

Title: Agenda, DCMI Usage Board meeting, Bath (UK), 14-15 March 2004
Modified: 2004-03-22 09:41, Monday
Maintainer: Tom Baker
Latest version: <http://dublincore.org/usage/meetings/2004/03/ISSUES/>
Description: This is the final, updated archival version of the agenda for the meeting of the Usage Board on 14-15 March 2004. This agenda is the basis for an updated PDF file of the meeting packet that includes everything of relevance from the previous packets along with copies of (almost) everything distributed at the meeting.

TOPIC 1: DCMI Naming Policy (Tom)

<http://dublincore.org/usage/meetings/2004/03/ISSUES/docs-naming/>
<http://dublincore.org/usage/meetings/2004/03/naming-policy.html>

TOPIC 2. Encoding schemes for Library Application Profile (Rebecca)

<http://dublincore.org/usage/meetings/2004/03/ISSUES/registration-proposals/>
<http://dublincore.org/usage/meetings/2004/03/AskDCMI-comments.txt>

TOPIC 3: Registration of Vocabulary Encoding Schemes (Traugott)

<http://dublincore.org/usage/meetings/2004/03/ISSUES/registration/>
<http://dublincore.org/usage/meetings/2004/03/Registration.txt>
<http://www2.elsevier.co.uk/~tony/info/info.html>

<http://dublincore.org/usage/meetings/2004/03/Weibel.InfoURI.Registry.pdf>

<http://wip.dublincore.org/schemes/index.html>
<http://www.lub.lu.se/~traugott/drafts/vocab-scheme-Jan04.html>
<http://www.lub.lu.se/~traugott/drafts/vocab-guide6.html>

TOPIC 4. Proposed terms for a Collection Description profile (Andrew)

<http://dublincore.org/usage/meetings/2004/03/ISSUES/terms-collection/>
<http://www.ukoln.ac.uk/metadata/dcmi/collection-provenance/2004-02-10/>
<http://www.ukoln.ac.uk/metadata/dcmi/collection-provenance/2004-03-14/>
<http://www.ukoln.ac.uk/metadata/dcmi/collection-isAvailableAt/>

TOPIC 5. Scope of DCMI Namespaces (Andy, Pete Johnston as guest)

<http://dublincore.org/usage/meetings/2004/03/ISSUES/dcmi-namespaces/>
<http://www.ukoln.ac.uk/metadata/dcmi/dcmi-nmspc-scope/20040222/>

TOPIC 6. DCMI Abstract Model (Andy)

<http://dublincore.org/usage/meetings/2004/03/ISSUES/model/>
<http://www.ukoln.ac.uk/metadata/dcmi/abstract-model/>
<http://dublincore.org/usage/documents/principles/>
<http://www.ukoln.ac.uk/metadata/dcmi/dc-usage/am-issues/>
<http://dublincore.org/usage/meetings/2004/03/Model-comments.txt>

TOPIC 7. Guidelines for DC Application Profiles (Tom)

<http://dublincore.org/usage/meetings/2004/03/ISSUES/docs-DCAPs/>
<http://dublincore.org/usage/meetings/2004/03/cwa14855-20040210.pdf>
<http://dublincore.org/usage/meetings/2004/03/DCMI-CEN-agreement.pdf>

TOPIC 8. PBCore Metadata Dictionary (Rebecca)

<http://dublincore.org/usage/meetings/2004/03/ISSUES/profiles-pbcore/>
http://www.siderean.com/dc2003/603_paper81.pdf
<http://dublincore.org/usage/meetings/2004/03/PBCore-comments.txt>

TOPIC 9. Review of Application Profiles (Tom)

<http://dublincore.org/usage/meetings/2004/03/ISSUES/profiles/>
<http://dublincore.org/usage/documents/profiles/>
<http://dublincore.org/usage/meetings/2004/03/Process6.html>

TOPIC 10. AskDCMI (Diane)

<http://dublincore.org/usage/meetings/2004/03/ISSUES/askdcmi/>
<http://dublincore.org/resources/faq/>
<http://dublincore.org/usage/meetings/2004/03/AskDCMI.txt>

TOPIC 11. Proposals for dc:rights-related terms (Andrew)

<http://dublincore.org/usage/meetings/2004/03/ISSUES/terms-rights/>
<http://www.ukoln.ac.uk/metadata/dcmi/dc-rights/>

TOPIC 12. MARC Relator terms and dc:contributor (Rebecca)

<http://dublincore.org/usage/meetings/2004/03/ISSUES/terms-relators/>
[http://dublincore.org/usage/meetings/2004/03/Agent-Roles-](http://dublincore.org/usage/meetings/2004/03/Agent-Roles-Guidelines2.txt)

[Guidelines2.txt](http://dublincore.org/usage/meetings/2004/03/Agent-Roles-Guidelines2.txt)

<http://dublincore.org/usage/meetings/2004/03/Relator-codes.html>
<http://dublincore.org/usage/meetings/2004/03/Roles-comments.txt>

TOPIC 13. Dublin Core and OAI (Tom)

<http://dublincore.org/usage/meetings/2004/03/ISSUES/oai/>

TOPIC 14. Unfinished business (Tom, Diane, Stuart)

<http://dublincore.org/usage/meetings/2004/03/ISSUES/etc-old/>

TOPIC 15. Usage Board issues (Tom)

<http://dublincore.org/usage/meetings/2004/03/ISSUES/usageboard/>
<http://dublincore.org/usage/meetings/2004/03/DC-2004-call.txt>

TOPIC 16. Other issues

<http://dublincore.org/usage/meetings/2004/03/ISSUES/dublincore-org/>

APPENDIX Reference materials

[http://dublincore.org/usage/meetings/2004/03/2003-09-27.Minutes-seattle-](http://dublincore.org/usage/meetings/2004/03/2003-09-27.Minutes-seattle-final.txt)
[final.txt](http://dublincore.org/usage/meetings/2004/03/2003-09-27.Minutes-seattle-final.txt)

<http://dublincore.org/usage/documents/process/>

Title: "DCMI Naming Policy" issue
Modified: 2004-03-22 09:41, Monday
Maintainer: Tom Baker
Latest version: <http://dublincore.org/usage/meetings/2004/03/ISSUES/docs-naming/>
See also: <http://dublincore.org/usage/meetings/2004/03/ISSUES/>

SUMMARY

I have extensively rewritten an earlier draft by Stu Weibel (see below), renaming it "DCMI Naming Policy" and posting it at:

<http://dublincore.org/usage/meetings/2004/03/naming-policy.html>

In Bath, I would like to ask the Usage Board to indicate its approval of this document (or conditional approval, with comments, as the case may be). We would then report this approval to the Directorate, which would formally approve the document as a DCMI Recommended Resource.

BACKGROUND

As originally declared in 1998, the fifteen elements of Dublin Core had "names" (which called "labels" at the time) in uppercase [1]. Although there was discussion about changing the names to lowercase (notably at DC-8 in Ottawa, October 2000), this was not done, and the uppercase names progressed through the NISO and then ISO processes and are currently shown in ISO 15836 of February 2003 [2]. The uppercase names are thus also reflected in the DCMI document "Dublin Core Metadata Element Set, Version 1.1: Reference Description", which is word-for-word identical with ISO 15836 [3].

However, the official DCMI term declarations -- those that have a Usage Board status of "Recommended" (as reflected in [4], [5], and [6]) -- currently have URIs based on a name in lowercase. This change was based on a decision of the Directorate dated 2002-09-13 (as reported on the Web page "DCMI Usage Board Decisions" [7]) which, however, points to a placeholder document [8].

In September, Andy posted the most recent draft of that paper on the UKOLN Web site [9] and agreed to shepherd the case change proposal through UB for eventual publication as a DCMI recommendation (see point A.1 below). Responsibility for the text, however, lies with the currently listed author, Stu Weibel, or at any rate with the DCMI Directorate.

After the case change is approved, the Directorate would presumably seek a corresponding change in the corresponding

formal standards documents. In April 2002, John Kunze posted a corrected draft of RDF 2413 [10] but this has since expired and been replaced by a placeholder [11].

- [1] <http://www.ietf.org/rfc/rfc2413.txt>
- [2] <http://www.niso.org/international/SC4/n515.pdf>
- [3] <http://dublincore.org/documents/dces/>
- [4] <http://dublincore.org/documents/dcmi-terms/>
- [5] <http://dublincore.org/usage/terms/history/>
- [6] <http://dublincore.org/2003/03/24/dces#>
- [7] <http://dublincore.org/usage/decisions/#Decision-2002-02>
- [8] <http://dublincore.org/documents/2002/09/13/case/>
- [9] <http://www.ukoln.ac.uk/metadata/dcmi/case-policy/>, archived as:
<http://dublincore.org/usage/meetings/2004/03/2003-09-28.case-policy.html>
- [10] <http://www.ietf.org/internet-drafts/draft-kunze-rfc2413bis-01.txt>
- [11] <http://www.ietf.org/internet-drafts/draft-kunze-rfc2413bis-02.txt>

APPENDIX: Recent decisions and action items

A.1. SEATTLE Action Item 19: Andy to shepherd the case change proposal through UB for eventual issue as a DCMI recommendation.

ABOUT THE
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Title: DCMI Policy on Naming Terms

Creator: Stuart Weibel

Creator: Thomas Baker

Date Modified: 2004-02-05

Identifier: <http://dublincore.org/documents/2004/03/15/naming/>

Is Replaced By: Not applicable

Latest Version: <http://dublincore.org/documents/naming/>

Status of Document: This is a DCMI [Recommended Resource](#).

Description of Document: This document describes the policy followed in assigning Names to DCMI terms, particularly with regard to case sensitivity.

DCMI Term Names

The Dublin Core Metadata Initiative maintains sets of metadata terms. Each metadata term is assigned a *name* -- a character string or "token" that is unique in the context of a particular DCMI term set [[DCMI-TERMS](#)]. This string is invariant across encodings and languages. In accordance with the DCMI Namespace Policy, the *name* of a term is appended to the URI of a DCMI namespace to construct a globally unique identifier (URI) for that particular term [[DCMI-NAMESPACE](#)]. The typology of DCMI metadata terms is described in the DCMI Grammatical Principles [[DCMI-PRINCIPLES](#)].

Case Policy for DCMI Term Names

Names of DCMI Elements and Element Refinements start with lowercase characters but may contain uppercase characters where a term name is comprised of multiple concatenated words. In such cases, the leading character of additional words will be capitalized to improve human-readable clarity. Examples include:

creator
audience
isReplacedBy

which are identified with the following URIs:

<http://purl.org/dc/elements/1.1/creator>
<http://purl.org/dc/terms/audience>
<http://purl.org/dc/terms/isReplacedBy>

Names of Encoding Schemes identifying controlled vocabularies by acronym are represented in all uppercase characters. Examples include:

DDC
W3CDTF
ISO639-2

which are identified with the following URIs:

<http://purl.org/dc/terms/DDC>
<http://purl.org/dc/terms/W3CDTF>
<http://purl.org/dc/terms/ISO639-2>

Names of Encoding Schemes other than acronyms are represented with a leading uppercase character followed by lowercase characters. Examples include:

Period
Box

which are identified with the following URIs:

<http://purl.org/dc/terms/Period>
<http://purl.org/dc/terms/Box>

Names of values within a DCMI-maintained controlled vocabulary such as the DCMI Type Vocabulary begin with an uppercase character followed by lowercase, but with subsequent concatenated words in the name capitalized as well. Examples include:

InteractiveResource
Collection
Dataset

which are identified with the following URIs:

<http://purl.org/dc/dcmitype/InteractiveResource>

<http://purl.org/dc/dcmitype/Collection>

<http://purl.org/dc/dcmitype/Dataset>

No DCMI Term Names will be assigned that differ from other Names only in regard to case.

Historical note

Since the mid-1990s, Dublin Core has developed in parallel with World-Wide Web technology, and Dublin Core metadata has been deployed using all of the major encoding syntaxes that have evolved. In the transition from HTML to XML, XHTML, and RDF/XML, conventions regarding the naming of metadata elements have consolidated in the wider Web community, and DCMI policy has changed to follow the emerging model of good practice.

In 1998, the Dublin Core element set was published using Names (at the time called Labels) which had a leading uppercase character, e.g. Title and Creator [[RFC2413](#)]. In October 2000, the DCMI Advisory Committee decided to change the Names of elements to lowercase in order to bring DCMI practice into line with conventions widely (though not universally) followed in existing Dublin Core applications and in the XML and RDF/XML communities more generally.

Unfortunately, this decision was propagated throughout DCMI documentation with some delay [[DC-ELEMENTS](#)]. In the meantime, the Dublin Core Metadata Element Set had progressed through formal standardization channels for recognition first as NISO Z39.85-2001 and CEN Workshop Agreement CWA 13874, then as ISO 15836 -- but with element Names starting in uppercase [[ISO15836](#)].

The DCMI Directorate is not aware of any applications or implementations where this inconsistency with regard to the case of element Names has caused any practical problems. For the sake of consistency, however, the Directorate will undertake to amend existing specifications as permitted by their maintenance cycles.

Confusion over case sensitivity is commonplace in Web protocols, and metadata application developers are likely to find many permutations of case in instance data and term declarations. Thus, to paraphrase a dictum from early Web protocol development, applications should:

...be rigorous in what you export, and tolerant in what you import from other applications.

In practice, this suggests that applications are well advised to normalize case when parsing terms for identity comparisons. Prudence mitigates against the use of case to distinguish between alternative

identities of related terms in any namespace, and it is DCMI policy that such distinctions not be made within its own namespaces, so it is unlikely that errors would be introduced by normalizing case.

References

- [DCMI-TERMS] <http://dublincore.org/documents/dcmi-terms/>
- [DCMI-NAMESPACE] <http://dublincore.org/documents/dcmi-namespace/>
- [RFC2413] <http://www.ietf.org/rfc/rfc2413.txt>
- [DC-ELEMENTS] <http://dublincore.org/documents/2002/10/06/current-elements/>
- [ISO15836-2003] <http://www.niso.org/international/SC4/n515.pdf>

Feedback on this document

The DCMI Directorate welcomes comments and suggestions on this policy: dcmi-feedback@dublincore.org



Metadata associated with this resource: <http://dublincore.org/documents/case-policy/index.shtml.rdf>

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Topic: Encoding schemes for the Library Application Profile
Modified: 2004-03-22 09:41, Monday
Maintainer: Tom Baker
Latest version: <http://dublincore.org/usage/meetings/2004/03/ISSUES/registration-proposals/>
See also: <http://dublincore.org/usage/meetings/2004/03/ISSUES/>

Shepherd: Rebecca Guenther

SUMMARY (Tom)

In Ithaca, and then again in Seattle, we discussed whether the following Encoding Schemes, needed for the DCMI Library Application Profile, should be formally approved and declared by DCMI:

- 1) <http://purl.org/dc/terms/ISO8601>
- 2) <http://purl.org/dc/terms/AAT>
- 3) <http://purl.org/dc/terms/TGM2>
- 4) <http://purl.org/dc/terms/SICI>
- 5) <http://purl.org/dc/terms/ISBN>
- 6) <http://purl.org/dc/terms/ISSN>
- 7) <http://purl.org/dc/terms/DOI>
- 8) <http://purl.org/dc/terms/GAC>
- 9) <http://purl.org/dc/terms/MARC> Country Codes (sic)

Whether or not this should be done is a question that differs case by case, depending on whether the maintainers of the resources in questions were likely themselves to assign URIs or whether evolving practice for URIs and URNs would likely provide workable solutions in the short term that could make a DCMI-specific approach redundant.

The following is my rough-cut assemblage of notes and excerpts from email as a guide; Rebecca will provide the latest status on each.

Incidentally, I discovered while writing this summary that clicking on any of the URIs above takes one to the top of the file <http://dublincore.org/2003/03/24/dcq>, even though none of those URIs exist...

IN DETAIL

In Ithaca in June 2003, we discussed proposals for several encoding schemes [1].

The Ithaca notes show we approved two proposals [2]:

- <http://purl.org/dc/terms/ISO8601> (by a vote of 7 to 1)
- <http://purl.org/dc/terms/AAT> (by a vote of 8 to 0)

We also decided [2]: "New terms to go in the terms namespace with one or two exceptions (MARC, DOI?). Discussions and agreement on new terms to be continued online in early to mid-July."

I see the proposals were discussed in July 2003 [3,4,5] and then in Seattle, and this would appear to be the state of affairs:

1) <http://purl.org/dc/terms/ISO8601>

Discussed and approved. I have put a draft of the decision text at <http://dublincore.org/usage/meetings/2004/03/2004-01.ISO8601.txt>. If Rebecca confirms this is accurate, we can publish it after the Bath meeting.

Note that Roland suggested [4]: "As far as ISO 8601 is concerned i refer to the Abstract of <http://www.w3.org/TR/NOTE-datetime> as well as <http://www.w3.org/TR/xmlschema-2/#isoformats> May I suggest to include both links with the registration of ISO 8601." Rebecca agreed that these links should be included.

