandate establishing the group, etc.

4.2.6 Web Site

The http address of the world wide web site operated by the group.

4.2.7 Other Information

Any additional significant information about the group that is needed to unambiguously identify that group.

Home

Welcome to the Canadian Association of Research Libraries / Association des bibliothèques de recherche du Canada's institutional repository search service.

Harvester Stats

The CARL/ABRC OAI Harvester currently has **24052** records from **12** archives indexed, and is updated daily.

Open ACCESS Research

Advanced Search | Browse Archives

Search for:

in All Search

Home | Search | Archives | Links | About

The CARL Repositories Metadata Application Profile

Canadian Metadata Forum / Forum sur les métadonnées au Canada 2005
LAC-BAC, Ottawa, 2005-08-28

Mark Jordan
Simon Fraser University

Overview

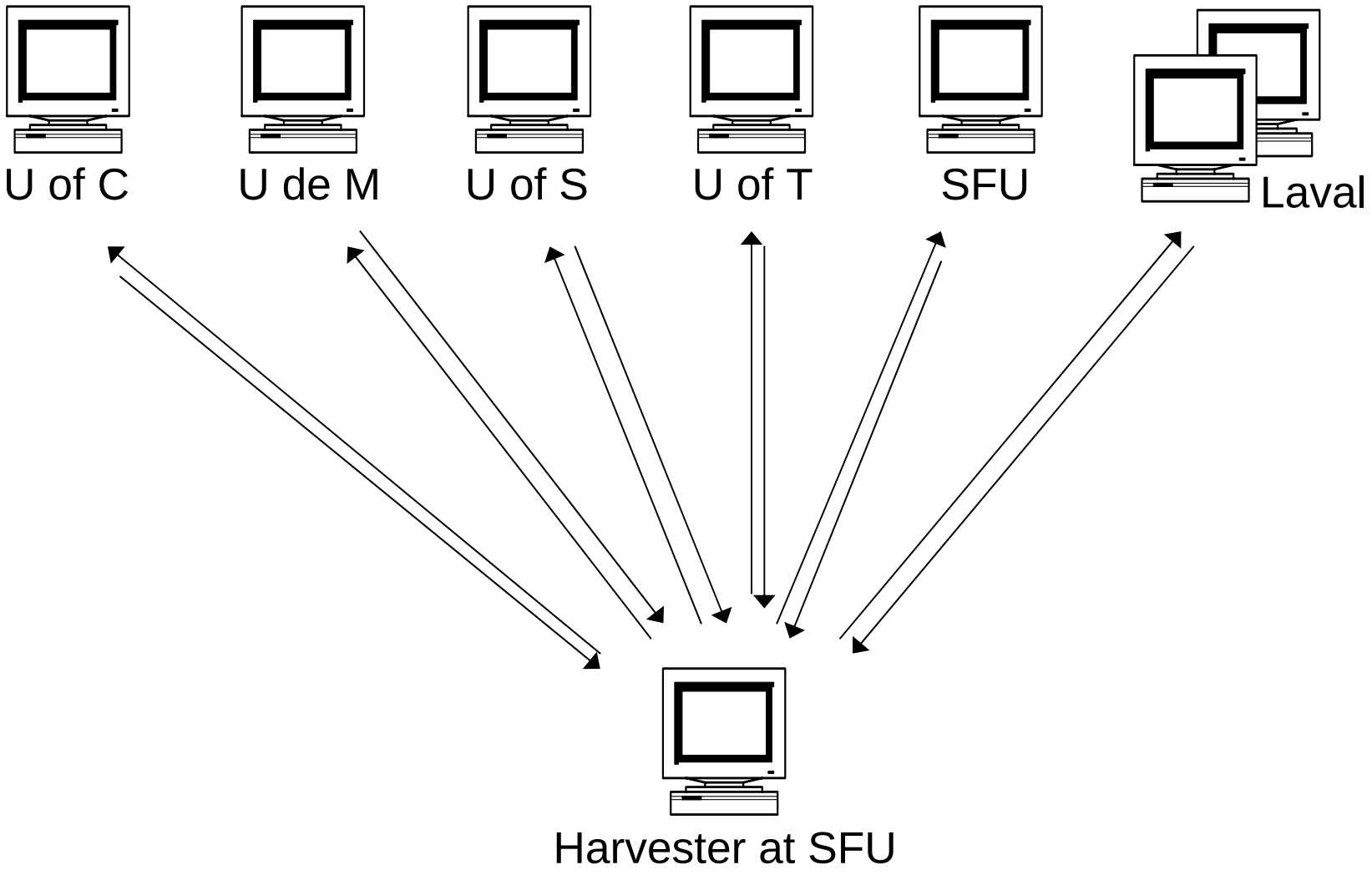
- CARL Institutional Repositories Project
- CARL Harvester
- Snapshot of the metadata
- Working group
- Plan and status

CARL IR Project

- Conferences, meetings
  - Here Today, Gone Tomorrow (Winnipeg, MB, June 2004)
  - Institutional Repositories: The Future Is Now! (Halifax, October, 2004)
- CARL Harvester
- Research, publishing
- Ongoing support
  - Perform annual survey
  - Advocate, promote (e.g., copyright)
  - Promote and improve PKP Harvester, develop Metadata Application Profile
  - Sharing best practices (e.g., email list)

Harvester

- “Canadian Association of Research Libraries / Association des bibliothèques de recherche du Canada's Institutional Repository Metadata Harvester”
- http://carl-abrc-oai.lib.sfu.ca/
- Launched June 2004
- Primarily a search engine for the harvested metadata


U of C
U de M
U of S
U of T
SFU
Laval
Harvester at SFU

Participants

- Archimede Université Laval
- Collection mémoires et thèses de l'Université Laval
- DSpace@UCalgary.ca
- eCommons::Research (University of Winnipeg)
- Mspace (University of Manitoba)
- Papyrus - Dépôt institutionnel numérique (Université de Montréal)
- Simon Fraser University Institutional Repository
- T-Space (University of Toronto)
- University of Saskatchewan Electronic Theses & Dissertations
- University of Waterloo Electronic Theses

Records

- Unqualified Dublin Core via OAI-PMH
- 5445 records (as of June 19)
- Daily additions, frequent bulk loads

Element	Frequency	Percentage of total
Date	14014	14.6%
Subject	13104	13.7%
Format	12799	13.4%
Identifier	12087	12.6%
Creator	11769	12.3%
Description	5880	6.1%
Title	5475	5.7%
Type	5419	5.7%
Language	5234	5.5%
Publisher	4286	4.5%
Contributor	2350	2.4%
Rights	1995	2.1%
Source	787	0.8%
Relation	590	0.6%
Coverage	0	0%

Element	Average elements per record for all providers	Number of providers below average	Number of providers who do not include the element at all
Title	1	0	0
Creator	2.2	6	1
Subject	2.4	3	1
Description	1	1	0
Publisher	0.8	4	1
Contributor	0.4	2	3
Date	2.6	4	0
Type	1	1	0
Format	2.4	6	1
Identifier	2.2	7	0
Source	0.1	3	5
Language	1	0	1
Relation	0.1	1	5
Coverage	N/A	N/A	9
Rights	0.4	0	6

Value	Frequency
Journal (Paginated)	2229
Text	886
Article	814
Electronic Thesis or Dissertation	202
Journal (On-line/Unpaginated)	179
Thesis	172
Yes	134
Technical Report	132
NonPeerReviewed	86
Other	82
Video	61
Journal (Online / Unpaginated)	57
Book	52
Presentation	50
Working Paper	48
Conference Paper	42
Learning Object	42
Book Chapter	30
Dataset	17

Value	Frequency
Conference or Workshop Item	16
Image	16
PeerReviewed	13
No	9
Recording,oral	9
Présentation	8
Autre	7
Rapport technique/de consultation	7
Preprint	5
Monograph	3
Article de revue savante/scientifique	2
Chapitre de livre	2
Conference Proceedings	2
Texte de conférence/Séminaire	2
Article de quotidien/magazine	1
Livre	1
Objet d'apprentissage	1

Searches

- 1628 searches between April 1/04 and June 15/05 (average 3.7 per day)
- 1277 simple, 351 advanced
- 21% returned no records

Metadata Working Group

- “One way to get from a common core to a domain-specific interoperable implementation”
- Informal, volunteer
- Diverse membership
- First meeting September 29, 2005 at University of Ottawa
- Goal is to develop profile by mid 2006

Goals

- Develop an AP that
  - Improves quality of aggregated metadata
  - Is practical
  - Is voluntary
- Benefits include
  - Better centralized services
  - Streamlined local practices
  - Guidance for new repositories

Application Profiles

- A “set of metadata elements, policies, and guidelines defined for a particular application or implementation”
- Defines best practices appropriate to the application
- Examples
  - DC Library Application Profile
  - OhioLINK Digital Media Center (DMC) Metadata Application Profile

Process for Working Group

1. Develop use cases
2. Analyze existing aggregated metadata
3. Perform gap analysis
4. Survey other APs
5. Create Canadian Repositories AP

Challenges

- Diverse, decentralized members
- Local vs. group needs
- Simple yet effective profile
- Bilingual metadata and documents
- Developing added value

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Mapping the Eprints Application Profile to Simple DC

From DigiRepWiki

This document is one of several produced as part of the Eprints Application Profile Wiki. See also:

- Functional Requirements
- Model
- EPrints Application Profile
- Community Acceptance Plan
- **Mapping the Eprints Application Profile to Simple DC**

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Introduction [edit]

This document provides a mapping from the EPrints Application Profile to Simple DC.

The mapping enables software to 'dumb-down' (i.e. transform) a *description set* that conforms with EPrints Application Profile to group of *description sets*, each of which conforms with simple DC, and each of which separately describes a ScholarlyWork or Copy entity from the original *description set*.

In this context, 'simple DC' means

- a *description set* that comprises a single *description*,
- where each *statement* within that *description* uses one the 15 *properties* in the [Dublin Core Metadata Element Set],
- where the same *property* can be used in multiple *statements*,
- where each *statement* has a single *value string*,
- where each *value string* may have an associated *language tag*
- and where there is no use of *resource URIs*, *encoding schemes*, *value URIs* or *rich representations*.

It is worth noting that by using this mapping, the resulting *description set* that describes the ScholarlyWork entity will comply with the Using simple DC to describe eprints document produced by the [ePrints UK project].

It is also worth noting that the resulting simple DC *description sets* describe the eprint at the ScholarlyWork and Copy levels. This is not the only approach to mapping this application profile to simple DC (for example, it would also be possible to map this application profile to a group of simple DC *description sets* about every entity in the model or to a single simple DC *description set* only about the ScholarlyWork.)

Where this application profile and mapping is used within systems that support the [OAI Protocol for Metadata Harvesting] it should be noted that there will be [OAI item] identifiers for each of the ScholarlyWork and Copy entities in the system but that records corresponding to the EPrints Application Profile will only be exposed for those item identifiers corresponding to ScholarlyWorks.

The creation of this particular mapping does not preclude alternative mappings being generated in the future.

Mapping the ScholarlyWork properties [edit]

If the *description* of the eprint (as a ScholarlyWork) provides a *resource URI*, use it as the *value string* of a dc:identifier *statement* in the simple DC *description*.