2) <http://purl.org/dc/terms/AAT>

In Ithaca, we decided that Rebecca needed to investigate whether AAT has a persistent URI at Getty. So it was deferred for further research (the URI could be added later once approved). This should now change to use the MARC namespace. Getty has not established persistent URIs. They were comfortable with using the MARC source code rather defining a new one in the DC namespace. (Contact there was Murtha Baca). I included this revised proposal in the document discussed in Seattle and it was approved. The URI should be: <http://www.loc.gov/marc.source/aat>. There was some discussion of whether, as an Encoding Scheme, AAT would need to be in uppercase, but it was affirmed that such URI assignment policies are the prerogative of the agency assigning the URIs.

3) <http://purl.org/dc/terms/TGM2>

In Ithaca, we decided this needs to be revised and resubmitted for a vote [3]. In Seattle, this was submitted as "gmGPC" and using the MARC namespace (the same as TGM2). So it is: <http://www.loc.gov/marc.source/gmGPC> Same question about upper vs. lower case.

4) <http://purl.org/dc/terms/SICI>

5) <http://purl.org/dc/terms/ISBN>

6) <http://purl.org/dc/terms/ISSN>

7) <http://purl.org/dc/terms/DOI>

Rebecca in July [3]: "Andy indicated that any of these may be expressed as a URI, and that they should be expressed this way. Thus, it is not necessary to add, since the

encoding scheme "uri" would be indicated. (I think there is disagreement about this approach, since some have not been registered through IANA as a URI scheme or URN name space.) Comments?"

In February 2004: "Can't be expressed as URI, since it hasn't been approved as a URN namespace or URI scheme. See below."

Roland on SICI [4]: "Some Problem with SICI: The Contribution Segment seems to explicitly use < and > signs. Use of SICI's in a literal way could cause trouble in XML. Need to get into touch with SICI about standardized escaping mechanism - seeAlso <http://sunsite.berkeley.edu/SICI/version2.html> (on a related problem with interpreting SICI as URN)"

Rebecca, 2004-02: This could still be a problem and needs to be done.

SEATTLE Vote on SICI [6]: UB approves SICI conditionally (and unanimously). If the IETF InfoURI proposal is accepted SICI will be encoded as a URI and UB approval for SICI as an encoding scheme is unnecessary. If this is the case the vote becomes redundant.

Roland on ISBN [4]: "ISBN registered as Formal URN Namespace: seeAlso RFC3187"
Rebecca, 2004-02: Yes. Express as URI.

Roland on ISSN [4]: "ISSN registered as Formal URN Namespace: seeAlso RFC3044"
Rebecca, 2004-02: Yes. Express as URI.

Roland on DOI [4]: doi:10.1004/123456. -- But Tom does not believe this prefix was approved by IETF.

Roland: Quoted from <http://www.doi.org/faq.html> : "A DOI is an implementation of URI.." seeAlso NISO Z39.84 [I don't know whether Z39.84 has been recognized outside the US] - and info:doi/

Rebecca: But it's not registered as a URI scheme. That is essentially why info came about. When those things were written I think noone knew what a stumbling block this was going to be.

SEATTLE Vote on DOI [6]: UB approves DOI conditionally (and unanimously). If the IETF InfoURI proposal is accepted DOI will be encoded as a URI and UB approval for DOI as an encoding scheme is unnecessary. If this is the case the vote becomes redundant.

Rebecca, 2004-02: On SICI and DOI: Info has not been formally approved by IETF, but NISO has already established a registry

for info schemes. Does that give it some sort of status? I would think so. We could then bring a proposal to approve info in the NISO namespace and use schemes that are registered there.

Roland: There was quite some discussion about info on rdf-interest and confusion. We need to consider what to do with pending (such as info) and possibly conflicting standardization approaches (such as doi).

Rebecca: DOI is registered under INFO, so is not a conflicting approach. See: <http://info-uri.info/>

Roland: Right. But NISO has set up the registry anyhow. My point was that you had said SICI would come under info but that DOI was going another way. But that is not the case-- they are both going the route of info.

Andy, 2004-02-23:

- 1) A URI scheme doesn't have to be registered for something to be a valid URI - it just has to conform to the URI spec. So
doi:1.100/23435
is a valid URI irrespective of whether the 'doi' scheme is registered with IANA or not.
- 2) It is not clear to me (based on discussions with Norman Paskin at DOI) whether the IDF is going firmly down the 'info' route or not. It is still the case that they only really recommend the doi:10.100/234 form of encoding AFAIK. So, 'info' may be one way of encoding a DOI, but it may be that the IDF never really endorse this mechanism??

However, this is largely irrelevant... in order to encode a DOI in DC metadata you only need to use the URI encoding scheme, either as

```
<meta name="DC.identifier" scheme="DCTERMS.URI"
content="doi:10.1000/234"/> or <meta name="DC.identifier"
scheme="DCTERMS.URI" content="info:doi/10.1000/234" />
```

I have to confess that I still don't understand why we approved DOI as an encoding scheme in Seattle. Someone kindly put me out of my misery and remind we why we want to invent a DC-specific way of encoding DOIs (and the rest!)?

- 8) <http://purl.org/dc/terms/GAC>
- 9) <http://purl.org/dc/terms/MARC> Country Codes (sic)
To be revised and resubmitted for a vote.

SEATTLE Decision [6]: Rebecca will consult with Andy as to

proper URI identification of the Marc GAC and MARC Country Codes schemes. They will both live in a LC namespace.

These go in the LC namespace:

- <http://www.loc.gov/marc.gac/>
- <http://www.loc.gov/marc.countries>

REFERENCES

- [1] <http://dublincore.org/usage/meetings/2003/06/dclib-encodingschemes.html>
- [2] <http://www.jiscmail.ac.uk/cgi-bin/wa.exe?A2=ind0309&L=dc-usage&T=0&O=D&P=773>
- [3] <http://www.jiscmail.ac.uk/cgi-bin/wa.exe?A2=ind0307&L=dc-usage&T=0&F=&S=&P=4409>
- [4] <http://www.jiscmail.ac.uk/cgi-bin/wa.exe?A2=ind0307&L=dc-usage&T=0&F=&S=&P=4409>
- [5] <http://www.jiscmail.ac.uk/cgi-bin/wa.exe?A2=ind0307&L=dc-usage&T=0&F=&S=&P=4669>
- [6] <http://dublincore.org/usage/meetings/2004/02/2003-09-27.Minutes-seattle-final.txt>

Date: Mon, 8 Mar 2004 16:32:52 -0500
From: Diane Hillmann <dihl@CORNELL.EDU>
Subject: Some comments on Tom's AskDCMI issues
To: DC-USAGE@JISCMail.AC.UK

Diane's comments on Tom's AskDCMI concerns:

> -- When questions come into my mailbox but not answers,
> I cannot know which ones have been answered without going
> to the Web, nor can I accumulate my own archive of answers,
> meaning I have to search the database on the Web to know
> whether a similar question has been answered.

Not sure whether this is a generalized need or a "Tom-need"?
In fact, someone (the Administrator) does know what questions
have been answered, and is tasked to keep track of that.
I don't think the writers of the software ever considered
that someone might want to do what you suggest, Tom. ;-)
But though it may sometimes be useful to search the corpus to
see if a question has been answered, I suspect most experts
don't do that.

The process of turning these answers into FAQs is not trivial.
I did a project at work where I had someone go through and
characterize email based answers and do some initial editing
to create a FAQ, and though it worked it was a lot of effort.
We could do it, but it would need a considerable investment of
time on someone's part. Generally each question has a specific
context and to be turned into a general FAQ would require some
(if not considerable) editing.

> -- Not being able to get an overview of what has been written,
> I am uneasy with the notion of a growing set of overlapping
> answers to overlapping questions, and that some of these
> answers may in fact be controversial, or out-of-date,
> or at any rate need to be maintained.

Right now there are only a few experts that can answer
questions without being reviewed by the Administrator. These
are not people who write controversial answers. Because of the
"experts" the answers are probably less controversial than
answers gleaned through questions on DC-General. They are
not easily maintained, it's true, but to a certain extent
how "easy" depends on your definition of "maintenance."
Out-dated answers could simply be deleted, for instance.

Although there are indeed some overlapping questions and
answers, I don't think that the problem is particularly bad,
yet, primarily because of the "context" mentioned above.

> -- It is not clear to me whether the goal is to accumulate a
> body of best practice and use that corpus to refine and
> improve our collective sense of best practice over time.
> If the goal is not to accumulate knowledge, then the AskDCMI
> work feels like a relentless servicing of user requests.
> If the goal is to learn from the process, then it is not
> clear to me how we can capture that learning. For example,
> if the answers were being cited and summarized in a
> single, growing FAQ file that we could periodically
> download and keep on hand, then one could presumably

> answer alot of the new questions simply by pointing to
> a specific section of the FAQ. This would also have
> the welcome side effect of improving the quality of
> <http://dublincore.org/resources/faq/>, which does indeed
> need to be revised.

The DCMI Official FAQ is clearly outdated and should be re-written, or deleted. I had hoped to incorporate some of that into the AskDCMI knowledgebase but haven't had the time to do it. If someone were to write the sort of FAQ Tom suggests, the DCMI experts would not need to be answering the "repeat" questions, probably the administrator could refer questioners to the FAQ without the questions even appearing for experts. However, the trick is to get that FAQ written.

I think there are several goals, not the least of which is a servicing of user requests. At the very basic level, the questions asked let US know where the holes in our documentation are, and what implementers still don't understand. The fact that we often don't respond quickly or well to that information is another issue. We are capable of generating lots of good ideas on how to improve things, but haven't been as good on figuring out where to expend our limited resources.

> -- If the answers are not being captured or summarized in such
> a central document, it is not clear to me what longer- term
> responsibility is being implicitly assumed (and by whom)
> for reviewing and maintaining the many separate answers.
> In principle, does an answer have an expiration date?

Well, I'm not at all sure we could have even stated the question last year, so in some ways asking how we will maintain this is progress. I don't know that answers explicitly have an expiration date, but date might be one way to focus review.

> -- It is not clear to me how AskDCMI relates to DCMI's
> open mailing lists, where asking the same question might
> lead to a discussion instead of a straightforward (but
> possibly simplistic or misleading) answer.

I think they serve quite different purposes. Although sometimes good discussion comes from a question asked, just as often the result is a clueless answer being given that then needs to be diplomatically refuted--thereby confusing folks even more. When what is needed is a broad range of opinion on an issue that is not a "best practice" question, then the mailing lists are great. When the question is, how can I do it right?--the mailing lists may not be the best resource, mostly because we have no way of defining for new implementers who is competent to speak. I have more than once steered AskDCMI questioners to the list, when they ask the sort of question that should be asked on lists.

> I pose this concerns in a constructive spirit because I would
> very much like to see this service work. On the other hand,
> AskDCMI is not a service of the Usage Board, so I am uncertain
> how far this discussion should go. In Bath, we could perhaps
> consider the following:

> -- A printout (if such can be generated) of the entire corpus
> of answers and rough analysis of questions by type.

Not sure what kind of type you're referring to here. I suspect we each would characterize them differently (a common problem, as we know). I'd suggest that we need a better feel for our goal and priorities before anyone proceeds with this task.

> -- A general discussion of current plans and future
> developments in light of the comments above.

Stuart has agreed to discuss future plans for the software at the meeting. I think your question about whether AskDCMI is a service of the UB is an important one. To some extent, I think one of our problems is that we have not managed to garner the participation of the larger Advisory Board in this effort. I think AskDCMI is much better conceptually understood at that level.

Date: Wed, 10 Mar 2004 06:47:26 +0100
From: Thomas Baker <thomas.baker@bi.fhg.de>
Subject: Re: Some comments on Tom's AskDCMI issues

Diane wrote:

> Not sure whether this is a generalized need or a "Tom-need"?
> In fact, someone (the Administrator) does know what questions
> have been answered, and is tasked to keep track of that.
> I don't think the writers of the software ever considered
> that someone might want to do what you suggest, Tom. ;-)

The questions appear in the mailbox when they are asked, but the answers do not. If the answer could appear in my mailbox as a reply to the question, I would see "Aha, it has been answered, I don't need to do it then." I would also see the text of the answer (and possibly learn something, or even disagree) without having to look on the Web.

> The process of turning these answers into FAQs is not trivial.
> I did a project at work where I had someone go through and
> characterize email based answers and do some initial editing
> to create a FAQ, and though it worked it was a lot of effort.
> We could do it, but it would need a considerable investment of
> time on someone's part. Generally each question has a specific
> context and to be turned into a general FAQ would require some
> (if not considerable) editing.

I propose the following:

- 1) We reduce the FAQ to 10-20 broad questions.
- 2) We then determine who should be responsible for maintaining the answer to each question. Two obvious candidates are:
 - the Directorate, for questions related to DCMI as an organization;
 - the Usage Board, for questions related to DCMI metadata terms (the bulk of the questions);

It is not clear to me who would best take the questions related to syntax or software tools.

- 3) Supposing the questions were found to fall neatly into three

categories -- e.g.: Semantic, Organizational, and Implementational -- then the FAQ could perhaps be divided into three parts and assigned to three jurisdictions: Usage Board, Directorate, and [Other].

- 4) To each question in the Usage Board area, the head of the UB would assign a shepherd. Each UB shepherd of a FAQ question would be responsible for reviewing the FAQ's answer for freshness and currency before each UB meeting. Each UB member would be responsible for reading (i.e., re-reading) the entire UB section of the FAQ before each meeting. At each meeting, a vote would be held to explicitly approve the UB section of the FAQ.
- 5) For the purposes of citation, each question in the FAQ will have a "handle" (e.g., <http://dublincore.org/faq/#whatarequalifiers> or <http://dublincore.org/faq/whatarequalifiers/>). This handle would serve both as a resolvable pointer to the answer for a question and as an Identifier citable, for example, in answers to queries on AskDCMI. To adopt this approach one would need to consider the following:
 - a) The <http://dublincore.org/faq/#whatarequalifiers> style of identifier implies that the FAQ is a single document with HTML anchors. Advantage: Click on the FAQ and send the whole thing to the printer. Disadvantage: the Webmasters need to cut-and-paste updated text into a master document (unless one were to use "includes" to "pull in" the answers from an external file?).
 - b) The <http://dublincore.org/faq/whatarequalifiers/> style of identifier implies a directory structure in which each answer is a separate file in a separate directory. Advantage: the shepherd edits a single file which is simply dropped into the directory structure.

> Out-dated answers could simply be deleted, for instance.

It is not clear to me what function "old answers" have in AskDCMI. Ideally, one would copy the answer written by an AskDCMI expert to the shepherd of a DCMI FAQ question and that work would lead to the improvement in the DCMI FAQ. If that were the case, we would want to explicitly encourage people to consult the DCMI FAQ instead of searching through old answers on AskDCMI.

As for pruning out-dated answers, it seems to me that determining the freshness of an answer on a case-by-case basis would require significant effort on the part of AskDCMI administrators. It would seem more efficient simply to give AskDCMI answers a fixed expiration date, after which they would either become unavailable or move to an explicitly "archival" section of AskDCMI.

> If someone were to write the sort of FAQ Tom suggests,
> the DCMI experts would not need to be answering the "repeat"
> questions, probably the administrator could refer questioners
> to the FAQ without the questions even appearing for experts.
> However, the trick is to get that FAQ written.

I think the answer lies in partitioning responsibility for

the FAQ and assigning shepherds.

> I think there are several goals, not the least of which
> is a servicing of user requests. At the very basic level,
> the questions asked let US know where the holes in our
> documentation are, and what implementers still don't
> understand.

Agreed.

> Well, I'm not at all sure we could have even stated the
> question last year, so in some ways asking how we will maintain
> this is progress.

Yes.

> > -- A printout (if such can be generated) of the entire corpus
> > of answers and rough analysis of questions by type.
>
> Not sure what kind of type you're referring to here. I suspect
> we each would characterize them differently (a common problem,
> as we know). I'd suggest that we need a better feel for our
> goal and priorities before anyone proceeds with this task.

<http://www.bi.fhg.de/People/Thomas.Baker/ISSUES/CACHE/AskDCMI.txt>
is perhaps good enough as a basis for discussion. By my
reading of the questions, I should think that a good FAQ should
be able to provide answers to "85%" of the AskDCMI questions,
so that on AskDCMI an expert could in many cases answer an
question with just one or two sentences plus a pointer to a
specific answer in the DCMI FAQ.

> To some extent,
> I think one of our problems is that we have not managed to
> garner the participation of the larger Advisory Board in this
> effort. I think AskDCMI is much better conceptually understood
> at that level.

Conceptually, I think the way forward lies in solving the
problem of maintaining an excellent FAQ. The FAQ is something
for which we can reasonably expect an AB member to read and
provide feedback.

Title: "Vocabulary Encoding Scheme Registration" issue
Modified: 2004-03-22 09:41, Monday
Maintainer: Tom Baker
Latest version: <http://dublincore.org/usage/meetings/2004/03/ISSUES/registration/>
See also: <http://dublincore.org/usage/meetings/2004/03/ISSUES/>
Description: Evolving summary of the VESR issue from a UB point of view. Past meeting actions are summarized in Appendix A, followed by a Bibliography.

Shepherd: Traugott Koch

SUMMARY (Tom)

In Bath, we will start by discussing first the possible implications of InfoURI on the very idea of setting up a DCMI registry. The following two documents have therefore been put into the main meeting packet:

<http://www2.elsevier.co.uk/~tony/info/info.html>

<http://dublincore.org/usage/meetings/2004/03/Weibel.InfoURI.Registry.pdf>

If we conclude that InfoURI will not meet the need we have long recognized, only then should we proceed to a discussion of the steps to be undertaken and processes by which a DCMI registration service would function. The main sources for that discussion are the "Overview of Next Steps" (below) and the following two documents in the supplementary packet:

<http://www.lub.lu.se/~traugott/drafts/vocab-scheme-Jan04.html>

<http://www.lub.lu.se/~traugott/drafts/vocab-guide6.html>

OVERVIEW OF NEXT STEPS

In Seattle, the UB agreed to proceed with the fast-track system to "register" controlled vocabularies as Vocabulary Encoding Schemes (VESes)(see Appendix point A.8). This entails:

1. Finalize the Web tool
 - 1.1 Work with Harry to improve interface and functionality
2. Put into place the necessary documentation
 - 2.1 Update "Guidelines for Registration"
 - 2.2 DCMI namespace policy
 - 2.2.1 Modify policy, adding "<http://purl.org/dc/schemes>"
 - 2.2.2 Duplication of legacy URIs in the new namespace
 - 2.3 Process for merging of "registry" output into raw UB data
 - 2.4 Formulate and document a "good-neighbor" policy
 - 2.5 Reflect a "good neighbor policy" in documentation and schemas
 - 2.6 Set up and clarify use of JISCMAIL archive for audit trail

- 2.7 Clarify criteria and processes for vetting proposals
3. Approve an initial set of encoding schemes
4. Manage the above tasks and represent the project to the public
 - 4.1 Create a one-stop Web page for the Registration project
 - 4.2 Clarify who will actually do what
 - 4.3 Assume overall project-management responsibility
5. Plan a workshop (out of UB scope per se)

NEXT STEPS IN DETAIL

1. Finalize the Web tool

- 1.1 TASK (Traugott): As of 2004-01-04, Traugott has updated his summary of development work needed on the Web-based registration tool and will follow up with Harry and Stu to (hopefully) complete in January-February. See <http://www.lub.lu.se/~traugott/drafts/vocab-scheme-Jan04.html> and <http://wip.dublincore.org/schemes/index.html>. (See also Appendix points A.6 and A.14.)

2. Put into place the necessary documentation

2.1 "Guidelines for registration of Vocabulary Encoding Schemes"

TASK (Traugott): As of 2004-01-10, Traugott has updated [GUIDELINES] and will post a draft to DC-USAGE for comment. See <http://www.lub.lu.se/~traugott/drafts/vocab-guide6.html>.

NOTE: We should look closely at the guidelines it provides on forming and proposing a "Name" for a vocabulary -- for example, appending a language suffix such as "-fr", etcetera. I believe there are some unresolved issues here with regard to the use of "date-stamped" URIs or of reflecting the numbers of specific versions of vocabularies. After talking with Traugott, I believe this was the intention behind the Seattle Action Item 13 for Traugott to draft "a document setting out guidelines for the creation of URIs for encoding schemes" (see A.12 below).

2.2 DCMI Namespace Policy

According to the policy as it currently stands, all new Encoding Schemes go into the <http://purl.org/dc/terms/>. However, now that we expect the creation of many new encoding schemes rather quickly and according to a new fast-track procedure, we need a new namespace for encoding schemes (i.e., <http://purl.org/dc/schemes/>). This change and addition to the namespace policy is on the critical path -- not just for going into production to register encoding schemes but even before we can

finalize the related texts and guidelines.

This breaks down into the following tasks:

2.2.1 TASK (who?): Modify the Namespace Policy
[DCMI-NAMESPACE] as follows:

- a name for the new namespace;
- clarify whether any aspect of the existing policy needs to be modified with respect to encoding schemes that are approved according to the fast-track procedure;
- shepherd the draft through online DC-USAGE discussion;
- liaise with Makx for Directorate approval;
- present the results (hopefully completed?) in Bath.

2.2.2 TASK (who?): Duplication of legacy URIs under
"<http://purl.org/dc/terms>" in the new namespace
"<http://purl.org/dc/schemes>". This decision
(and its implications) needs to be implemented
and documented:

- gather from the Directorate, Tom, Roland, and mailing lists any existing documentation of past discussions and edit them into a one-page clarification;
- include documentation of how the equivalence would be declared in the formal RDF term declarations;
- liaise with Tom (for the raw UB data in XML) and Harry (for the generated RDF schemas and Web pages) about declaring and documenting the equivalence;
- after consulting with the Directorate on process, shepherd the one-pager through list discussion, approval, and posting on the Web, ideally in time for the Bath meeting.

2.3 TASK (Tom): Merging of "registry" output into raw
UB data (see also A.7).

According to our current model, information about
VESes will be recorded in two places:

- in the back-end database to the Web tool.
This database will include administrative information
-- e.g., who submitted a proposal and when.
The database will periodically output a listing
of new VESes in a form that can automatically
be merged into the raw UB data (currently in XML).

NOTE: This functionality is on the critical path
to using the Web tool -- if we cannot merge data
from the Web tool into the system of XSLT scripts
currently used to generate updated Web pages
and RDF schemas of the DCMI terms automatically,

I do not currently see a way to manage updates to our documentation with a reasonable and sustainable level of effort. If we cannot automate the workflow from registration through to final publication so as to sustain a reasonable and efficient throughput, we should not really embark on this adventure to begin with.

- in the formal RDF term declarations and related Web pages generated from the raw UB data (which, in turn, is automatically generated from the database above).

This entails the following:

- liaison with Traugott to clarify whether any attributes need to be exported beyond those already used to describe existing encoding schemes;
- decide in discussion on DC-USAGE or in Bath at what frequency terms documents should be updated to show new VESes (this entails liaison with maintainers of the DCMI Registry about the availability of new terms in the registry database);
- liaise with Harry and the Web Team to clarify how often and by what workflow descriptions of VESes will be exported from the Web-tool database and incorporated into the raw UB term data;
- verify that the workflow is completed and functions as intended for generating updated term documentation;
- update the "schema" of attributes used to describe encoding schemes.

2.4 TASK (who???): formulate a policy for pointing to non-DCMI URIs created for vocabularies to which DCMI URIs have already been assigned (sometimes called a "good-neighbor" policy) (see also A.11). This entails the following:

- describing a "DCMI philosophy" (or etiquette) for pointing to non-DCMI URIs (e.g., do we "recommend" one over the other or simply point?);
- clarifying exactly where the non-DCMI URI will be recorded, and how that URI will be reflected in the DCMI Registry and exported for merging into the raw UB data used for generating RDF schemas and Web pages (see also 2.3).

2.5 TASK (who???): clarify and document exactly how the "good neighbor policy" (2.4) will be reflected in the RDF schema and in the terms Web pages. (See also A.4 and A.5). This entails:

- clarifying with Roland -- who I believe had a solution

for this that was discussed and for which notes exist somewhere... -- exactly how the cross-reference would be expressed in RDF;

- clarifying with Tom exactly what relevant field or fields will be automatically exported as a basis for generating Web pages and RDF schemas;
- clarifying with Tom exactly how that additional information should appear in the Web documents;
- liaising with Harry to ensure that the additional RDF assertions will be generated from the raw UB data.

2.6 TASK (Traugott): set up a JISCMAIL list to use as an archive of (all?) actions taken in the fast-track procedure (see also A.3 below). This entails:

- clarifying exactly who needs to do what to verify and evaluate a submission, what follow-up actions they need to take, what needs to be documented and where;
- providing a user-friendly list of actions and responsibilities for inclusion in the DCMI Usage Board process [UB-PROCESS] or in another appropriate document.

2.7 TASK (Diane and Stuart?): Documentation of process for reviewers of fast-track proposals. This should expand on Section 5 of [UB-PROCESS] clarifying exactly who is expected to do what in order to reach a fast-track decision about a proposed VES. This could take a list of such actions and responsibilities from 2.6. (See also point A.1 below.)

3. Approve an initial set of encoding schemes

When all of the above is in place, we somehow need to move this forward to the actual creation of VESes, especially for the initial set of known important vocabularies in the pipeline (see also point A.10).

Note that the restriction that proposals be accepted only from the owners and maintainers of vocabularies is slightly at odds with the notion that we would begin with "known important vocabularies" that have long been in the pipeline. In other words, we should decide whether to go ahead with the registration of some vocabularies on our own initiative, and if so, who will take that initiative and to what extent will those volunteers be expected to obtain permission from the owner/maintainers of the vocabularies in question.

Deciding how to proceed on this would be the responsibility of the overall project manager for Vocabulary Registration, in consultation with the Usage Board.

4. Manage the above tasks and representing the project to the public

4.1 TASK (Traugott?): Create a Web page describing DCMI's project for registering VESes along with a one-stop annotated set of pointers to all relevant resources (such as [GUIDELINES], [UB-PROCESS], [NAMESPACE POLICY], DCMI terms documentation, and the DCMI Registry. This entails:

- taking as input from 2.4 a "good-neighbor policy";
- explaining overall philosophy, policy, and intentions (perhaps this should be where we explain that in the first instance, registration will be on the initiative of scheme owners -- i.e., the maintainer of the vocabulary in question does the registering by proposing an acronym for use in a DCMI-maintained URI and optionally supplying an owner-maintained URI for the same;
- creating short versions of the above for posting as announcements to DC-GENERAL.

Such explanatory text could be folded into the start page for the Web tool [WEB-TOOL], which currently provides user guidance on using the tool, which would require coordination with Harry on editing a single Web page. Or the information could be split out into a separate document -- whatever seems friendliest for users. Either way, we should ensure that all Web pages of relevance to the project of registering encoding schemes be fully cross-referenced with all of the other relevant Web pages.

4.2 TASK (Traugott?): Clarify who will actually do what. This task involves defining what needs to be done (see also 2.7), but also who is going to actually do it and the process for managing the people who are doing it. Note that there has been considerable discussion between Ithaca and Seattle of a "reasonable" role for Usage Board members in processing proposals. However, experience in last year's trial run and with AskDCMI this year strongly suggest that asking UB members to claim proposals to vet will be problematic.

4.3 TASK (Traugott): In Seattle, Traugott volunteered to assume overall responsibility for the Registration issue. From my point of view, I see this as involving, among other things:

- coordinating and motivating the people who will check, evaluate, and approve the proposals for VESes;
- making announcements to DC-GENERAL;

- coordinating with Tom about responsibilities to avoid unnecessary redundancies in tracking issues.

5. Plan a workshop

Note: As of December 2003, Tom, Traugott, Stu Weibel, Diane, and Stuart Sutton are discussing the possibility of holding a workshop to coordinate better between DCMI and other communities interested in the general problem of identifying and citing controlled vocabularies. While it is related to the process of Vocabulary Encoding Scheme Registration discussed here, the workshop issue is not further covered below. Note that this venue would be the appropriate place to discuss a possible use of IETF's InfoURI (Appendix point A.9).

APPENDIX A: Recent decisions and action items

2003-06-17: Ithaca meeting

2003-09-28: Seattle meeting

A.1 ITHACA ACTION ITEM (Diane and Stuart): Make necessary updates to the UB Process document.

A.2 ITHACA ACTION ITEM (Tom): Ask Directorate to advise UB on their position in regard to the legal issues surrounding encoding scheme registration. [Note: this has been done, and the opinion is that we can go ahead as long as we articulate our policies clearly.]

A.3 ITHACA ACTION ITEM (Traugott): In the interest of maintaining an audit trail all emails between UB/DCMI and the scheme owner/maintainer to be sent to a closed Jiscmail DC list for permanent retention; Traugott to ask Paul Miller.

A.4 ITHACA DECISION (according to Traugott): DCMI assigns a URI and lists URIs created by vocabulary owners. If this is the case, a "same as" relationship between the two is declared.

A.5 ITHACA ACTION ITEM (Tom and Diane): Draft new document that explains such things as 'good neighbour' policy, what the process involves, the aims of the registration service, registration help, etc.

A.6 ITHACA ACTION ITEM (Traugott): List of priorities for enhancements/changes to the scheme registration tool to be submitted to Makx.

A.7 ITHACA ACTION ITEM (Tom): Document the XML output formats that are wanted from the registration tool.

- A.8 SEATTLE DECISION: UB agrees that it must proceed with Vocabulary Encoding Scheme registration.
- A.9 SEATTLE DECISION: UB will consider adopting IETF's InfoURI if and when this is finalized.
- A.10 SEATTLE DECISION: The UB is to aim for implementation of the registry by January or February 2004.
- A.11 SEATTLE DECISION: Where schemes have existing URIs such schemes should be registered at the request of implementers.
- A.12 SEATTLE ACTION ITEM 13 (Traugott): Draft a document setting out guidelines for the creation of URIs for encoding schemes.
- A.13 SEATTLE ACTION ITEM 14 (Tom): Tom to remind Stu to seek advice from OCLC lawyers regarding legal issues surrounding encoding scheme registration.
- A.14 SEATTLE ACTION ITEM 15 (Traugott): Questions to be posed to Harry, as part of request for updates and changes, regarding authentication and whether existing authentication facility is robust enough.

BIBLIOGRAPHY

- [GUIDELINES] Guidelines for Vocabulary and Encoding Scheme Qualifiers,
<http://dublincore.org/usage/documents/vocabulary-guidelines/>
- [NAMESPACE-POLICY] DCMI Namespace Policy,
<http://dublincore.org/documents/dcml-namespae/>.
- [DCMI-PRINCIPLES] DCMI Grammatical Principles,
<http://dublincore.org/usage/documents/principles/>.
- [UB-PROCESS] DCMI Usage Board Process,
<http://dublincore.org/usage/documents/process/>
- [WEB-TOOL] Vocabulary Scheme Registration [a Web-based tool],
<http://wip.dublincore.org/schemes/index.html>.

Title: Namespace Registration Issues
Author: Stu Weibel
Date: 2004-03-12

I. Introduction

Registration and maintenance of terminology namespaces is a key requirement for effective deployment of vocabularies on the Web, for metadata in particular and for Semantic Web activities in general.

This requirement has been recognized within the DCMI community for a number of years, and this recognition has motivated the development of a namespace registration facility within our community, to the point of the development of actual software and procedures to support namespace registration. We have not deployed this infrastructure to date

II. Impediments to namespace registration:

The fact that DCMI has not deployed this infrastructure is the result of the following factors:

1. Launching, testing, and operating this infrastructure has required a significant amount of focussed attention on the part of DCMI administrators, developers, and Usage Board members to assure that the technology, the policy, and the administrative apparatus is in place and working as intended. The coordinated effort necessary to achieve this has not been available, though significant effort has been expended at various times toward meeting each of the three facets.

2. Partly as a result of the efforts that **have** been made, it has become apparent that the problem is more difficult than was first imagined. I think it is significant that DCMI is perhaps the first Web initiative that has tried to cope with these issues in a systematic way. That we have backed away from full deployment on a couple of occasions reflects an appropriate degree of conservatism and caution (as well as the vagaries of coordinating a distributed effort of great complexity). Once begun, this task cannot be abandoned without significant penalty for users who adopt it.

3. It has become evident that DCMI's problem is a subset of a larger problem of the incompleteness of the "architecture of identity" in Web architecture. My belief is that it is a risky and ill advised for DCMI to deploy a local solution to a more global problem. Still, the need is there, and the question remains as to how to meet it.

Possible solutions:

1. Deploy the namespace registration facility that DCMI has developed.

This is risky, but we're pioneers, and we've taken greater risks. The more important factor that mitigates against it is that we cannot resource the activity with confidence, and there is no imminent likelihood that this will improve. If I am wrong about this, at this point in the discussion someone will be stepping forward with assured resources and committment to manage the task.

2. Adopt the "info" URI registration mechanism for namespace registration

This path has the virtue of associating our problem with others who share it, and hence with greater likelihood that a broader community and institutional commitment will emerge to support it. The prototype is in place and available, and a number of namespaces have been registered in it to date.

Still, prototypes are not production systems, and success is not assured. There has been substantial pushback from within the URI community on the prospects for "info" as an endorsed part of the URI architecture, and my own best guess at this time is that it will not become an IETF standard. It is, however, part of the OpenURL standard, and enthusiasm from a number of other potential adopters may render the lack of IETF adoption less important.

It is unclear as to whether "info" functionality is as closely tailored to the functional requirements for the management of terminology as we would like it. It is probably as good as we would achieve in a first round of our own registration protocol, but we won't have as much control over change.

3. Develop (or participate in the development of) terminology-specific identity schemes that help to fill in the missing components of the Web "Identity Architecture". This is a substantial challenge and will require a lot of IETF and W3C politicking. It is a middle term, not a short term, path. I expect to be involved in some such effort, possibly as part of a grant proposal, irrespective of the course DCMI takes.

4. Do nothing beyond encouraging namespace managers to declare and maintain namespaces for their terminologies in a way that is likely to be consistent. This is actually a respectable position -- low risk, and a suitable policy white paper on the subject might have significant effect.

Hybrids of the above solutions are also possible.

About "*info*" URIs

Frequently Asked Questions

This version dated February 28, 2004.

(The latest version of this FAQ is always available from the **info** website: <<http://info-uri.info/>>.)

Feedback on this FAQ should be directed to <<mailto:tony@tonyhammond.net>>.

Disclaimer: This FAQ is provided for information purposes only and should be treated as a work in progress.