If the *description* of the eprint (as a ScholarlyWork) provides a *resource URI*, use it as the *value string* of a dc:relation *statement* in the simple DC *description* about each of the Copies.

Type [edit]

Use the *value URI* as the *value string* in a dc:type *statement* in the simple DC *description* about the ScholarlyWork.

Use the *value string* (and any associated *language tag*) as the *value string* in a dc:type *statement* in the simple DC *description* about the ScholarlyWork.

Title [edit]

Use the *value string* (and any associated *language tag*) as the *value string* in a dc:title *statement* in the simple DC *description* about the ScholarlyWork

Use the *value string* (and any associated *language tag*) as the *value string* in a dc:title *statement* in the simple DC *description* about each of the Copies.

Subject [edit]

Use the *value string* (and any associated *language tag*) as the *value string* in a dc:subject *statement* in the simple DC *description* about the ScholarlyWork. Where there is no *value string* but there is a *value URI*, use the *value URI* as the *value string* in a dc:subject *statement*.

Use the *value string* (and any associated *language tag*) as the *value string* in a dc:subject *statement* in the simple DC *description* about each of the Copies. Where there is no *value string* but there is a *value URI*, use the *value URI* as the *value string* in a dc:subject *statement*.

Abstract [edit]

Use the *value string* (and any associated *language tag*) as the *value string* in a dc:description *statement* in the simple DC *description* about the ScholarlyWork.

Use the *value string* (and any associated *language tag*) as the *value string* in a dc:description *statement* in the simple DC *description* about each of the Copies.

Identifier [edit]

Use the *value string* as the *value string* in a dc:identifier *statement* in the simple DC *description* about the ScholarlyWork.

Creator [edit]

Use the *value string* as the *value string* in a dc:creator *statement* in the simple DC *description* about the ScholarlyWork. Where a *value string* is not present, but there is a *related description* about the 'creator' Agent, combine the foaf:family_name and foaf:givenname *value strings* in the form 'family_name, givenname' to form a *value string* or simply use the foaf:name *value string*.

Use the *value string* as the *value string* in a dc:creator *statement* in the simple DC *description* about each of the Copies. Where a *value string* is not present, but there is a *related description* about the 'creator' Agent, combine the foaf:family_name and foaf:givenname *value strings* in the form 'family_name, givenname' to form a *value string* or simply use the foaf:name *value string*.

Funder [edit]

Ignore.

Grant Number [edit]

Ignore.

Supervisor [edit]

Ignore.

Affiliated Institution [edit]

Ignore.

Has Adaptation [edit]

Use the *value URI* as the *value string* in a dc:relation *statement* in the simple DC *description* about the ScholarlyWork.

Use the *value URI* as the *value string* in a dc:relation *statement* in the simple DC *description* about each of the Copies.

Is Expressed As [edit]

Use the *value URI* as the *value string* in a dc:relation *statement* in the simple DC *description* about the ScholarlyWork.

Use the *value URI* as the *value string* in a dc:relation *statement* in the simple DC *description* about each of the Copies.

Mapping the Expression properties [edit]

For each of the *related descriptions* about Expressions in the *description set*, statements using the following *properties* can also be mapped as indicated below.

Title [edit]

Use the *value string* (and any associated *language tag*) as the *value string* in a dc:title *statement* in the simple DC *description* about the ScholarlyWork.

Use the *value string* (and any associated *language tag*) as the *value string* in a dc:title *statement* in the simple DC *description* about each of the Copies associated with this Expression.

Description [edit]

Use the *value string* (and any associated *language tag*) as the *value string* in a dc:description *statement* in the simple DC *description* about each of the Copies associated with this Expression.

Identifier [edit]

Use the *value string* as the *value string* in a dc:relation *statement* in the simple DC *description* about the ScholarlyWork.

Use the *value string* as the *value string* in a dc:relation *statement* in the simple DC *description* about each of the Copies.

Date Available [edit]

Use the *value string* as the *value string* in a dc:date *statement* in the simple DC *description* about the ScholarlyWork.

Use the *value string* as the *value string* in a dc:date *statement* in the simple DC *description* about each of the Copies associated with this Expression.

Status [edit]

Use the *value URI* as the *value string* in a dc:type *statement* in the simple DC *description* about each of the Copies associated with this Expression.

Version Number or String [edit]

Ignore.

Language [edit]

Use the *value string* as the *value string* in a dc:language *statement* in the simple DC *description* about the ScholarlyWork.

Use the *value string* as the *value string* in a dc:language *statement* in the simple DC *description* about each of the Copies associated with this Expression.

Type [edit]

Use the *value URI* as the *value string* in a dc:type *statement* in the simple DC *description* about the ScholarlyWork.

Use the *value string* (and any associated *language tag*) as the *value string* in a dc:type *statement* in the simple DC *description* about the ScholarlyWork.

Use the *value URI* as the *value string* in a dc:type *statement* in the simple DC *description* about each of the Copies associated with this Expression.

Use the *value string* (and any associated *language tag*) as the *value string* in a dc:type *statement* in the simple DC *description* about each of the Copies associated with this Expression.

Copyright Holder [edit]

Use the *value string* as the "_name_" part of the *value string* in a dc:rights *statement* in the simple DC *description* about the ScholarlyWork using the form below. Where a *value string* is not present, but there is a *related description* about the 'copyright holder' Agent, combine the foaf:family_name and foaf:givenname *value strings* in the form 'family_name, givenname' as the "_name_" part of the *value string* or simply use the foaf:name *value string*.

Use the *value string* as the "_name_" part of the *value string* in a dc:rights *statement* in the simple DC *description* about each of the Copies associated with this Expression using the form below. Where a *value string* is not present, but there is a *related description* about the 'copyright holder' Agent, combine the foaf:family_name and foaf:givenname *value strings* in the form 'family_name, givenname' as the "_name_" part of the *value string* or simply use the foaf:name *value string*.

In all cases, the resulting *value string* should take the following form: "(c) Copyright _name_".

Has Version [edit]

Use the *value URI* as the *value string* in a dc:relation *statement* in the simple DC *description* about the ScholarlyWork.

Use the *value URI* as the *value string* in a dc:relation *statement* in the simple DC *description* about each of the Copies associated with this Expression.

Has Translation [edit]

Use the *value URI* as the *value string* in a dc:relation *statement* in the simple DC *description* about the ScholarlyWork.

Use the *value URI* as the *value string* in a dc:relation *statement* in the simple DC *description* about each of the Copies associated with this Expression.

Bibliographic Citation [edit]

Use the *value string* as the *value string* in a dc:relation *statement* in the simple DC description about the ScholarlyWork.

Use the *value string* as the *value string* in a dc:relation *statement* in the simple DC description about each of the Copies associated with this Expression.

References [edit]

Use the *value URI* as the *value string* in a dc:relation *statement* in the simple DC *description* about the ScholarlyWork. Where a *value URI* is not present, use the *value string* as the *value string*.

Use the *value URI* as the *value string* in a dc:relation *statement* in the simple DC *description* about each of the Copies associated with this Expression. Where a *value URI* is not present, use the *value string* as the *value string*.

Editor [edit]

Use the *value string* as the *value string* in a dc:contributor *statement* in the simple DC *description* about the ScholarlyWork. Where a *value string* is not present, but there is a *related description* about the 'editor' Agent, combine the foaf:family_name and foaf:givenname *value strings* in the form 'family_name, givenname' to form a *value string* or simply use the foaf:name *value string*.

Use the *value string* as the *value string* in a dc:contributor *statement* in the simple DC *description* about each of the Copies associated with this Expression. Where a *value string* is not present, but there is a *related description* about the 'editor' Agent, combine the foaf:family_name and foaf:givenname *value strings* in the form 'family_name, givenname' to form a *value string* or simply use the foaf:name *value string*.

Is Manifested As [edit]

Ignore

Mapping the Manifestation properties [edit]

For each of the *related descriptions* about Manifestations in the *description set*, *statements* using the following *properties* can also be mapped as indicated below.

Format [edit]

Use the *value string* as the *value string* in a dc:format *statement* in the simple DC *description* about the ScholarlyWork.

Use the *value string* as the *value string* in a dc:format *statement* in the simple DC *description* about each of the Copies associated with this Manifestation.

Date Modified [edit]

Use the *value string* as the *value string* in a dc:date *statement* in the simple DC *description* about the ScholarlyWork.

Use the *value string* as the *value string* in a dc:date *statement* in the simple DC *description* about each of the Copies associated with this Manifestation.

Publisher [edit]

Use the *value string* as the *value string* in a dc:publisher *statement* in the simple DC *description* about the ScholarlyWork. Where a *value string* is not present, but there is a *related description* about the 'publisher' Agent, use the foaf:name *value string* or combine the foaf:family_name and foaf:givenname *value strings* in the form 'family_name, givenname' as the *value string*.

Use the *value string* as the *value string* in a dc:publisher *statement* in the simple DC *description* about each of the Copies associated with this Manifestation. Where a *value string* is not present, but there is a *related description* about the 'publisher' Agent, use the foaf:name *value string* or combine the foaf:family_name and foaf:givenname *value strings* in the form 'family_name, givenname' as the *value string*.

Is Available As [edit]

Use the *value URI* as the *value string* in a dc:relation *statement* in the simple DC *description* of the ScholarlyWork.

Use the *value URI* as the *value string* in a dc:identifier *statement* in the simple DC *description* of the corresponding Copy.

Mapping the Copy properties [edit]

For each of the *related descriptions* about Copies in the *description set*, *statements* using the following *properties* can also be mapped as indicated below.

Type [edit]

Use the *value URI* as the *value string* in a dc:type *statement* in the simple DC *description* about the Copy.

Use the *value string* (and any associated *language tag*) as the *value string* in a dc:type *statement* in the simple DC *description* about the Copy.

Access Rights [edit]

Use the *value string* as the *value string* in a dc:rights *statement* in the simple DC *description* about the Copy.

Licence [edit]

Use the *value string* as the *value string* in a dc:rights *statement* in the simple DC *description* about the Copy.

Date Available [edit]

Use the *value string* as the *value string* in a dc:date *statement* in the simple DC *description* about the ScholarlyWork.

Use the *value string* as the *value string* in a dc:date *statement* in the simple DC *description* about the Copy.

Is Part Of [edit]

Use the *value URI* as the *value string* in a dc:relation *statement* in the simple DC *description* about the ScholarlyWork.

Use the *value string* as the *value string* in a dc:relation *statement* in the simple DC *description* about the ScholarlyWork.

Use the *value URI* as the *value string* in a dc:relation *statement* in the simple DC *description* about the Copy.

Use the *value string* as the *value string* in a dc:relation *statement* in the simple DC *description* about the Copy.

Description of an Agent [edit]

For each of the *related descriptions* about Agents in the *description set*, *statements* using the following *properties* can also be mapped as indicated below.

Name [edit]

Use the *value string* as the basis for the *value string* in a dc:creator, dc:contributor or dc:publisher *statement* in the simple DC *descriptions* described above.

Family Name [edit]

Use a combination of the *value string* of the foaf:family_name *statement* and the *value string* of the foaf:givenname *statement* in the *description* of the same entity to form a new *value string* for a dc:creator, dc:contributor or dc:publisher *statement* as described above.