The Questions

- A. [**Background \(I\)**](#)
 - B. [**Background \(II\)**](#)
 - C. [**The *info* URI and Other URI Schemes**](#)
 - D. [**The *info* Registry**](#)
 - E. [**Syntax Considerations**](#)
 - F. [**Examples of Usage**](#)
 - G. [**Comparing *info* URIs**](#)
 - H. [**Historical Perspective**](#)
-

A. **Background (I)** <<

1. [What is a URI scheme?](#)
2. [Why was it necessary to develop the **info** URI scheme?](#)
3. [What is the motivation behind the **info** URI scheme?](#)
4. [Does the **info** URI scheme compete with other URI schemes?](#)
5. [Will the **info** URI scheme break Web applications?](#)
6. [Where is the latest specification for **info**?](#)
7. [Who is developing the **info** URI scheme?](#)
8. [Why is it called **info**?](#)
9. [What is the current status of the **info** URI scheme?](#)

B. **Background (II)** <<

1. [What is the value proposition of the **info** URI scheme?](#)
2. [What is unique about the **info** URI scheme?](#)
3. [And just what is a non-dereferenceable URI?](#)
4. [So, why are **info** URIs non-dereferenceable?](#)
5. [Why identify information assets with URIs anyway?](#)
6. [Can anyone use their namespaces under **info**?](#)
7. [Who is entitled to register under **info**?](#)
8. [Which namespaces are eligible for registration under **info**?](#)
9. [Does registration under **info** limit any future URI registration?](#)

C. **The **info** URI and Other URI Schemes** <<

1. [What considerations are there regarding URIs?](#)
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-

The Answers

A. Background (I)

1. What is a URI scheme? <<

A Uniform Resource Identifier (URI) provides a simple and extensible means for identifying a resource within the Web global information architecture. Each URI begins with a scheme name that refers to a specification for assigning identifiers within that scheme. As such, the URI syntax is a federated and extensible naming system wherein each scheme's specification may further restrict the syntax and semantics of identifiers using that scheme.

2. Why was it necessary to develop the **info** URI scheme? <<

The **info** URI scheme is being developed from within the library and publishing communities to expedite the referencing by URIs of information assets that have identifiers in public namespaces but have no representation within the URI allocation.

For various reasons (both cultural and technical) the creation and registration of a new URI scheme or URN namespace to support a given public namespace under the URI allocation may not have been attempted by the authority for that namespace. It is precisely to facilitate the representation of these public namespaces within the URI allocation that the **info** URI scheme has been developed.

3. What is the motivation behind the *info* URI scheme? <<

The motivation behind developing the *info* URI scheme is to allow legacy identification systems to become part of the Web global information architecture so that the information assets they identify can be referenced by Web-based description technologies such as XLink, RDF or Topic Maps. Note that we are concerned with "information assets", not "digital assets" *per se* - the information assets may be variously digital, physical or conceptual.

4. Does the *info* URI scheme compete with other URI schemes? <<

No. The *info* URI scheme does not compete with independent URI registrations but rather cooperates with independent URI registrations by providing a lightweight early URI registration mechanism to support referencing of public information assets ahead of any possible subsequent URI scheme or URN namespace application. Note that in the majority of cases no subsequent URI scheme or URN namespace application will be made by a [Namespace Authority](#) as the *info* resource identifier alone will be sufficient in providing an identification service. Only if additional services are required would a Namespace Authority seek to register independently.

5. Will the *info* URI scheme break Web applications? <<

No. *info* URIs support no operations beyond representation of identity and comparison with other *info* URIs, and therefore any Web applications that can recognize a URI within a URI usage context should not break with this additional URI scheme. *info* URIs are conformant to the general syntax requirements of URIs as laid out in [RFC 2396](#) (and as revised in [RFC 2396bis](#)) and as such are readily parseable and recognizable as legitimate URI strings.

6. Where is the latest specification for *info*? <<

The latest specification for *info* is the published Internet-Draft: "[draft-vandesompele-info-uri-01.txt](#)". (This revision supercedes the earlier draft "draft-vandesompele-info-uri-00.txt".)

7. Who is developing the *info* URI scheme? <<

The *info* URI scheme has been developed by members of the library and publishing communities working together under the auspices of ANSI/NISO.

Representing the library communities are Herbert Van de Sompel of [LANL](#) (Los Alamos National Laboratory) Research Library and Stu Weibel of [OCLC](#) (Online Computer Library Center), while representing the publishing communities are Tony Hammond formerly of [Elsevier](#) and Eamonn Neylon of [Manifest Solutions](#), a publishing technology consultancy.

[NISO](#), the National Information Standards Organization, is a standards developing organization accredited to the International Organization for Standards (ISO) by the American National Standards Institute (ANSI), the sole US representative to ISO.

8. Why is it called *info*? <<

It is called *info* as a shorthand for the information asset that it references by means of a URI.

Another reading of **info** is that **info** exists solely to provide information about an information asset, the information disclosed being restricted to identity alone. Richer sets of information, such as authority metadata, would require resolution services which are not supported by **info** and hence would require a corresponding independent URI scheme or URN namespace application.

9. What is the current status of the **info** URI scheme? <<

The Internet-Draft "draft-vandesompele-info-uri-00.txt" for the **info** URI scheme was first announced September 30th, 2003. A revision to this draft "[draft-vandesompele-info-uri-01.txt](#)" was subsequently announced December 6th, 2003.

The **info** URI scheme has already been fully embraced by one Web description technology: the OpenURL Framework.

B. Background (II)

1. What is the value proposition of the **info** URI scheme? <<

The value proposition of **info** URIs is to facilitate Namespace Authorities in representing identifiers from their namespaces in URI form and so to make those identifiers available for public use in Web-based description technologies independently of any Web infrastructure considerations on behalf of the Namespace Authorities.

As such, **info** URIs are designed to be simple to deploy, both in terms of namespace registration and in the creation and general usage of these identifiers. These simplifications are fully in line with the **info** URI remit of providing a lightweight URI registration mechanism to facilitate the referencing of information assets under the URI allocation.

2. What is unique about the **info** URI scheme? <<

The unique aspect of **info** URIs is that **info** URIs are not dereferenceable. The sole purpose of **info** is the disclosure of the identity of an information asset from a public namespace.

3. And just what is a non-dereferenceable URI? <<

A non-dereferenceable URI is one that has no representations associated with the resource that it identifies, and as such no retrieval actions can be performed. In short, a user "click" event on such a URI (e.g. a user clicking on a hyperlink in a browser) would yield no result.

4. So, why are **info** URIs non-dereferenceable? <<

info is focused exclusively on supporting identity. As such, this restriction on the functionality of **info** URIs to identity alone leads to the following considerations:

- Dramatically simplifies **info** operational behaviours, and consequently the operational expectations of an **info** URI, which are limited to URI string presentation and comparison.
- Avoids overhead in new **info** namespace registrations by rejecting any possibility of resolution mechanisms.

(Note that public namespaces may have functionality associated with them which is accessible on the Internet, but **info** does not provide an access route into this functionality. Applications wishing to tap into this functionality must resort to out-of-band mechanisms.)

- Avoids overhead in the management of a resolution infrastructure and maintenance of resolution targets for **info** URIs.
- Requires that a Namespace Authority make an independent URI scheme or URN namespace application if services or other functionalities are required (e.g. authority metadata).
- Does not run foul of the mantra "*many URI schemes considered harmful*" as this is primarily concerned with the need for applications to support resolution mechanisms.

Note that this stance on non-dereference is in contrast to other URI schemes which are generally dereferenceable (or otherwise actionable by applications), even if not all examples within a particular scheme are actually dereferenceable. This holds true for both location-dependent URIs (e.g. HTTP URIs) as well as for location-independent URIs (e.g. URN URIs).

5. **Why identify information assets with URIs anyway?** <<

The real need for presenting legacy identifiers in URI form is that many Web-based description technologies (e.g. XLink, RDF, Topic Maps, OpenURL) recognize URIs as the only form of globally unique identifier.

Besides this, the URI naming architecture offers to identifiers a common base syntax, a common base semantics, and a common nomenclature for talking about identifier constructs (e.g. URIs reference "resources" while generally identifiers for information assets will reference diverse kinds of things - objects, records, etc.). The URI thus provides a uniform (and unifying) naming architecture for identifiers.

The [examples](#) FAQ included here might afford some insight into the desirability of rendering identifiers as URIs, cf. the identifiers in their native form and as rendered in URI form.

6. **Can anyone use their namespaces under *info*?** <<

No. Namespaces used under **info** must be registered in the **info** Registry.

7. **Who is entitled to register under *info*?** <<

A Namespace Authority is entitled to register a recognized namespace after suitable review.

A Namespace Authority is the body that owns and manages a public namespace.

8. **Which namespaces are eligible for registration under *info*?** <<

The namespaces eligible for registration under **info** will typically be those of interest to the publishing, library and media communities. These communities necessarily have a very wide purview. Candidate namespaces will be those that are for public use only and that are not part of the URI allocation. Non-public namespaces are not eligible for registration.

For all registered namespaces the reader is advised to consult the **info** [Registry](#). The following registered namespaces are typical:

- **bibcodes** - NASA Astrophysics Data System Bibcodes (~ 3.5m)
- **doi** - International DOI Foundation Digital Object Identifiers (~ 11m)
- **lccn** - Library of Congress Control Numbers (~ 12m)
- **oclcnum** - Online Computer Library Center (OCLC) Numbers (~ 52m)
- **ofi** - NISO OpenURL Framework Identifiers (~ 40)
- **pmid** - National Library of Medicine PubMed Identifiers (~ 10m)
- **sid** - Source Identifiers (as used by the OpenURL Framework)

(Note: To put those numbers into perspective, as of this writing the accumulated totals represent some 2.6% of [Google](#) space.)

9. Does registration under **info** limit any future URI registration? <<

No. On the contrary, by occupying its own toplevel URI scheme, **info** does not restrict a Namespace Authority from proceeding with registration under any portion of the URI allocation either as a toplevel URI scheme or as a URN namespace. In particular, an independent **info** URI scheme does not interfere with any of the existing URI namespaces which have their own defined semantics.

C. Comparison with Other URI Schemes

1. What considerations are there regarding URIs? <<

Some general considerations regarding URIs are:

- *Generality* - URI schemes are divided between generality and speciality as regards their reliance upon an Internet transport protocol.
- *Location dependence* - URI schemes are variously categorized as location-dependent or location-independent with respect to whether the URI contains a network authority component.
- *Character set* - The set of allowable characters within a URI is a subset of ASCII. Certain ASCII characters are excluded, while others are reserved within various contexts within the URI string according to the URI scheme in question. Excluded and reserved characters must be %-escaped as described in [RFC 2396](#).

The wider the character set that a given URI scheme supports, the more easily it can function as a substrate for legacy identifiers.

2. Why not just use HTTP URIs? <<

HTTP URIs are Internet protocol elements for referencing hypertext documents which can be retrieved from a network authority using the HTTP transfer protocol. There is a common

expectation that HTTP URIs can be dereferenced.

The following considerations hold in respect of HTTP URIs:

- HTTP URIs are inappropriate for **info** namespaces because HTTP URIs provide:
 - network transport
 - network path (discovery obstacle)
 - strong dereference expectation
 - poor branding (network path overhead)
 - A transport mechanism adds meaningless semantic overhead to nondereferencable URIs.
 - Absolute HTTP URIs include a network path (comprised of an authority component and a hierarchical path component). **info** namespaces may not have (or may not make) any network authority available. A central network authority would also be inappropriate as this would introduce a dependency between a third party namespace and a central network authority.
- Further, were **info** namespaces to make a network authority available they would each have to publish the particular hierarchical path syntax employed by that network authority. A central network authority would mitigate this requirement by providing a single path syntax, although it would still need to publish that path syntax.
- Use of HTTP URIs might only encourage the provisioning of resource representations (e.g. metadata descriptions) which could conflict with representations provided under any possible future URI registration on the part of the Namespace Authority. Further, if HTTP URIs were used to provide resource representations, it must be recognized that managing the namespace and infrastructure is a costly enterprise that may not be appropriate or cost effective in a given business context.
 - The network path of HTTP URIs adds unnecessary string overhead and consequent loss of branding for legacy identifiers.

3. Well then, why not just use URN URIs? <<

URN URIs are Internet protocol elements for referencing resources using persistent and location-independent identifiers, representations of which may be retrieved using various resolution mechanisms. There is a common expectation that URN URIs can be dereferenced, once suitable resolution mechanisms are defined (e.g. DDDS or other proprietary mechanisms). Indeed, [RFC 1737](#) goes so far as to make a strong recommendation that *"there be a mapping between the names generated by each naming authority and URLs"*.

Use of URN URIs requires a URN namespace registration. An informal URN namespace is of limited utility because its numerical nature obliterates any branding or name recognition and effectively renders the namespace anonymous. A formal URN namespace, on the other hand, would require a more substantial review than a corresponding registration under the **info** Registry. Based on experience with the initial **info** namespace target group, it is unlikely that many Namespace Authorities will proceed with independent applications as the burden of

registering a URN namespace is high, especially in the case of organizations that are not strongly steeped in technology.

One particular impediment in applying for a URN namespace for **info** is that this would compromise any possible future URN namespace registration that a Namespace Authority might seek to make in respect of considerations of persistence, location independence and/or dereference to resource representations.

The following considerations hold in respect of URN URIs:

- URN URIs are inappropriate for **info** namespaces because URN URIs provide:
 - claims of persistence of resource identifiers
 - dereference expectation
 - no delegated naming responsibility
 - restricted syntax (no hierarchy)
 - no support for fragment identifiers
 - poor branding and extra semantic layer (additional namespace tier)
- **info** URIs make no claims on persistence. **info** URIs may be location independent and in consequence may enjoy some degree of persistence, but **info** does not make these assertions. Instead **info** is neutral with respect to identifier persistence.
- Use of URN URIs might only encourage the provisioning of resource representations (e.g. metadata descriptions) which could conflict with representations provided under any possible future URI registration on the part of the Namespace Authority. Further, if URN URIs were used to provide resource representations, it must be recognized that managing the namespace and infrastructure is a costly enterprise that may not be appropriate or cost effective in a given business context.
- For **info** to operate as a URN namespace would require that **info** be constituted as a delegated naming authority. It is not clear that a URN namespace would be an appropriate choice for such naming authority delegation.
- Syntactically, URN URIs do not support hierarchy (in URI syntax hierarchy proceeds through the "/" character) and are thus more difficult to use with legacy identifiers because of their restricted character set. Other characters reserved by URN URIs, but allowed by **info** URIs are "&" and "~".

For a demonstration in the difficulty of mapping legacy identifiers the reader is referred to [RFC 3151](#) which provides a set of complex transcriptions for mapping SGML formal public identifiers onto the URN URI syntax. Formal public identifiers would have been more readily presented under the more expressive **info** syntax.

- Additionally, URN URIs do not support fragment identifiers thus not allowing the identification of secondary resources with respect to a primary resource. This is a practical requirement that **info** supports.
- With **info** as a URN namespace, the **info** namespaces would then become sub-sub-

namespaces, with a consequent loss of branding. This would also introduce three tiers of semantic layers for an implementation to navigate.

4. Are there any other URI schemes that might be considered? <<

Two other generic URI schemes that might be considered are DATA URIs and TAG URIs.

5. So, why not use DATA URIs? <<

DATA URIs are Internet protocol elements for the referencing of inline resources, i.e. the reference is an immediate address.

The following considerations hold in respect of DATA URIs:

- DATA URIs are inappropriate for **info** namespaces because DATA URIs provide:
 - no authority mechanism (network authority or registry)
 - no globally unique identifiers
- The DATA URI provides a data resource inline without reference to any network authority or registry. There is thus no record for the namespaces that would need to be supported.
- Without an authority there can be no guarantee that DATA URIs are globally unique. This guarantee of uniqueness is the prime motivator for the **info** URI scheme.

6. Or else, why not use TAG URIs? <<

TAG URIs are (proposed) Internet protocol elements for referencing resources that are globally unique across network space and time. (See the last [Internet-Draft](#), now expired, for further details.) The basic premise is that a specific identifier is prefixed with a TAG authority which is constructed from a fully qualified domain name (either used alone or embedded within an email address) and a date in ISO 8601 format. The TAG authority should thus guarantee that the TAG URI is globally unique. TAG URIs may or may not have resolution mechanisms, although those mechanisms are not specified.

The following considerations hold in respect of TAG URIs:

- TAG URIs are inappropriate for **info** namespaces because TAG URIs provide:
 - network authority (discovery obstacle)
 - redundant date component (requires adoption of a date convention)
 - dereference expectation
 - poor branding (string overhead from network authority and date components)
 - unclear semantics (URI and/or URN namespace?)
 - no IANA registration
- TAG URIs include a network authority component. **info** namespaces may not have (or may not make) any network authority available. A central network authority would also be

inappropriate as this would introduce a dependency between a third party namespace and a central network authority. Further, the form of disclosing the network authority component (either as an independent string or embedded within an email address) would need to be published.