Given Name [edit]

Use a combination of the *value string* of the foaf:family_name *statement* and the *value string* of the foaf:givenname *statement* in the *description* of the same entity to form a new *value string* for a dc:creator, dc:contributor or dc:publisher *statement* as described above.

Workplace Homepage [edit]

Ignore.

Mailbox [edit]

Ignore.

Homepage [edit]

Ignore.

Examples [edit]

The following two sections show the simple DC *description sets* that are generated when the mapping described above is applied to the two examples in the ePrints Application Profile.

Example 1 [edit]

The *description set* in Example 1 contains five *descriptions* of:

- one ScholarlyWork

- one Expression of that ScholarlyWork
- one Manifestation of that Expression of that ScholarlyWork
- two Copies of that Manifestation of that Expression of that ScholarlyWork

So the mapping generates three simple DC *description sets*:

- one containing a single *description* of the ScholarlyWork and
- the other two each containing a single *description* of one of the two Copies.

Description Set 1 (ScholarlyWork) [edit]

```
@prefix dc: <http://purl.org/dc/elements/1.1/> .


DescriptionSet (
  Description (
    Statement (
      #     - from Work/resource URI
      Property URI ( dc:identifier )
      Value String ( "http://eprints.gla.ac.uk/503/" )
    )
    Statement (
      #     - from Work/dc:type
      Property URI ( dc:type )
      Value String ( "http://purl.org/eprint/entitytype/ScholarlyWork" )
    )
    Statement (
      #     - from Expression-1/dc:type
      Property URI ( dc:type )
      Value String ( "http://purl.org/eprint/entitytype/Expression" )
    )
    Statement (
      #     - from Work/dc:title
      Property URI ( dc:title )
      Value String ( "Attempts to detect retrotransposition and de novo deletion of Alus and other dispersed
                      repeats at specific loci in the human genome" )
    )
    Statement (
      #     - from Work/dcterms:abstract
      Property URI ( dc:description )
      Value String ( "Dispersed repeat elements contribute to genome instability by de novo insertion and unequal
                      recombination between repeats. To study the dynamics of these processes, we have developed
                      single DNA molecule approaches to detect de novo insertions at a single locus and Alu-mediated
                      deletions at two different loci in human genomic DNA. Validation experiments showed these
                      approaches could detect insertions and deletions at frequencies below 10(-6) per cell. However,
                      bulk analysis of germline (sperm) and somatic DNA showed no evidence for genuine mutant
molecules,
                      placing an upper limit of insertion and deletion rates of 2 x 10(-7) and 3 x 10(-7),
respectively,
                      in the individuals tested. Such re-arrangements at these loci therefore occur at a rate lower
                      than that detectable by the most sensitive methods currently available." )
    )
    Statement (
      #     - from Work/dc:creator
      Property URI ( dc:creator )
      Value String ( "Hollies, C.R." )
    )
    Statement (
      #     - from Work/dc:creator
      Property URI ( dc:creator )
      Value String ( "Monckton, D.G." )
    )
    Statement (
      #     - from Work/dc:creator
      Property URI ( dc:creator )
      Value String ( "Jeffreys, A.J." )
    )
    Statement (
      #     - from Expression-1/dcterms:available
      Property URI ( dc:date )
      Value String ( "2001-02" )
    )
    Statement (
      #     - from Expression-1/dc:language
      Property URI ( dc:language )
      Value String ( "en" )
    )
    Statement (
      #     - from Expression-1/eprint:copyrightHolder
      Property URI ( dc:rights )
      Value String ( "(c) Copyright Nature Publishing Group" )
```

```
    )
    Statement (
      #     - from Manifestation-1/dc:format
      Property URI ( dc:format )
      Value String ( "application/pdf" )
    )
    Statement (
      #     - from Manifestation-1/eprint:isAvailableAs
      Property URI ( dc:relation )
      Value String ( "http://eprints.gla.ac.uk/503/01/Eu_J._Hum_Gen.9(2)143_.pdf" )
    )
  )
)
```

Description Set 2 (Copy 1) [edit]

```
@prefix dc: <http://purl.org/dc/elements/1.1/> .


DescriptionSet (
  Description (
    Statement (
      #     - from Manifestation-1/eprint:isAvailableAs
      Property URI ( dc:identifier )
      Value String ( "http://eprints.gla.ac.uk/503/01/Eu_J._Hum_Gen.9(2)143_.pdf" )
    )
    Statement (
      #     - from Expression-1/dc:type
      Property URI ( dc:type )
      Value String ( "http://purl.org/eprint/entitytype/Expression" )
    )
    Statement (
      #     - from Expression-1/eprint:status
      Property URI ( dc:type )
      Value String ( "http://purl.org/eprint/type/status/PeerReviewed" )
    )
    Statement (
      #     - from Copy-1/dc:type
      Property URI ( dc:type )
      Value String ( "http://purl.org/eprint/entitytype/Copy" )
    )
    Statement (
      #     - from Work/dc:title
      Property URI ( dc:title )
      Value String ( "Attempts to detect retrotransposition and de novo deletion of Alus and other dispersed
                      repeats at specific loci in the human genome" )
    )
    Statement (
      #     - from Work/dcterms:abstract
      Property URI ( dc:description )
      Value String ( "Dispersed repeat elements contribute to genome instability by de novo insertion and unequal
                      recombination between repeats. To study the dynamics of these processes, we have developed
                      single DNA molecule approaches to detect de novo insertions at a single locus and Alu-mediated
                      deletions at two different loci in human genomic DNA. Validation experiments showed these
                      approaches could detect insertions and deletions at frequencies below 10(-6) per cell. However,
                      bulk analysis of germline (sperm) and somatic DNA showed no evidence for genuine mutant
molecules,
                      placing an upper limit of insertion and deletion rates of 2 x 10(-7) and 3 x 10(-7),
respectively,
                      in the individuals tested. Such re-arrangements at these loci therefore occur at a rate lower
                      than that detectable by the most sensitive methods currently available." )
    )
    Statement (
      #     - from Work/dc:creator
      Property URI ( dc:creator )
      Value String ( "Hollies, C.R." )
    )
    Statement (
      #     - from Work/dc:creator
      Property URI ( dc:creator )
      Value String ( "Monckton, D.G." )
    )
    Statement (
      #     - from Work/dc:creator
      Property URI ( dc:creator )
      Value String ( "Jeffreys, A.J." )
    )
    Statement (
      #     - from Expression-1/dcterms:available
      Property URI ( dc:date )
      Value String ( "2001-02" )
```

```
    )
    Statement (
      #     - from Expression-1/dc:language
      Property URI ( dc:language )
      Value String ( "en" )
    )
    Statement (
      #     - from Expression-1/eprint:copyrightHolder
      Property URI ( dc:rights )
      Value String ( "(c) Copyright Nature Publishing Group" )
    )
    Statement (
      #     - from Manifestation-1/dc:format
      Property URI ( dc:format )
      Value String ( "application/pdf" )
    )
    Statement (
      #     - from Work/resource URI
      Property URI ( dc:relation )
      Value String ( "http://eprints.gla.ac.uk/503/" )
    )


  )
)
```

Description Set 3 (Copy 2) [edit]

```
@prefix dc: <http://purl.org/dc/elements/1.1/> .


DescriptionSet (
  Description (
    Statement (
      #     - from Manifestation-1/eprint:isAvailableAs
      Property URI ( dc:identifier )
      Value String ( "http://www.nature.com/ejhg/journal/v9/n2/pdf/5200590a.pdf" )
    )
    Statement (
      #     - from Expression-1/dc:type
      Property URI ( dc:type )
      Value String ( "http://purl.org/eprint/entitytype/Expression" )
    )
    Statement (
      #     - from Expression-1/eprint:status
      Property URI ( dc:type )
      Value String ( "http://purl.org/eprint/type/status/PeerReviewed" )
    )
    Statement (
      #     - from Copy-2/dc:type
      Property URI ( dc:type )
      Value String ( "http://purl.org/eprint/entitytype/Copy" )
    )
    Statement (
      #     - from Work/dc:title
      Property URI ( dc:title )
      Value String ( "Attempts to detect retrotransposition and de novo deletion of Alus and other dispersed
                      repeats at specific loci in the human genome" )
    )
    Statement (
      #     - from Work/dcterms:abstract
      Property URI ( dc:description )
      Value String ( "Dispersed repeat elements contribute to genome instability by de novo insertion and unequal
                      recombination between repeats. To study the dynamics of these processes, we have developed
                      single DNA molecule approaches to detect de novo insertions at a single locus and Alu-mediated
                      deletions at two different loci in human genomic DNA. Validation experiments showed these
                      approaches could detect insertions and deletions at frequencies below 10(-6) per cell. However,
                      bulk analysis of germline (sperm) and somatic DNA showed no evidence for genuine mutant
molecules,
                      placing an upper limit of insertion and deletion rates of 2 x 10(-7) and 3 x 10(-7),
respectively,
                      in the individuals tested. Such re-arrangements at these loci therefore occur at a rate lower
                      than that detectable by the most sensitive methods currently available." )
    )
    Statement (
      #     - from Work/dc:creator
      Property URI ( dc:creator )
      Value String ( "Hollies, C.R." )
    )
    Statement (
      #     - from Work/dc:creator
      Property URI ( dc:creator )
```

```
      Value String ( "Monckton, D.G." )
    )
    Statement (
      #     - from Work/dc:creator
      Property URI ( dc:creator )
      Value String ( "Jeffreys, A.J." )
    )
    Statement (
      #     - from Expression-1/dcterms:available
      Property URI ( dc:date )
      Value String ( "2001-02" )
    )
    Statement (
      #     - from Expression-1/dc:language
      Property URI ( dc:language )
      Value String ( "en" )
    )
    Statement (
      #     - from Expression-1/eprint:copyrightHolder
      Property URI ( dc:rights )
      Value String ( "(c) Copyright Nature Publishing Group" )
    )
    Statement (
      #     - from Manifestation-1/dc:format
      Property URI ( dc:format )
      Value String ( "application/pdf" )
    )
    Statement (
      #     - from Work/resource URI
      Property URI ( dc:relation )
      Value String ( "http://eprints.gla.ac.uk/503/" )
    )
  )
)
```

Example 2 [edit]

The *description set* in Example 2 contains four *descriptions* of:

- one ScholarlyWork
- one Expression of that ScholarlyWork
- one Manifestation of that Expression of that ScholarlyWork
- one Copy of that Manifestation of that Expression of that ScholarlyWork

So the mapping generates two simple DC *description sets*,

- one containing a single *description* of the ScholarlyWork and
- the other two each containing a single *description* of one of the two Copies.