- Another difficulty is that the TAG URI is designed for minting new identifiers whereas **info** is purely concerned with proxying legacy identifiers (i.e. already minted) onto the URI namespace. Since there is a date component in the TAG URI the only means of making this work as a basis for supporting legacy identifiers would be to adopt some convention whereby a known date would be used for all the identifiers (which obviously obviates the need for a date component).
- Use of TAG URIs might only encourage the provisioning of resource representations (e.g. metadata descriptions) which could conflict with representations provided under any possible future URI registration on the part of the Namespace Authority. Further, if TAG URIs were used to provide resource representations, it must be recognized that managing the namespace and infrastructure is a costly enterprise that may not be appropriate or cost effective in a given business context.
- The TAG authority of TAG URIs adds unnecessary string overhead and consequent loss of branding for legacy identifiers.
- It is unclear whether TAG URIs should be regarded as location-dependent or location-independent. The Internet-Draft makes a dual application for TAG as a toplevel URI scheme, as well as a URN namespace.
- At the current time the TAG URI application has not been approved for publication under the IANA registry. The Internet-Draft is now expired.

D. The **info** Registry

1. What is the **info** Registry? <<

The **info** Registry provides a mechanism for the registration of public namespaces that are used for the identification of information assets, and that are not referenceable within the URI allocation.

2. Where is the **info** Registry located? <<

The **info** Registry is located on the **info** website at: <<http://info-uri.info/registry/>>

3. Who maintains and operates the **info** Registry? <<

NISO is the Maintenance Agency for the **info** Registry and may delegate operational responsibility to an operating body, or Registry Operator.

4. What policies govern the **info** Registry? <<

A publicly articulated policy established under NISO governance will be made available on the **info** website <<http://info-uri.info/>>. The **info** Registry policy defines a review process for candidate namespaces and provides measures of quality control and suitability for entry of

namespaces

5. What is the registration procedure for an *info* namespace? <<

The *info* Registry provides an online registration form which solicits the relevant fields. This information will then be made available to a public approval process. Subject to a favourable review the namespace will be added to the *info* Registry.

6. What functionalities does the *info* Registry present? <<

The *info* Registry is publicly accessible and supports discovery (by both humans and machines) of:

- String literals identifying the namespaces.
- Names and contact information of Namespace Authorities.
- Syntax requirement for identifiers maintained in such namespaces.
- Normalization methodology for identifiers maintained in such namespaces.
- Ancillary documentation.

Disclosure of Registry records will be both in a human presentational form as well as in structured markup form for machine automation. Currently the Registry records are presented as XHTML documents but are also available as "oai_dc" XML records and are harvestable using the [OAI-PMH](#) protocol. Other presentations, such as RSS, may subsequently be made available.

E. Syntax Considerations

1. What are the syntax highlights for an *info* URI? <<

The *info* URI syntax is very straightforward:

```
"info:" namespace "/" identifier [ "#" fragment ]
```

where *namespace* is a registered namespace token, *identifier* is a %-escaped identifier, and *fragment* is an optional %-escaped identifier to a secondary resource.

The *info* URI syntax introduces certain restrictions on the generic URI syntax:

- No network authority component allowed.
- No query component allowed.
- No absolute path allowed (although relative paths are admitted).
- No relative URI references allowed.

2. What is the full syntax for an *info* URI? <<

The *info* URI syntax is generally conformant with the generic URI syntax defined in [RFC](#)

[2396](#). The only point of departure is to make use of the new "segment" production as generalized in [RFC 2396bis](#) the revision to RFC 2396.

This specification uses the Augmented Backus-Naur Form (ABNF) notation of [RFC 2234](#) to define the URI. The following core ABNF productions are used by this specification as defined by Section 6.1 of RFC 2234: ALPHA, DIGIT, HEXDIG.

The **info** URI syntax is presented in two parts. Part A contains productions specific to the **info** URI scheme:

```
info-URI      = info-scheme ":" info-identifier [ "#" fragment ]
info-scheme   = "info"
info-identifier = namespace "/" identifier
namespace     = scheme
identifier    = path-segments
```

Part B contains generic productions from the [RFC 2396](#) revision [RFC 2396bis](#), which are repeated here both for completeness and for reference.

```
scheme        = ALPHA *( ALPHA / DIGIT / "+" / "-" / "." )
path-segments = segment *( "/" segment )
segment       = *pchar
fragment      = *( pchar / "/" / "?" )
pchar         = unreserved / escaped / ";" /
               ":" / "@" / "&" / "=" / "+" / "$" / ","
unreserved    = ALPHA / DIGIT / mark
escaped       = "%" HEXDIG HEXDIG
mark          = "-" / "_" / "." / "!" / "~" / "*" / "'" /
```

```
" ( " / " ) "
```

3. What does the fragment signify for an *info* URI? <<

The fragment on an *info* URI signifies a secondary resource with respect to the primary resource identified by an absolute *info* URI without a fragment.

F. Examples of Usage

1. What do *info* URIs look like? <<

Some examples of (syntactically) valid *info* URIs are given below together with the identifiers they reference in their native form and the information assets that they identify:

- a. [Dewey Decimal Classification](#)
- b. [Library of Congress Control Number](#)
- c. [Serial Item and Contribution Identifier \(SICI\)](#)
- d. [Astrophysics Data System Bibcode](#)
- e. [PubMed Identifier](#)

a. Dewey Decimal Classification <<

Notes: `ddc` is the *info* namespace component for a Dewey Decimal Classification namespace and `22/eng//004.678` is the identifier component for an identifier of an information asset within that namespace.

```
info:ddc/22/eng//004.678
```

```
22/eng//004.678
```

```
Information Asset: Vocabulary Term
```

```
"Internet"
```

b. Library of Congress Control Number <<

Notes: **lccn** is the **info** namespace component for a Library of Congress Control Number namespace and **2002022641** is the identifier component for an identifier of an information asset within that namespace.

```
info:lccn/2002022641
```

```
2002022641
```

```
Information Asset: Book
```

```
"Newcomer, Eric. Understanding Web services: XML, WSDL,  
SOAP, and UDDI. Boston: Addison-Wesley, 2002."
```

c. Serial Item and Contribution Identifier (SICI) <<

Notes: **sici** is the **info** namespace component for a Serial Item and Contribution Identifier namespace and **0363-0277(19950315)120:5%3C%3E1.0.TX;2-V** is the identifier component for an identifier of an information asset in that namespace in escaped form, or in unescaped form **0363-0277(19950315)120:5<>1.0.TX;2-V**.

```
info:sici/0363-0277(19950315)120:5%3C%3E1.0.TX;2-V
```

```
0363-0277(19950315)120:5<>1.0.TX;2-V
```

```
Information Asset: Journal Issue
```

```
"Library Journal, Vol. 120, no. 5. March 15, 1995."
```

d. Astrophysics Data System Bibcode <<

Notes: **bibcode** is the **info** namespace component for an Astrophysics Data System bibcode namespace and **2003Icar..163..263Z** is the identifier component for an identifier of an information asset within that namespace.

info:bibcode/2003Icar..163..263Z

2003Icar..163..263Z

Information Asset: Abstract of Journal Article

"K. Zahnle, P. Schenk, H. Levison and L. Dones, Cratering rates in the outer Solar System, Icarus, 163 (2003) pp. 263-289."

e. PubMed Identifier <<

Notes: **pmid** is the **info** namespace component for a PubMed Identifier namespace and **12376099** is the identifier component for an identifier of an information asset within that namespace.

info:pmid/12376099

12376099

Information Asset: Abstract of Journal Article

"Wijesuriya SD, Bristow J, Miller WL. Localization and analysis of the principal promoter for human tenascin-X. Genomics. 2002 Oct;80(4):443-52."

2. How are **info** URIs used in Web applications? <<

Some examples of (syntactically) valid **info** URIs are given below as they would be used by applications:

a. **RDF Graph**

- b. [Topic Map](#)
- c. [Extended XLink](#)
- d. [RSS 1.0 Feed - ContextObject \(1\)](#)
- e. [OpenURL Link - ContextObject \(2\)](#)

a. RDF Graph [<<](#)

Notes: This RDF graph asserts a set of statements about the resource referenced by the URI `info:pii/s0888-7543(02)96852-7` (which identifies the Publisher Item Identifier `s0888-7543(02)96852-7`) using the [Dublin Core](#) vocabulary.

```
<rdf:Description about="info:pii/s0888-7543(02)96852-7">
  <dc:creator>Wijesuriya, S.D.</dc:creator>
  <dc:title>Localization and analysis of the principal promoter
    for human tenascin-X.</dc:title>
  <dc:identifier>info:doi/10.1006/geno.2002.6852</dc:identifier>
</rdf:Description>
```

b. Topic Map [<<](#)

Notes: This topic map entry defines the topic `internet` which has a public subject indicator as referenced by the URI `info:ddc/22/eng//004.678` (which identifies the Dewey Decimal Classification `Internet`) and a base name string of `Internet`.

```

<topic id="internet">
  <subjectIdentity>
    <subjectIndicatorRef xlink:href="info:ddc/22/eng//004.678" />
  </subjectIdentity>
  <baseName id="_id123">
    <baseNameString>Internet<baseNameString>
  </baseName>
</topic>

```

c. Extended XLink <<

Notes:

```

<ce:inter-refs>
  <ce:inter-refs-text id="interref8">Parts I and II</ce:inter-refs-text>
  <ce:inter-ref-end xlink:href="info:pii/S0167-8396(00)00009-1">
    <ce:inter-ref-title>Part I</ce:inter-ref-title>
  </ce:inter-ref-end>
  <ce:inter-ref-end xlink:href="info:pii/S0167-8396(00)00010-8">
    <ce:inter-ref-title>Part II</ce:inter-ref-title>
  </ce:inter-ref-end>
  <ce:inter-refs-link/>
</ce:inter-refs>

```

d. RSS 1.0 Feed - ContextObject (1) <<

Notes: The ContextObject shown here in an RSS feed is making use of the `mod_context` RSS 1.0 module. This is the same ContextObject as shown above in Example e) but with a different serialization.

```

<channel rdf:about="http://rss.example.com/">
  <title>My conetxt-sensitive RSS feed</title>
  <link>http://rss.example.com/"</link>

  <!-- ContextObject => { -->
  <ctx:ctx_ver>Z39.88-2004</ctx:ctx_ver>
  <ctx:rft_id>
    info:sici/0363-0277(19950315)120:5%3C%3E1.0.TX;2-V
  </ctx:rft_id>
  <ctx:req_id>
    mailto:a.n.other@example.net
  </ctx:req_id>
  <!-- } -->

  <items>
    <rdf:Seq>
      <rdf:li rdf:resource="http://rss.example.com/resource/1" />
      <rdf:li rdf:resource="http://rss.example.com/resource/2" />
    </rdf:Seq>
  </items>
</channel>

```

e. OpenURL Link - ContextObject (2) <<

Notes: The ContextObject is shown here on an OpenURL which is requesting context-sensitive services from the link resolver <http://link.example.com/resolver> for the referent entity identified by the URI `info:sici/0363-0277(19950315)120:5%3C%3E1.0.TX;2-V` (which identifies the SICI code `0363-0277(19950315)120:5<>1.0.TX;2-V`) and the requester entity identified by the URI `mailto:a.n.other@example.net`. The example OpenURL is text wrapped with whitespace for readability.

```

http://link.example.com/resolver?url_ver=Z39.88-2004
  &rft_id=info:sici/0363-0277(19950315)120:5%3C%3E1.0.TX;2-V
  &req_id=mailto:a.n.other@example.net

```

G. Comparing *info* URIs

1. Why is comparison of URIs important? <<

A prime motivator for comparison of URIs is to improve performance in retrieval operations by using caching mechanisms. A secondary motivator is to equivalence resource identifiers in Web descriptions of information structures to allow those structures to be normalized or merged with other like structures, e.g. the merging of two RDF graphs or the merging of two Topic Maps.

As far as ***info*** URIs are concerned there are no associated retrieval mechanisms, and the prime motivator for comparison of ***info*** URIs is to support the equivalencing of identifiers for information assets.

2. What steps should be taken to compare two *info* URIs? <<

info URIs only exist in absolute form - no relative URI forms are allowed. The normalization steps that should be applied are with respect to the three components of the URI: the "scheme" component, the "namespace" component and the "identifier" component.

The following generic normalization steps should be applied:

- a. Normalize the case of the "scheme" component to be lowercase.
- b. Normalize the case of the "namespace" component to be lowercase.
- c. Unescape all unreserved %-escaped characters in the "namespace" and "identifier" components.
- d. Normalize the case of any %-escaped characters in the "namespace" and "identifier" components to be uppercase.

The subsequent namespace-specific normalization steps may be applied:

- e. Normalize the case of the "identifier" component as per any rules that may be recorded in the Registry.
- f. Normalize any punctuation characters in the "identifier" component as per any rules that may be recorded in the Registry.

3. Is there an example of comparing *info* URIs? <<

Before comparing ***info*** URIs they should be normalized by applying the standard ***info*** normalization rules (lowercasing the "scheme" and "namespace" components, unescaping non-reserved characters and uppercasing any %-escaped characters that remain). In the example below four unnormalized forms (Step A), are reduced to normalized forms (Step B).

The Registry may be consulted for namespace-specific rules on case normalization (Step C) and punctuation normalization (Step D). If these namespace-specific rules are available ***info*** URIs may be reduced to a unique canonical form.

Step A - Unnormalized Forms

U1. **INFO:PII/S0888-7543(02)96852-7**
 U2. **info:PII/S0888754302968527**
 U3. **info:pii/S0888%2D7543%2802%2996852%2D7**
 U4. **info:pii/s0888-7543(02)96852-7**

Step B - Normalized Forms

N1. **info:pii/S0888-7543(02)96852-7**
 N2. **info:pii/S0888754302968527**
 N3. **info:pii/S0888-7543(02)96852-7**
 N4. **info:pii/s0888-7543(02)96852-7**

Step C - Normalized Forms - **pii** Case Rules Applied

N1,N3. **info:pii/S0888-7543(02)96852-7**
 N2. **info:pii/S0888754302968527**

Step D - Normalized Forms - **pii** Case & Punctuation Rules Applied

N2. **info:pii/S0888754302968527**

H. Historical Perspective

1. **What is the historical background to *info*?** <<

The effort to create the ***info*** URI scheme emerged from the ANSI/NISO process to standardize the OpenURL Framework for Context-Sensitive Services (see the [Part 1](#) and [Part 2](#) ballot documents), which requires the ability to describe resources by means of globally unique identifiers. The Draft Standard for Trial Use released for Public Comment introduced a "proprietary" naming architecture which allowed information assets to be referenced by means of widely used non-URI identifiers (e.g. National Library of Medicine PubMed identifiers, International DOI Foundation Digital Object Identifiers, NASA Astrophysics Data System Bibcodes, and others) which would be registered under the OpenURL Framework.

The Public Comment period started March 12th, 2003, when the first document was released. Early public feedback led to the decision to fundamentally revise the naming architecture, and to base all resource identification requirements within the OpenURL Framework on URIs alone. Because it was deemed unrealistic to expect that all namespaces required in the OpenURL Framework would be registered within the URI allocation by the respective Namespace Authorities, the ***info*** URI effort was launched.

2. What consultations preceded the development of *info*? <<

Development of the *info* URI scheme is being conducted under the auspices of NISO, together with consultation from the IETF and the W3C. A consultation document "[Bootstrapping the Web](#)" was prepared to analyse the options available.

On June 19th 2003, representatives from NISO, NISO Committee AX on OpenURL Framework standardization, the IETF, and the W3C met to discuss the requirements with respect to the identification of resources in the OpenURL Framework. More specifically, this group discussed how to handle the ORI and XRI Naming Environments introduced in the OpenURL Framework Draft Standard for Trial Use as an integral part of the Internet's URI environment. There was a general consensus to proceed with registration of a toplevel URI scheme and follow on meetings with representatives from the various communities were scheduled.

3. What were the subsequent steps in the development of *info*? <<

It was recognized that these resource identifiers would have a much wider applicability to many Web-based applications and it was decided to decouple this URI scheme from the OpenURL Framework and to name it *info*. An Internet-Draft was duly prepared and posted to the Internet-Drafts repository on September 30th, 2003. This was also widely communicated to various mailing lists and there was much discussion of the new *info* URI scheme on the public uri@w3.org mailing list.

4. What are the next steps in the development of *info*? <<

A revision of the *info* Internet-Draft "[draft-vandesompele-info-uri-01.txt](#)" was announced December 6th, 2003 which together with this FAQ will guide Web applications, such as OpenURL Framework implementations and others, in using the *info* URI scheme.

An early *info* [Registry](#) has also been established and namespace registrations are currently being processed. A Registry policy document is available as a work in progress from the *info* [website](#).

NISO Committee AX completed its work on the OpenURL Framework standardization at its last F2F meeting on October 27th/28th and handed over to NISO the final documents. It is expected that this draft standard will be successfully ballotted mid-Q1, 2004, and that it will be published as ANSI/NISO Z39.88-2004.

- DRAFT-

“info” URI Registry Policy

- DRAFT -

Stuart Weibel
OCLC Office of Research
2003-12-03

This document is a work in progress.
Comments and suggestions are welcome:
<<mailto:weibel@oclc.org>>

I. Introduction

This document outlines policies pertaining to the operation and management of the “info” URI Registry implemented in support of the “info” URI scheme described fully in [1].

The “info” URI Registry contains namespace declarations registered in support of resolution-independent identification of information assets with identifiers in public namespaces.

II. Glossary

The following terms have specific meanings in this document.

- **IDENTIFIER**
A literal character string which uniquely identifies an information resource within a namespace identified by a NAMESPACE TOKEN
- **INFO-SCHEME**
The *info:* token, delimiting the beginning of a complete “info” URI
- **INFO-IDENTIFIER**
The combination of a NAMESPACE TOKEN and IDENTIFIER
- **“info” URI**
A public identifier designed to reference information assets with identifiers in public namespaces that are not part of the resolvable URI allocation (the http: protocol). An “info” URI consists of the INFO-SCHEME token (*info:*) , and an INFO-IDENTIFIER
- **“info” URI REGISTRY OPERATOR**
The organization charged with the operational responsibility for administering and operating the “info” URI Registry
- **“info” URI Namespace Review List**
An open subscription mailing list designated for the purpose of reviewing proposed NAMESPACE TOKENs used in “info” URIs

- **NAMESPACE AUTHORITY**
An organization that owns or manages a public namespace
- **NAMESPACE TOKEN**
The registered token specifying the managed namespace in which an identifier is specified

III. Characteristics of a reserved NAMESPACE TOKEN

Syntactic characteristics of an INFO-IDENTIFIER are defined in [1].

Specification of a NAMESPACE TOKEN is at the discretion of the NAMESPACE AUTHORITY requesting the registration. Generally such tokens will reflect the identity of the organization managing the namespace, or the identity of the namespace itself.

It is recommended that registered tokens be relatively short and recognizable by the constituency for which they are intended. These tokens represent, in part, a branding of a given namespace.

IV. Who can register a NAMESPACE TOKEN

NAMESPACE TOKENs can only be registered by the NAMESPACE AUTHORITY for the identifier namespace in question.

V. Speculative NAMESPACE TOKEN Registration

Speculative or pre-emptive registration of NAMESPACE TOKENs is not permitted. Registrants attest that a proposed NAMESPACE TOKEN is currently in use. NAMESPACE TOKENs that are requested as part of a planned business activity can be reserved for 12 months, pending demonstrated public use.

VI. Registration Procedure

Registration of an “info” URI NAMESPACE TOKEN proceeds in the following phases:

- **Proposal Submission**

NAMESPACE AUTHORITY submits a form-based registration proposal, including the desired NAMESPACE-TOKEN.

“info” URI Registry Operator confirms receipt of proposal, and the status of the proposal is set to INTERNAL-REVIEW

- Internal Review

The “info” URI Registry Operator reviews the proposed NAMESPACE TOKEN for potential collision with other registered names in the domain of Internet protocols [List of criteria to be added].

The “info” URI Registry Operator reserves the right to reject a request for a particular NAMESPACE TOKEN on the basis of recognized name collisions or high potential for intellectual property disputes.

In the case that grounds for rejecting the proposed NAMESPACE TOKEN are identified, the “info” URI Registry Operator so notifies the NAMESPACE AUTHORITY and negotiates a re-submission.

In the absence of grounds for rejection of a NAMESPACE TOKEN, the “info” URI Registry Operator so notifies the NAMESPACE AUTHORITY, posts notice of the proposal on the “info” URI Namespace Review List for public comment, and sets the status of the proposal to PUBLIC-COMMENT.

- Public Comment

In the case of substantive objection on the “info” URI Namespace Review List to a proposed NAMESPACE TOKEN, the proposal will be submitted to the “info” URI Review Board for formal review and negotiation with the NAMESPACE AUTHORITY that has proposed the token.

Public comment on a proposed NAMESPACE TOKEN will extend for an interval determined by the “info” URI Registry Operator to allow for public comment on the proposal. In the absence of substantive objections, the “info” URI Registry Operator will establish a public Namespace Record in the Registry and set the status of the proposal to REGISTERED-ACTIVE

A NAMESPACE TOKEN proposal will receive REGISTERED-PROVISIONAL status if it is part of a planned service, but not in active use.

REGISTERED-PROVISIONAL status expires 12 month following its declaration in the “info” URI Registry, unless notification of public use is received from the requesting NAMESPACE AUTHORITY.

- Registration Duration

An “info” URI Registration record remains in the “info” URI Registry as long as the NAMESPACE AUTHORITY is in good standing. If a NAMESPACE AUTHORITY is no longer in good standing, then the status of all registered NAMESPACE TOKENs in the “info” URI Registry

associated with said NAMESPACE AUTHORITY will, at the discretion of the “info” URI Registry Operator, be set to REGISTERED-INACTIVE. Additionally, the Registration record may be made inaccessible to the public.

VII. Characteristics of IDENTIFIERS managed within a given namespace.

IDENTIFIERS managed within a given namespace will have characteristics defined by the NAMESPACE AUTHORITY, constrained only by the character set constraints native to current network practice and characterized in [1].

VIII. Characteristics of an INFO URI Registration Record

An “info” URI Registration record will contain sufficient information to identify:

- Registered NAMESPACE TOKENs (string literals identifying the registered namespaces) [public]
- Contact information for the Namespace Authorities [public]
- Optional normalization methodology or parsing specifications for the INFO-IDENTIFIERS for a particular NAMESPACE TOKEN [public]
- Optional ancillary documentation or public contact information to support more effective utilization of the INFO-IDENTIFIERS [public]

All information not specified as public will be considered privileged business communication between the “info” URI Registry Operator and the NAMESPACE AUTHORITY and will not be sold, made available to third parties, or made publicly available except by written agreement. Collection and use of such information will be for the purpose of “info” URI Registry deployment and maintenance only.

IX. Rights and Responsibilities concerning NAMESPACE TOKEN and INFO-IDENTIFIERS

NAMESPACE AUTHORITIES may propose the token string to be associated with a proposed NAMESPACE TOKEN. In so doing, they assert that the namespace is in use or in formal planning stages by their organization, and that there are no known conflicts with existing service marks, trade marks, or other registered branding instruments.

The “info” URI Registry Operator reserves the right to reject a proposed NAMESPACE TOKEN and to propose alternates. Disagreements between the “info” URI Registry Operator and the NAMESPACE AUTHORITY will be mediated by the “info” URI Review Board.

NAMESPACE authorities agree to the public use of NAMESPACE TOKENs which they register, alone and in conjunction with INFO-IDENTIFIERS.

NAMESPACE AUTHORITIES do not, by the act of NAMESPACE TOKEN registration, forego any rights or interests in the use or commercial exploitation of intellectual property or systems based on the management of these NAMESPACE TOKENs beyond the requirement that these identifiers be publicly referenceable without fee.

The validation of INFO-IDENTIFIERS as actual instances of authentic identifiers is outside the scope and responsibility of this Registry.

X. Withdrawal of a Registered NAMESPACE TOKEN

A NAMESPACE AUTHORITY can initiate withdrawal of a registered NAMESPACE TOKEN at any time by written notification of discontinuance to the “info” URI Registry Operator. Such notification will trigger removal from public access of a designated NAMESPACE TOKEN record. Such withdrawal in no way restricts the public use of previously issued INFO-IDENTIFIERS.

The “info” URI Registry Operator can initiate withdrawal of a registered NAMESPACE TOKEN record for abrogation of Terms and Conditions specified in the Registration Agreement.

XI. Registration Fees

During the initial start-up and experimental period, no fees will be collected for NAMESPACE TOKEN registration. At some time in the future, NAMESPACE AUTHORITIES may be assessed cost-recovery fees for maintenance of the “info” URI Registry.

XII. Governance

Policy for the “info” URI Registry will be determined by a Governance Board to be constituted by NISO, the maintenance at a future time.

Policy for the “info” URI Registry will be available for public inspection and comment and will be established in accordance with principles of non-discriminatory openness and inclusiveness.

XIII. “info” URI Review Board

Review of “info” URI Registration requests will be conducted by an “info” URI Review Board.

XIV. References

[1] The “info” URI Scheme for Information Assets with Identifiers in Public Namespaces
<http://www.ietf.org/internet-drafts/draft-vandesompele-info-uri-01.txt>>



Dublin Core Metadata Initiative

Making it easier to find information.

[ABOUT THE
INITIATIVE](#)[DOCUMENTS](#)[GROUPS](#)[RESOURCES](#)[DCMI NEWS](#)[TOOLS AND
SOFTWARE](#)[MEETINGS AND
PRESENTATIONS](#)[PROJECTS](#)

Vocabulary Scheme Registration

[Help](#)[Search](#)[Submit](#)[Admin](#)

The Dublin Core Metadata Initiative recognizes the importance of controlled vocabularies (e.g., thesauri, classification systems, taxonomies, ontologies, etc.) and encoding schemes (e.g., date encoding schemes) to resource communities, and the degree to which their use improves the interoperability of metadata.

This application provides an interface for registering vocabulary and encoding schemes, and for searching for previously registered schemes. The application's goal is to promote metadata interoperability and improve semantic understanding through the common use of terms from established, publicly recognized controlled vocabularies and encoding schemes. The application currently supports the registration of subject schemes only.

Please refer to the following sections for additional information:

- [Overview](#)
- [Searching for existing schemes](#)
- [Submitting a new scheme](#)
- [Application administration](#)

Overview

General

The DCMI does not approve vocabulary schemes, but acknowledges formally maintained schemes as suitable for use with DC metadata. Thus, the schemes have the status "Registered" which does not necessarily imply that they are recommended by the DCMI. All DCMI maintained schemes have the status "Recommended".

Additional help is provided in the [Vocabulary Guidelines](#)

Registration Process

The scheme registration process is open to everyone and schemes can be submitted by completing the Web submission form included with this applicaiton ([see figure 3](#)). The submission process consists of the following steps:

1. Schemes are entered using the provided form. **Important:** this action places your scheme in an 'entered' status. Only schemes with a 'pending' status are considered for registration. The following step provides information regarding how to promote an 'entered' scheme to 'pending' status.
2. Once a scheme has been entered an email message is generated and sent to the submitter email address provided on the Web form. This message includes a URL that must be used to complete the scheme submission. Normally this can be accomplished by clicking on this link. **Note:** This action must be taken within 24 hours of the scheme being entered, and schemes are not considered for registration until this action has been taken.
3. The DCMI Usage Board reviews pending submissions using a "fast track" decision process and either approves or rejects scheme submissions. Submitters are notified, via email, of this action.

Searching for existing schemes

The search component is used to search for schemes that have a status of 'registered' or 'pending'. There are two primary interfaces to the search component; a search form and a drop-down selection box that can be used query the database for all schemes with a particular status ('pending' or 'registered').

The search form enables users to search for schemes that match specific words or phrases. The form supports both case-sensitive and case-insensitive searching and enables users to restrict their search to schemes that match:

- An exact word or phrase
- At least one of the words provided
- All of the words provided

Both the search form and the drop-down selection box will produce a summary listing of schemes that match the search criteria. The summary display (figure 1) includes the acronym, scheme name and scheme status.

Summary of all registered schemes

Items found: 1

Acronym	Scheme Name	Status
DDC	Dewey Decimal Classification	Registered

Figure 1: Summary display

Click on any of the acronyms listed to produce a detail listing of that particular scheme. Figure 2 is an example of the detail listing produced by clicking on the 'DDC' acronym in the summary listing above:

Detail for scheme: DDC

Full Name of scheme	Dewey Decimal Classification
Suggested name (acronym)	DDC
Maintenance Agency	OCLC Forest Press
Maint. agency contact name	Joan S. Mitchell
Maint. agency contact email	dewey@oclc.org
Submitter email	wagnerh@oclc.org
Online access point	Web Dewey in CORC (http://purl.oclc.org/corc/)
Access information	http://www.oclc.org/fp/products/index.htm
Additional information	License required
Domain(s) & extent of usage	Most frequently used universal classification system for library OPACs and national bibliographies; limited recent usage in web catalogues etc.
Associated element or qualifier	subject
Date registered	2002-11-05 10:59:25-05
Last modified	2002-11-05 10:59:25-05
Status	Registered

*Figure 2: Detail display***Submitting a new scheme**

Scheme submission is accomplished using the Web submission form. Complete the form and press the submit button.

<u>Full name of scheme</u> *	<input type="text"/>
<u>Suggested name (acronym)</u> *	<input type="text"/>
Maintenance agency *	<input type="text"/>
Maint. agency contact name *	<input type="text"/>
Maint. agency contact email *	<input type="text"/>
Submitter email address *	<input type="text"/>
Online access point	<input type="text"/>
Access information	<input type="text"/>
Additional information	<input type="text"/>
Domain(s) and extent of usage	<input type="text"/>
Associated element or qualifier	<input type="text" value="subject"/>
* indicates required fields	<input type="button" value="Submit"/> <input type="button" value="Reset"/>

Figure 3: Scheme submission form

Fields marked with an * are required. Some fields, such as 'Full name of scheme' and 'Suggested name (acronym)' have field-level help available. Click on the field name for additional information regarding that field. Additional guidelines regarding the form can be found in the [Vocabulary Guidelines](#).

Upon completing the form, providing there were no errors or missing fields, you will be presented with a confirmation screen indicating your submission has been accepted and given a status of 'entered'. A confirmation email will be sent to the submitter email address provided on the form. This email includes a URL which must be used to confirm the scheme submission. Doing so will change the scheme status from 'entered' to 'pending', and make it eligible for registration.

Note: you must confirm your scheme submission, using the provided URL, within 24 hours of the scheme being entered. Only 'pending' schemes are considered for registration.

Application administration

This function is restricted to authorized DCMI administrators.

Valid XHTML
1.0!

Please direct questions, comments and suggestions to: webmaster@dublincore.org

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Vocabulary scheme registration, January 2004

Status

- Development "finished" Dec 2002
- Dependency from "large" DCMI registry could lead to unexpected failures (Harrys message)
- Test period carried out during May 2003 (6.-19.5., prolonged)
- *Seattle decision: all action items on this topic from Ithaca remain to be completed. Action items from Seattle not acted upon yet*

Demo

- Submission ?? (show EIC)
- Editing and registration: ASC; (use Tom's list, more detailed than TKs)

Testresults

- Test process and results
 - Prolongation and reminders
 - AB: Ann Apps; Tom Pick; message from Joseph Busch
 - UB: Andy, Diane, Traugott: incl. registration. Rebecca (submission). Tom (test)
 - externals on invitation: FAO (2); Canadian NL (2); Netlab (2); SUB (0)
 - comments: Gauri, Jessica, Deane, Andy, Diane, Tom, Roland (on issues). no comments on user interface and help or functions like search.
 - 4 registered schemes: DDC, AGROVOC, JACS, NASAT. 9 pending schemes.
- System problems, bugs
 - No confirmation message after submission? (FAO; Tom?)
 - Wrong error message, doesn't allow to confirm submission with older browsers (Netscape)
 - Hyperlinked URL in confirmation message to submitter sometimes corrupted. Record appears anyhow but with misleading error message (commas, Jessica)
 - Reset doesn't work when trying to delete a test record. Impossible: it needs to be treated as rejected. (TK)
 - Admin module: bug (new password not recognized). Hack exists
 - No logout after registration and other actions (Diane). *Ithaca: Provide logout*
 - Gauri didn't receive a registration message after TK registered AGROVOC
- Submission form
 - Help in a separate window should be provided for all fields (Andy)
 - Misunderstanding of requested information: Access information (Harry refused to add details)
 - Element titles: Suggested name (acronym) (changed by Harry). Full name of scheme.
 - Boxes not large enough, e.g. acronyms; comments (Andy, Jessica).
Cut and paste difficult when just one line on display. text lost (Jessica)
 - Preview and editing of input not possible after first input (Jessica, Deane and others. Earlier denied by Harry). *Confirmed by UB at Ithaca.*
 - Proposed new elements in form: language of scheme (Jessica). Maintainers scheme ID (URL) (FAO) etc.
 - dc:subject instead of subject in pulldown list (Andy). Changed by TK in Nov 02.
 - Guidelines document OK? User interface, help etc. OK?
 - *Seattle Action Item 13: Traugott to draft document setting out guidelines for the creation of URIs for encoding schemes.*
- Registration process
 - after Edit, Update etc.: top line wrong "submit a new scheme"
 - after Edit/update: no link to next step, same scheme view comes back. No acknowledgement. Need to Search:Pending: select: to get Register button
 - after Registered: no acknowledgement

- Scope of registry
 - Other encoding schemes, apart from subject vocabularies (Deane: audience and type schemes. FAO. Rebecca.)
 - Add maintainers scheme/namespace URL (FAO)
 - Register usage in local metadata profiles (FAO)
- Further requirements and wishes
 - Automatic communication with the registry (Deane)
 - Decentralised scheme registration? (Canada)
 - Updates and editing at a later stage by a maintainer/submitter(FAO)