Description Set 1 (ScholarlyWork) [edit]

```
@prefix dc: <http://purl.org/dc/elements/1.1/> .

DescriptionSet (
  Description (
    Statement (
      #     - from Work/resource URI
      Property URI ( dc:identifier )
      Value String ( "http://eprints.soton.ac.uk/22934/" )
    )
    Statement (
      #     - from Work/dc:type
      Property URI ( dc:type )
      Value String ( "http://purl.org/eprint/entitytype/ScholarlyWork" )
    )
    Statement (
      #     - from Expression-1/dc:type
      Property URI ( dc:type )
      Value String ( "http://purl.org/eprint/entitytype/Expression" )
    )
    Statement (
      #     - from Expression-1/dc:type
      Property URI ( dc:type )
      Value String ( "http://purl.org/eprint/type/JournalArticle" )
    )
    Statement (
      #     - from Work/dc:title
```

```
    Property URI ( dc:title )
    Value String ( "Structurally integrated brushless PM motor for miniature propeller thrusters" )
  )
  Statement (
    #     - from Work/dc:subject
    Property URI ( dc:subject )
    Value String ( "T Technology--TC Hydraulic engineering. Ocean engineering" )
  )
  Statement (
    #     - from Work/dc:subject
    Property URI ( dc:subject )
    Value String ( "T Technology--TK Electrical engineering. Electronics Nuclear engineering" )
  )
  Statement (
    #     - from Work/dc:subject
    Property URI ( dc:subject )
    Value String ( "T Technology--TL Motor vehicles. Aeronautics. Astronautics" )
  )
  Statement (
    #     - from Work/dcterms:abstract
    Property URI ( dc:description )
    Value String ( "The design, analysis and performance of a brushless PM motor that is integrated
                    in the structure of a  miniature 50 mm diameter propeller thruster is considered;
                    the stator is fitted in the faired thin duct that surrounds the propeller to improve
                    its efficiency and protect it from damage, and the rotor is fitted to the rim of the
                    propeller. Such a thruster is intended for use on small autonomous underwater vehicles
                    that are being developed for defence, scientific and industry applications. Fitting a
                    relatively large airgap motor with protective coating within the volume of a thin
                    propeller duct (<10 mm thick) imposes extreme constraints on the dimensions of the
                    machine, including a very thin rotor and stator radial thickness and relatively short
                    axial length in addition to the relatively large airgap, which raises theoretical and
                    practical issues that have not been considered in the literature. The design of such
                    a machine is discussed, a demonstrator device is described and FEA and experimental
                    results are reported." )
  )
  Statement (
    #     - from Work/dc:creator
    Property URI ( dc:creator )
    Value String ( "Abu Sharkh, S.M.A. (Suleiman)" )
  )
  Statement (
    #     - from Work/dc:creator
    Property URI ( dc:creator )
    Value String ( "Lai, S.H." )
  )
  Statement (
    #     - from Work/dc:creator
    Property URI ( dc:creator )
    Value String ( "Turnock, S.R." )
  )
  Statement (
    #     - from Expression-1/dcterms:available
    Property URI ( dc:date )
    Value String ( "2004" )
  )
  Statement (
    #     - from Expression-1/dc:language
    Property URI ( dc:language )
    Value String ( "en" )
  )
  Statement (
    #     - from Expression-1/eprint:copyrightHolder
    Property URI ( dc:rights )
    Value String ( "(c) Copyright Institution of Engineering and Technology" )
  )
  Statement (
    #     - from Manifestation-1/dc:format
    Property URI ( dc:format )
    Value String ( "application/pdf" )
  )
  Statement (
    #     - from Manifestation-1/dc:publisher
    Property URI ( dc:publisher )
    Value String ( "Institution of Engineering and Technology" )
  )
  Statement (
    #     - from Work/eprint:isExpressedAs
    Property URI ( dc:relation )
    Value String ( "http://dx.doi.org/10.1049/ip-epa:20040736" )
  )
  Statement (
    #     - from Expression/dcterms:bibliographicCitation
    Property URI ( dc:relation )
```

```
      Value String ( "&ctx_ver=Z39.88-2004&rft_val_fmt=info:ofi/fmt:kev:mtx:journal&rft.genre=article
                      &rft.atitle=Structurally+integrated+brushless+PM+motor+for+miniature+propeller+thrusters
                      &rft.jtitle=IEE+Proceedings+-+Electric+Power+Applications&rft.volume=151&rft.issue=5
                      &rft.spage=513&rft.date=2004&rft.issn=1350-2352
                      &rft.aulast=Sharkh&rft.auinit=S+M+A
                      &rfr_id=info:sid/eprints.soton.ac.uk" )
    )
    Statement (
      #     - from Expression/dcterms:bibliographicCitation
      Property URI ( dc:relation )
      Value String ( "IEE Proceedings - Electric Power Applications, 151, (5), 513-519 (2004)" )
    )
    Statement (
      #     - from Manifestation-1/eprint:isAvailableAs
      Property URI ( dc:relation )
      Value String ( "http://scitation.aip.org/getpdf/servlet/GetPDFServlet?
filetype=pdf&id=IEPAER000151000005000513000001&idtype=cvips&prog=normal" )
    )
    Statement (
      #     - from Copy-1/dcterms:isPartOf
      Property URI ( dc:relation )
      Value String ( "http://www.theiet.org/" )
    )
    Statement (
      #     - from Copy-1/dcterms:isPartOf
      Property URI ( dc:relation )
      Value String ( "Institution of Engineering and Technology" )
    )
    Statement (
      #     - from Copy-1/dcterms:isPartOf
      Property URI ( dc:relation )
      Value String ( "http://www.ietdl.org/" )
    )
    Statement (
      #     - from Copy-1/dcterms:isPartOf
      Property URI ( dc:relation )
      Value String ( "IET Digital Library" )
    )
  )
)
```