Issues

- Process
 - Process document vs Vocabulary guidelines document (should there be only one common document? Tom)
 - Update of the UB process document necessary (Diane: difference in status -obsolete is not an option in Reg.; with Toms full list)
 - *Action item (Ithaca): Diane and Stuart: Make necessary updates to the UB process document*
 - *Action item (Ithaca): Tom and Diane: Draft new document that explains such things as "good neighbour" policy, what the process involves, the aims of the registration service, registration help etc. Prepare standard email to maintainers.*
 - Expected efforts by UB members for checking and verifying before registration: how to limit? Archiving documentation? (Tom, Roland)
- Namespace and Legal issues
 - Will DCMI/the registry provide a namespace URL for the schemes? (FAO) Which? (Namespace policy). Possible conflict with maintainers? Do we express preferences for one of the namespace URLs? (Tom) cf. discussion Dec 2002
 - Encoding scheme terms namespace vs. Encoding scheme name namespace (Dec 2002). Do we add maintainers namespaces into the registry?
 - *Does DCMI provide a separate namespace for vocabulary schemes or will they go into DC terms?*
 - *Does the term URI need to be persistent and unique, with a date stamp?*
 - Possible conflict with maintainers about the name/acronym (Tom; Rebecca; FAO)
 - *Decision about namespace rules needed: Schemes can have namespace URIs already, they can get it after registration by DCMI or never. Who provides namespaces/URIs for the schemes today: the scheme owners, DCMI, the metadata implementers (ex.: LC's marc.sources/aat)?*
Ithaca: DCMI assigns scheme URI and lists scheme URI's created by vocabulary owners. If this is the case, a "same as" relationship between the two is declared. Ex.: /dc/schemes/AGROVOC same as www.fao.org/AGROVOC/
 - Do we have the right to give a name to something someone else runs? Is it that we are doing? How do we handle acronyms which might be trademarks? Do we need to ask all owners for acceptance and what are the consequences of such a need? Do we need an escape clause in the DCMI namespace policy?
 - Clarification on the legal issues surrounding encoding scheme registration (Action item: Tom to ask directorate to advise UB on their position)
Seattle Action Item 14: Tom to remind Stu to seek advice from OCLC lawyers regarding legal issues surrounding encoding scheme registration. DONE Dec. 2003
- Terminology
 - "Encoding scheme" as term type in dc terms vs as a full vocabulary maintained by others (Tom). Roland: rdf Class, subclass vs. owl:equivalent class, sameAs
 - Two types of encoding schemes: vocabulary vs. syntax (TK; Andy; Tom; Roland)

Further steps

- More testing?
- What is realistically to be expected to be improved? How to work with Harry continuously?
- LCSH, UDC, MeSH still registered as DC terms. Move to vocab. registry?
- *Action item (Ithaca) Tom: Document the XML output formats that are wanted from the registration tool*

- *Action item (Ithaca) Traugott: List of priorities for enhancements/changes to the scheme registration tool to be submitted to Makx*
 - *Action item (Ithaca): Traugott asks Paul Miller to create closed Jiscmail list for archiving of all email communication between UB/DCMI and the scheme owner/maintainer*
 - *Seattle decision: UB agrees that it must proceed with this proposal.*
 - Complete registration of FAO and Canadian NL schemes.
 - Start date? Public announcement. *after Seattle: Feb 1st, 2004*
 - *Seattle decision: UB will consider adopting IETF's InfoURI if and when this is finalised.*
 - Tom's mail 18.12.: "2) Working with other communities for feedback to our policies and methods in the light of first experience and for influencing an emerging set of conventions and methods for solving the problem of identifying vocabularies more generally. In addition to pursuing NSF support for some meetings, Traugott suggests we specifically aim at working with the NKOS effort."
-

Changes to the tool (Harry)

1. Submission form

1. Help in a separate window should be provided for all fields (Andy)
2. Some more text in the template is needed to prevent misunderstanding of requested information: e.g. Access information
3. Element titles, corrections: Suggested name (acronym) (changed by Harry). Full name of scheme. They need to be in sync between the template, the Guidelines and the help text of the tool.
4. The input boxes need to be large enough, e.g. reg. acronyms; comments (Andy, Jessica).
Cut and paste is difficult when just one line is on display. Text is lost (Jessica)
5. Preview and editing of input needs to be possible after the first input (Jessica, Deane and others. Confirmed by UB at Ithaca).
6. Add the following new element in the submission template: Maintainers official scheme ID (format: URI) (FAO)

Harry wrote 2.12. 2002, however:

```
> 2) We probably need to introduce an additional element to our vocabulary
> template/database records: "Namespace provided by the owner" (of the vocabulary).
> It is necessary in the, at the moment, rare case, that the owner of a
> vocabulary provides a formal namespace for it's vocabulary.
> This is different from the URL for a not machine readable
> web version of the vocabulary.
>
> Any views?"
```

Yes. I recommend we don't make a change of this size right now, at least not for something described as a 'rare case'. Of course we can do it, but it will require a change to the database, the submit and update forms, and the programs that process those forms. It will delay implementation. Unless it is absolutely needed, let's wrap up the above changes and implement the application so it can be used.

2. Registration process

1. Add elements (in database and display version of the template):
(third): Scheme URI assigned by DCMI
(fourth): Scheme URI assigned by the maintainer
2. Improvements reg. the following:
 1. after Edit, Update etc.: change the wrong page title "submit a new scheme"
 2. after Edit/update: link to next step (same scheme view comes back). Provide acknowledgement. To get a Register button one now needs to take the following steps Search:Pending: select:
 3. after Registered: provide acknowledgement

3. Texts

1. Add text to the tools help page and the Guidelines document reflecting the Seattle decision: "In the first instance registration will be on the initiative of scheme owners (Andy's closed model). This requires that the owner does the registering using either their own URI or a DCMI assigned URI. However, where schemes have existing URIs such schemes could be registered at the request of implementers." (with Traugott)
2. Check and edit all other texts in the tool (with Traugott)

4. Output of the tool

1. The database needs to periodically output a listing of new vocabulary encoding schemes in a form that can automatically be merged into the raw UB data (currently in XML) used for generating RDF schemas and web pages. Create workflow for that process (Tom).

5. Other actions

1. Provide logout after registration and other actions (Diane; requirement approved by the Ithaca meeting).
2. Some of the changes requested Sep 05, 2002 (vocabtool-changes) might be prioritized higher now.
3. Harry told us: Dependency from "large" DCMI registry could lead to unexpected failures. We need a description of what we have to expect.
4. Seattle Action Item 15: Questions to be posed to Harry, as part of request for updates and changes, regarding authentication and whether existing authentication facility is robust enough.

Other tasks before production starts

- Action item (Ithaca): List of priorities for enhancements/changes to the scheme registration tool to be submitted to Makx and Stu (Traugott)
- Update Guidelines document and add advice about URI format (Traugott)
- Invite further comments on the user interface and the help texts (Usage Board).
- Decision about the DCMI namespace for vocabulary names (Directorate)
Tom's mail 18.12.: "1.4) [Item added by Tom after the phone call]: We need to revisit the question of a separate "schemes" namespace, which means revising our documentation and policies (e.g. Namespace Policy). If this step involves creating new schemes-namespaces URIs for existing Encoding Schemes we would also need to document this fact and clarify the implications for the RDF schemas."

LCSH, UDC, MeSH are still registered as DC terms. Move to vocab. registry?

- Action item (Ithaca): Traugott asks Paul Miller to create closed Jiscmail list for archiving of all email communication between UB/DCMI and the scheme owner/maintainer
- Decide start date; prepare public announcement.
- Short text: Why is registration and identification in the interest of vocabulary owners (Stu?)
- Tom's mail 18.12.: "1.6) We need to articulate a policy for linking to non-DCMI URIs created for vocabularies to which DCMI URIs have already been assigned."

Last updated: 2004-01-19

Guidelines for Vocabulary and Encoding Scheme Qualifiers <http://dublincore.org/usage/documents/vocabulary-guidelines/>

DCMI vocabulary registration tool <http://wip.dublincore.org/schemes/>

NKOS vocabulary registration work <http://nkos.slis.kent.edu/>

Guidelines for registration of Vocabulary Encoding Schemes

Tom proposes:

The Guidelines should start by saying what "Vocabulary Encoding Schemes" are. For example:

In DCMI's terminology, an Encoding Scheme is a type of metadata term designating "contextual information of parsing rules that aid in the interpretation of a term value" [DCMI-PRINCIPLES]. A Vocabulary Encoding Scheme is a metadata term designating a controlled vocabulary (e.g., a thesaurus, classification system, taxonomy, ontology, or word list). For example, the DCMI encoding scheme "LCSH" -- also known by its Uniform Resource Identifier URI, <http://purl.org/dc/terms/LCSH> -- can be used in instance metadata to indicate, for example, that the value "China - History" is taken from the Library of Congress Subject Headings.

[DCMI-PRINCIPLES] <http://dublincore.org/usage/documents/principles/>

DCMI recognizes that different discourse and practice communities have legitimate, particular needs to be able to select either vocabulary encoding schemes from an array of recognized controlled vocabularies (e.g., thesauri, classification systems, taxonomies, ontologies, and word lists) or syntax encoding schemes that determine the syntactic structure of the values (e.g., date encoding schemes). To promote the greatest degree of interoperability, DCMI encourages the registration of recognized schemes with DCMI.

Tom proposes:

"This text is confusing: It says communities need to select "vocabulary encoding schemes" from "controlled vocabularies", but it should say that communities need to select "values" from controlled vocabularies. I also think it is confusing to bring "syntax encoding schemes" into the picture at this point. One could perhaps revise it as follows:

**DCMI recognizes* that different discourse and practice communities have legitimate, particular needs to be able to use an array of recognized controlled vocabularies in their instance metadata. To promote interoperability, DCMI creates and maintains Vocabulary Encoding Schemes to designate these recognized vocabularies. Practically speaking, a Vocabulary Encoding Scheme is identified by a Uniform Resource Identifier (URI). Organizations other than DCMI are starting to designate their own vocabularies with their own URIs as well. DCMI maintains Web pages and a Web-based database ("registry") to document such URIs -- both DCMI-maintained and non-DCMI-maintained URIs -- for use by metadata creators.*

The process of proposing a vocabulary for designation with a DCMI-maintained Vocabulary Encoding

Scheme or for reporting the existence of formal URIs maintained by other organizations is known as "registration". These guidelines describe how a proposal for registration is formed and submitted."

DCMI recognizes that in order to promote interoperability through the common assignment of terms from established, publicly recognized controlled vocabularies and encoding schemes, the most critical, immediate need is to provide registration mechanisms for vocabularies for the "Subject" vocabulary.

Tom proposes:

"In light of the preceding paragraph, this could be tightened as follows:

At present, DCMI is soliciting the registration of vocabularies for use with the Dublin Core element Subject -- the element for which the need for encoding schemes is most urgently felt -- though it may in future use the registration mechanism for other elements as well. "

1. General

- 1.1 DCMI does not approve vocabulary schemes, but acknowledges formally maintained schemes as suitable for use with DC metadata. Thus, the schemes have the status "Registered" which does not necessarily imply that they are recommended by the DCMI.

Tom proposes instead: "I know we discussed this first point, but I still find it confusing because the Usage Board does in fact "approve" things called "vocabulary encoding schemes". Rather, I suggest: DCMI does not provide official "approval" for, nor does it "recommend" the use of, particular controlled vocabularies. Rather, it provides metadata terms that can be used to designate formally maintained vocabularies in Dublin-Core-based instance metadata."

- 1.2 DCMI maintained schemes have the status "Recommended".

2. Registration process

- 2.1 For the time being, vocabulary owners and maintainers are invited to propose a scheme for registration by submitting the required information to the web form at: <http://wip.dublincore.org:8080/schemes/submitServlet>. Institutions who maintain a stable registry containing their own vocabularies in a considerable number can agree with the DCMI Usage Board on a simplified submission process.

For the time being, metadata implementers who do not own or maintain the vocabulary can propose a scheme for registration only if the owners/maintainers have established a unique name in URI format for that scheme.

- 2.2 The DCMI Usage Board applies a "fast track" decision process involving the guidelines and

criteria listed below.

- 2.3 For each scheme, the registrant should provide the following information:
 - Full label of the scheme
 - Suggested name (acronym)
 - Maintainers official scheme ID (format: unique, persitent URI)
 - Maintenance agency
 - Maintenance agency contact person
 - Maintenance agency contact email address
 - Submitter email address (if different from the maintenance agency contact email address)
 - Online access point (URL if applicable)
 - Access information (URL or physical address)
 - Additional information about the scheme
 - Domain(s) and extent of usage
 - Associated element(s) or element refinement(s)

definitions to be added

Example

Full label of the scheme	Dewey Decimal Classification
Suggested name (acronym)	DDC
Maintainers official scheme ID (format: URI)	http://www.oclc.org/vocabularies/DDC
Maintenance agency	OCLC Forest Press
Maintenance agency contact person name	{ Name of current editor or contact person }
Maintenance agency contact email address	dewey@oclc.org
Submitter email address	{ Email address of submitter if different than the maintenance agency contact person }

Online access point	Web Dewey in CORC (http://purl.oclc.org/corc/)
Access information	http://www.oclc.org/fp/products/index.htm
Additional information about the scheme	License required
Domain(s) and extent of usage	Most frequently used universal classification system for library OPACs and national bibliographies; limited recent usage in web catalogues etc.
Associated element(s) or element refinement(s)	Subject

- 2.4 Proposal s that adhere to the guidelines below will be given the status "Registered" and are included in the DCMI Registry. The registration tool contains schemes with the status "Registered" or "Rejected".

3. Guidelines

- 3.1 **Kind of schemes to be registered**

- 3.1.1 Only schemes which are created and maintained by recognized entities and properly published may be registered.

- 3.2 **Labeling of the schemes**

- 3.2.1 The scheme label should be the official title the vocabulary is known under. The name of the organization maintaining or owning the scheme is rarely sufficient since it does not unambiguously stand for the vocabulary alone.
- 3.2.2 The scheme labels and acronyms are only appropriate for an unchanged use of an official version of the scheme. Unofficial versions, modified versions, unofficial translations and similar should not use the official label or acronym but apply a local one (e.g. based on the service, project or provider. Ex.: The DutchESS service is using a local variant of the BC classification. It should be called DutchESSC or DutchESS-BC if it is really close to the official scheme).

- 3.2.3 A subset of an official scheme where terms are unaltered may not be registered separately.

- **3.3 Acronyms to be used as scheme names**

- 3.3.1 The acronyms must be unique and start with an initial upper case. Every effort will be made to maintain the short name proposed by the maintaining agency. In case of collisions, a suitable alternative will be chosen in consultation with the maintaining agency.
- 3.3.2 Existing official acronyms or short names should be used as acronyms when possible.
- 3.3.3 Official translated versions receive an acronym where a standard language code is added, e.g. DDC-fr. This is necessary since translated versions are rarely fully equivalent. Other translations, if registered, will be assigned an alternative acronym.

- **3.4 Specification of scheme versions**

- 3.4.1 DCMI will register multiple versions of schemes if they appear to be important and/or it is requested by a user applying for registration.
- 3.4.2 Versioned schemes should be registered and used when there is a considerable probability that databases exist which apply terms and classes belonging to older versions of the scheme.
- 3.4.3 The official version of the scheme used should be indicated like in the following examples: DDC21, DDC21ab-fr (abridged DDC version 21 in French), MSC2000.

- **3.5 URI's to be used as scheme names**

- 3.5.1 All schemes will be given an acronym for the purpose of DC metadata encoded in HTML/XHTML (cf. 3.3). Scheme owners/maintainers are strongly recommended to assign an unique and persistent URI as an identifier to their vocabulary. There is no need that this URI points to a web page of any kind. *Last two sentences to be removed acc. to Tom*
- 3.5.2 A scheme which does not (yet) have an official unique name/ID assigned by the owner/maintainer will, in addition, be given an URI by this DCMI registry using the format: [http://purl.org/dc/schemes/\(Acronym\)](http://purl.org/dc/schemes/(Acronym)) ? for usage in metadata encoded in XML and/or RDF.
- 3.5.3 In case the owner/maintainer establishes an unique scheme URI at a later stage, the

DCMI vocabulary registry and the DCMI term namespace (in RDFS) will ensure interoperability by establishing a "same as" relationship between the URI assigned by DCMI and the new official URI assigned by the owner/maintainer.

3.5 needs to be reformulated in case the assignment of an acronym always involves to establish a DCMI URI for the vocabulary. In that case all registered vocabularies will be given a DCMI URI and most will eventually need to have "same as" links in the registry to be routinely looked up by services. We need to discuss the implications.

Note: In order to stay in sync with DCMI conventions, in these guidelines the full name of a scheme is called "label" and an acronym or token is called "name".

[Traugott Koch](mailto:Traugott.Koch@lub.lu.se) (Traugott.Koch@lub.lu.se)

Created: 2001-05-11

Last update: 2004-01-16

URL: <http://www.lub.lu.se/~traugott/drafts/vocab-guide6.html>

Topic: Proposed terms for a collection description profile
Modified: 2004-03-22 09:41, Monday
Maintainer: Tom Baker
Latest version: <http://dublincore.org/usage/meetings/2004/03/ISSUES/terms-collection/>
See also: <http://dublincore.org/usage/meetings/2004/03/ISSUES/>

Shepherd: Andrew Wilson

SUMMARY (Tom)

Two proposals were submitted by Pete Johnston (who will attend the meeting in Bath):

- Dublin Core Collection Description Proposed Term : Provenance
<http://www.ukoln.ac.uk/metadata/dcmi/collection-provenance/>
- Dublin Core Collection Description Proposed Term : Is Available At
<http://www.ukoln.ac.uk/metadata/dcmi/collection-isAvailableAt/>

We will discuss these proposals and vote on approval.

These proposals raise some general issues, discussed in the email excerpts below: what it means to recommend the use of non-DCMI-maintained terms (instead of creating a DCMI term), and whether "collection-specific" terms properly belong in the main DCMI namespaces (or if not, where do they belong). Discussion of these issues overlaps with Topic 5 ("Scope of DCMI Namespaces"), see <http://dublincore.org/usage/meetings/2004/03/ISSUES/dcmi-namespaces/>.