Description Set 2 (Copy) [edit]

```
@prefix dc: <http://purl.org/dc/elements/1.1/> .

DescriptionSet (
  Description (
    Statement (
      #     - from Manifestation-1/eprint:isAvailableAs
      Property URI ( dc:identifier )
      Value String ( "http://scitation.aip.org/getpdf/servlet/GetPDFServlet?
filetype=pdf&id=IEPAER000151000005000513000001&idtype=cvips&prog=normal" )
    )
    Statement (
      #     - from Expression-1/dc:type
      Property URI ( dc:type )
      Value String ( "http://purl.org/eprint/entitytype/Expression" )
    )
    Statement (
      #     - from Expression-1/dc:type
      Property URI ( dc:type )
      Value String ( "http://purl.org/eprint/type/JournalArticle" )
    )
    Statement (
      #     - from Expression-1/eprint:status
      Property URI ( dc:type )
      Value String ( "http://purl.org/eprint/type/status/PeerReviewed" )
    )
    Statement (
      #     - from Copy-1/dc:type
      Property URI ( dc:type )
      Value String ( "http://purl.org/eprint/entitytype/Copy" )
    )
    Statement (
      #     - from Work/dc:title
      Property URI ( dc:title )
      Value String ( "Structurally integrated brushless PM motor for miniature propeller thrusters" )
    )
    Statement (
      #     - from Work/dc:subject
```

```
    Property URI ( dc:subject )
    Value String ( "T Technology--TC Hydraulic engineering. Ocean engineering" )
  )
  Statement (
    #     - from Work/dc:subject
    Property URI ( dc:subject )
    Value String ( "T Technology--TK Electrical engineering. Electronics Nuclear engineering" )
  )
  Statement (
    #     - from Work/dc:subject
    Property URI ( dc:subject )
    Value String ( "T Technology--TL Motor vehicles. Aeronautics. Astronautics" )
  )
  Statement (
    #     - from Work/dcterms:abstract
    Property URI ( dc:description )
    Value String ( "The design, analysis and performance of a brushless PM motor that is integrated
                    in the structure of a  miniature 50 mm diameter propeller thruster is considered;
                    the stator is fitted in the faired thin duct that surrounds the propeller to improve
                    its efficiency and protect it from damage, and the rotor is fitted to the rim of the
                    propeller. Such a thruster is intended for use on small autonomous underwater vehicles
                    that are being developed for defence, scientific and industry applications. Fitting a
                    relatively large airgap motor with protective coating within the volume of a thin
                    propeller duct (<10 mm thick) imposes extreme constraints on the dimensions of the
                    machine, including a very thin rotor and stator radial thickness and relatively short
                    axial length in addition to the relatively large airgap, which raises theoretical and
                    practical issues that have not been considered in the literature. The design of such
                    a machine is discussed, a demonstrator device is described and FEA and experimental
                    results are reported." )
  )
  Statement (
    #     - from Work/dc:creator
    Property URI ( dc:creator )
    Value String ( "Abu Sharkh, S.M.A. (Suleiman)" )
  )
  Statement (
    #     - from Work/dc:creator
    Property URI ( dc:creator )
    Value String ( "Lai, S.H." )
  )
  Statement (
    #     - from Work/dc:creator
    Property URI ( dc:creator )
    Value String ( "Turnock, S.R." )
  )
  Statement (
    #     - from Expression-1/dcterms:available
    Property URI ( dc:date )
    Value String ( "2004" )
  )
  Statement (
    #     - from Expression-1/dc:language
    Property URI ( dc:language )
    Value String ( "en" )
  )
  Statement (
    #     - from Expression-1/eprint:copyrightHolder
    Property URI ( dc:rights )
    Value String ( "(c) Copyright Institution of Engineering and Technology" )
  )
  Statement (
    #     - from Manifestation-1/dc:format
    Property URI ( dc:format )
    Value String ( "application/pdf" )
  )
  Statement (
    #     - from Manifestation-1/dc:publisher
    Property URI ( dc:publisher )
    Value String ( "Institution of Engineering and Technology" )
  )
  Statement (
    #     - from Work/resource URI
    Property URI ( dc:relation )
    Value String ( "http://eprints.soton.ac.uk/22934/" )
  )
  Statement (
    #     - from Work/eprint:isExpressedAs
    Property URI ( dc:relation )
    Value String ( "http://dx.doi.org/10.1049/ip-epa:20040736" )
  )
  Statement (
    #     - from Expression/dcterms:bibliographicCitation
    Property URI ( dc:relation )
```

```
    Value String ( "&ctx_ver=Z39.88-2004&rft_val_fmt=info:ofi/fmt:kev:mtx:journal&rft.genre=article
                    &rft.atitle=Structurally+integrated+brushless+PM+motor+for+miniature+propeller+thrusters
                    &rft.jtitle=IEE+Proceedings+-+Electric+Power+Applications&rft.volume=151&rft.issue=5
                    &rft.spage=513&rft.date=2004&rft.issn=1350-2352
                    &rft.aulast=Sharkh&rft.auinit=S+M+A
                    &rfr_id=info:sid/eprints.soton.ac.uk" )
  )
  Statement (
    #     - from Expression/dcterms:bibliographicCitation
    Property URI ( dc:relation )
    Value String ( "IEE Proceedings - Electric Power Applications, 151, (5), 513-519 (2004)" )
  )
  Statement (
    #     - from Copy-1/dcterms:isPartOf
    Property URI ( dc:relation )
    Value String ( "http://www.theiet.org/" )
  )
  Statement (
    #     - from Copy-1/dcterms:isPartOf
    Property URI ( dc:relation )
    Value String ( "Institution of Engineering and Technology" )
  )
  Statement (
    #     - from Copy-1/dcterms:isPartOf
    Property URI ( dc:relation )
    Value String ( "http://www.ietdl.org/" )
  )
  Statement (
    #     - from Copy-1/dcterms:isPartOf
    Property URI ( dc:relation )
    Value String ( "IET Digital Library" )
  )
 )
)
```

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