Note: On the basis of discussion at the meeting on Sunday, Pete revised the proposal for Provenance and re-submitted the revised proposal for consideration on Monday:

<http://www.ukoln.ac.uk/metadata/dcmi/collection-provenance/2004-03-14/>

Date: Mon, 9 Feb 2004 16:02:46 +0100
From: Thomas Baker <thomas.baker@bi.fhg.de>
To: DCMI Usage Board <dc-usage@jiscmail.ac.uk>

Pete's proposal will raise a basic issue we have not sufficiently addressed: What does it really mean for the UB to recommend the re-use of terms from other namespaces? We have done this before [1]. However, Pete argues that (for example) a MODS element -- an XML element which takes meaning from its context in an XML tree structure -- is fundamentally different from an RDF property usable in statements about resources [2].

Pete also wonders whether using a URI outside of its original context is consistent with good practice [3]. Should the

owner of a URI be the one to make such a recommendation (e.g.,
LoC for MODS)?

- [1] <http://dublincore.org/usage/decisions/2002/2002-02.holdingLocation.shtml>
- [2] <http://www.jiscmail.ac.uk/cgi-bin/wa.exe?A2=ind0401&L=dc-collections&T=0&F=&S=&P=4961>
- [3] <http://www.w3.org/TR/webarch/#uri-ownership>

Date: Mon, 9 Feb 2004 15:46:42 -0000
From: Pete Johnston <p.johnston@UKOLN.AC.UK>
Subject: Re: Bath -- term proposals versus "using" non-DCMI terms

> Pete also wonders whether using a URI outside of its original
> context is consistent with good practice [3]. Should the
> owner of a URI be the one to make such a recommendation
> (e.g., LoC for MODS)?

Just on this specific point of use outside of original context, I wasn't
arguing against, say, DCMI recommending the use of a URI owned by LoC
(or anyone else), as long as that use was in line with the assertions
made by the URI owner about what that URI denoted.

So, if LoC says <http://loc.gov/someproperty> denotes an RDF property, and
based on what LoC says about that property, DCMI thinks it seems useful,
then it seems perfectly fine for DCMI to recommend the use of that
property - as long as (a) DCMI's suggested use doesn't contradict LoC's
recommended use for that property (e.g. if LoC says it should be used
only to describe journal articles, then DCMI shouldn't say it can be
used to describe museum objects, or cars, or ideas), and (b) DCMI is
happy with LoC's policies for URI persistence and so on. (And probably
some other conditions I haven't thought of!)

But I was questioning whether DCMI (or indeed any other body) should,
in the absence of explicit statements about what is denoted by a URI
that it does not own, "make assumptions" about what that URI denotes.

Specifically for the case of the MODS location element, I couldn't see
any clear evidence that a URI had been assigned to "the MODS location
element" at all (an XML QName is not a URI) (though I'm aware of the
decaration of intent made through the CORES resolution [1]).

And further the only information I can find about the MODS location
element is a description of an XML element, not an RDF property, and
those are fundamentally different things.

So I guess I'm - respectfully ;-) - questioning the line in the UB
decision that says, 'the element "location" in MODS complies in a
general way with Dublin Core principles', and is therefore appropriate
for use in a DCAP.

[1] <http://mirrored.ukoln.ac.uk/lis-journals/dlib/dlib/dlib/july03/baker/07baker.html>

From: Pete Johnston <p.johnston@ukoln.ac.uk>
Date: Tue, 17 Feb 2004 12:55:55 -0000

I'm conscious that they both have (potentially at least) rather broader implications about the scope of DCMI activity, and particularly its relationship to the development of schemas and metadata vocabularies designed for the discovery of specific types of resource.

It seems to me that the DC CD WG may not be able to fulfil its current charter without some guidance on the second of these issues i.e. the assignment of URIs for terms that are conforming to the DC model and appropriate for use in an AP developed by a DCMI WG, but are not considered candidates for one of the DCMI Namespaces.

Looking again at section 3 of the UB process doc [1] it's not clear to me whether a property that was explicitly specific to the description of a Collection would be a candidate for a "conforming" term in the DCterms vocabulary (the description there talks about the scope of a domain or an implementer community rather than about the type of the resource).

As I say, if the answer is that collection-specific properties would not be "conforming" and therefore DCMI can not assign URIs for them, then the DC CD WG needs to look elsewhere for a URI owner. If on the other hand, a collection-specific property would be "conforming" and would be a candidate for the DCterms vocabulary, then we will make submissions to UB accordingly. (The proposals we have submitted this time are not collection-specific, and we have hesitated to put forward terms that are explicitly collection-specific because it seemed unlikely that they would be accepted.)

There is perhaps a slight knock-on effect for the "ownership" issue, in that the DC CD AP as a whole might be a "DCMI product" but it may be using terms that were owned and administered by another party. That's perfectly possible of course, but something for us to be aware of.

[1] <http://dublincore.org/usage/documents/process/>

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Title: Dublin Core Collection Description Proposed Term : Provenance

Creator: Dublin Core Collection Description Working Group

Date Issued: 2004-02-10

Identifier: <http://www.ukoln.ac.uk/metadata/dcmi/collection-provenance/2004-02-10/>

Replaces: <http://www.ukoln.ac.uk/metadata/dcmi/collection-provenance/2004-02-01/>

Is Replaced By: Not applicable

Latest Version: <http://www.ukoln.ac.uk/metadata/dcmi/collection-provenance/>

Status of Document: This is a DCMI [Working Draft](#).

Description of Document: This document presents a proposal from the Dublin Core Collection Description Working Group for a new element refinement, provenance.

Proposal

Name	provenance
Label	Provenance
Definition	A statement of any changes in ownership and custody of the resource since its creation that are significant for its authenticity, integrity and interpretation.
Comment	The statement may include a description of any changes successive custodians made to the resource.

Examples	<p>The provenance of a digital object:</p> <p>This file was created on 28 August 2002 by transformation from a TIFF image. The original TIFF image was purchased from the University of Sometown, Department of Special Collections and Archives in November 2001.</p> <p>The provenance of a physical object:</p> <p>The volume was presented to John Smith by Jones and Company on the occasion of his retirement from the company in 1888, and was located in Smith's private library until 1895, when it was sold to Wilson Booksellers of Liverpool. It was purchased for the National Library at auction in Manchester in June 1899.</p> <p>The provenance of a collection:</p> <p>The Smith collection was held by the Smith family in the library at Smith Hall. Letters written by John Smith and sent to Tom Jones remained in the custody of Jones until his death in 1966 when they were returned to Smith. The Smith collection was presented to the University Library as a gift by James Smith on 5 May 1973.</p>
Type of term	Element refinement
Term qualified	Description, Dublin Core Metadata Element Set, v1.1 [dc:description] http://purl.org/dc/elements/1.1/description
Why needed	Information about changes in the ownership or custody of a collection may be important in helping a user to <i>select</i> a resource and/or, having selected a resource, to <i>interpret</i> the resource.
Working Group support	See the mailing list archives of the WG, especially Jan 2004 and Feb 2004 .
Proposed status	Recommended

Related DCMI terms	None.
Related non-DCMI terms	<p>The International Standard for Archival Description (ISAD(G)), Second Edition (2000) is a descriptive standard for archival records. It can be applied to units of description at any level from the collection (or fonds) to the individual item, and includes two related elements:</p> <ul style="list-style-type: none"> 3.2.3 Archival history <p>Purpose: To provide information on the history of the unit of description that is significant for its authenticity, integrity and interpretation.</p> <p>Rules: Record the successive transfers of ownership, responsibility and/or custody of the unit of description and indicate those actions, such as history of the arrangement, production of contemporary finding aids, re-use of the records for other purposes or software migrations, that have contributed to its present structure and arrangement.</p> 3.2.4 Immediate source of acquisition <p>Purpose: To identify the immediate source of acquisition or transfer.</p> <p>Rules: Record the source from which the unit of description was acquired and the date and/or method of acquisition if any or all of this information is not confidential.</p> <p>ISAD(G) does not itself provide a machine-readable binding. The proposed term would be used to capture information recorded in both of these ISAD(G) elements.</p> <p>The Encoded Archival Description (EAD) DTD is a standard for encoding archival finding aids using SGML or XML. It includes two XML elements:</p> <ul style="list-style-type: none"> <custodhist> Provenance <p>Information about the chain of ownership of the materials being</p>

described, before they reached the immediate source of acquisition. Both physical possession and intellectual ownership can be described, providing details of changes of ownership and/or custody that may be significant in terms of authority, integrity, and interpretation.

- **<acqinfo> Acquisition Information**

The immediate source of the materials being described and the circumstances under which they were received. Includes donations, transfers, purchases, and deposits.

These are XML elements, not RDF properties. The proposed term would be used to capture information recorded in both of these EAD elements.

DSpace is a digital library system to capture, store, index, preserve, and redistribute the intellectual output of a university's research faculty in digital formats. The Dublin Core-based DSpace metadata schema includes an element refinement:

- **dspace:provenance**

Definition: The history of custody of the item since its creation, including any changes successive custodians made to it.

The SIMILE project has developed RDF bindings for DSpace metadata, and an RDF property is described in <http://web.mit.edu/simile/www/resources/history-harmony/history-design.pdf>. However the DC CD WG expressed some concern about the persistence of URIs owned by DSpace.

Impact on applications

If existing DC applications for collection-level description capture this data, they probably do so as part of the value of a `dc:description` element. The introduction of a distinct term allows the metadata creator to separate this subset of information from the description of the scope and content of the collection. As the proposed term is defined as a refinement of `dc:description`, a statement using the proposed term can be "dumbed-down" to a statement using a `dc:description` element.

About the proposers	<p>The term is proposed by the Dublin Core Collection Description Working Group. One of the primary aims of the WG is the development of a Dublin Core Application Profile (DCAP) for collection-level description, i.e. for the description of a collection as a resource, rather than the description of the individual items that make up that collection.</p> <p>Records of the activity of the WG are available in the mailing list archives.</p> <p>The current draft of the Collection Description Application Profile is available at http://www.ukoln.ac.uk/metadata/dcmi/collection-application-profile/</p>
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Changes made in this version

- Add example for digital resource.



Metadata associated with this resource: <http://dublincore.org/documents/collection-provenance/index.shtml.rdf>

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Title: Dublin Core Collection Description Proposed Term : Provenance

Creator: Dublin Core Collection Description Working Group

Date Issued: 2004-03-14

Identifier: <http://www.ukoln.ac.uk/metadata/dcmi/collection-provenance/2004-03-14/>

Replaces: <http://www.ukoln.ac.uk/metadata/dcmi/collection-provenance/2004-02-10/>

Is Replaced By: Not applicable

Latest Version: <http://www.ukoln.ac.uk/metadata/dcmi/collection-provenance/>

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Label	Provenance
Definition	A statement of any changes in the ownership and custody of the resource that are significant for its authenticity, integrity or interpretation.
Comment	

Examples	<p>The provenance of a digital object:</p> <p style="padding-left: 40px;">This image was purchased from the University of Sometown, Department of Special Collections and Archives in November 2001.</p> <p>The provenance of a physical object:</p> <p style="padding-left: 40px;">The volume was presented to John Smith by Jones and Company on the occasion of his retirement from the company in 1888, and was located in Smith's private library until 1895, when it was sold to Wilson Booksellers of Liverpool. It was purchased for the National Library at auction in Manchester in June 1899.</p> <p>The provenance of a collection:</p> <p style="padding-left: 40px;">The Smith collection was held by the Smith family in the library at Smith Hall. Letters written by John Smith and sent to Tom Jones remained in the custody of Jones until his death in 1966 when they were returned to Smith. The Smith collection was presented to the University Library as a gift by James Smith on 5 May 1973.</p>
Type of term	Element
Term qualified	[n/a]
Why needed	Information about changes in the ownership or custody of a collection may be important in helping a user to <i>select</i> a resource and/or, having selected a resource, to <i>interpret</i> the resource.
Working Group support	See the mailing list archives of the WG, especially Jan 2004 and Feb 2004 .
Proposed status	Conforming

Related DCMI terms	None.
Related non-DCMI terms	<p>The International Standard for Archival Description (ISAD(G)), Second Edition (2000) is a descriptive standard for archival records. It can be applied to units of description at any level from the collection (or fonds) to the individual item, and includes two related elements:</p> <ul style="list-style-type: none"> 3.2.3 Archival history <p>Purpose: To provide information on the history of the unit of description that is significant for its authenticity, integrity and interpretation.</p> <p>Rules: Record the successive transfers of ownership, responsibility and/or custody of the unit of description and indicate those actions, such as history of the arrangement, production of contemporary finding aids, re-use of the records for other purposes or software migrations, that have contributed to its present structure and arrangement.</p> 3.2.4 Immediate source of acquisition <p>Purpose: To identify the immediate source of acquisition or transfer.</p> <p>Rules: Record the source from which the unit of description was acquired and the date and/or method of acquisition if any or all of this information is not confidential.</p> <p>ISAD(G) does not itself provide a machine-readable binding. The proposed term would be used to capture information recorded in both of these ISAD(G) elements.</p> <p>The Encoded Archival Description (EAD) DTD is a standard for encoding archival finding aids using SGML or XML. It includes two XML elements:</p> <ul style="list-style-type: none"> <custodhist> Provenance <p>Information about the chain of ownership of the materials being</p>

described, before they reached the immediate source of acquisition. Both physical possession and intellectual ownership can be described, providing details of changes of ownership and/or custody that may be significant in terms of authority, integrity, and interpretation.

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DSpace is a digital library system to capture, store, index, preserve, and redistribute the intellectual output of a university's research faculty in digital formats. The Dublin Core-based DSpace metadata schema includes an element refinement:

- **dspace:provenance**

Definition: The history of custody of the item since its creation, including any changes successive custodians made to it.

The proposed term would **not** be suitable for the capture of this information in all cases as the proposed term covers the description of ownership/custody changes but not changes made to the resource.

Impact on applications

There is currently no means of recording this information in DC metadata: it can not be recorded as a value of `dc:description` as it is not "An account of the content of the resource". The introduction of this element allows the metadata creator to capture this information.

About the proposers	<p>The term is proposed by the Dublin Core Collection Description Working Group. One of the primary aims of the WG is the development of a Dublin Core Application Profile (DCAP) for collection-level description, i.e. for the description of a collection as a resource, rather than the description of the individual items that make up that collection.</p> <p>Records of the activity of the WG are available in the mailing list archives.</p> <p>The current draft of the Collection Description Application Profile is available at http://www.ukoln.ac.uk/metadata/dcmi/collection-application-profile/</p>
----------------------------	---

Changes made in this version

- (These changes made during meeting of Usage Board in response to comments received on previous version.)
- Amended "Definition" to remove "since its creation".
- Removed "Comment" on describing changes to the resource.
- Amended first example.
- Amended type of term to "Element" (not a refinement of dc:description).
- Amended proposed status to "Conforming".
- Amended "Impact on applications" to reflect that no longer refinement of dc:description.



Metadata associated with this resource: <http://dublincore.org/documents/collection-provenance/index.shtml.rdf>

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Title: Dublin Core Collection Description Proposed Term : Is Available At

Creator: Dublin Core Collection Description Working Group

Date Issued: 2004-01-24

Identifier: <http://www.ukoln.ac.uk/metadata/dcmi/collection-isAvailableAt/2004-01-24/>

Replaces: <http://www.ukoln.ac.uk/metadata/dcmi/collection-isAvailableAt/2004-01-18/>

Is Replaced By: Not applicable

Latest Version: <http://www.ukoln.ac.uk/metadata/dcmi/collection-isAvailableAt/>

Status of Document: This is a DCMI [Working Draft](#).

Description of Document: This document presents a proposal from the Dublin Core Collection Description Working Group for a new element refinement, isAvailableAt.

Proposal

Name	isAvailableAt
Label	Is Available At
Definition	The referenced resource provides access to the described resource.
Comment	The referenced resource may be a physical repository from which the described resource is supplied or a digital service that provides access to the described resource.

Examples	<p>The Is Available At element refinement could be used to describe the relationship between:</p> <ul style="list-style-type: none"> • a physical item and a repository that holds the item; • a collection of physical items and a repository that holds the collection; • a collection of digital items and a Web site that provides access to the items; • a collection of metadata records and a Z39.50 target that provides access to those records
Type of term	Element refinement
Term qualified	<p>Relation, Dublin Core Metadata Element Set, v1.1 [dc:relation] http://purl.org/dc/elements/1.1/relation</p>
Why needed	<p>The provision of access to an information resource is distinct from that information resource itself, and the two entities may be described as separate resources in distinct DC metadata descriptions. A single information resource may be available through multiple services. However, it is critical to be able to describe the relationship between these two resources. Having discovered an information resource, a user requires information on how to obtain access to it.</p>
Working Group support	<p>See the mailing list archives of the WG, especially Jan 2004 and Feb 2004. Also the report of the WG meeting at DC-2003.</p>
Proposed status	Recommended
Related DCMI terms	<p>Resource Identifier, Dublin Core Metadata Element Set, v1.1 [dc:identifier] http://purl.org/dc/elements/1.1/identifier</p> <p>Definition: An unambiguous reference to the resource within a given context.</p> <p>Recommended best practice is to identify the resource by means of a string or number conforming to a formal identification system. Example formal identification systems include the Uniform Resource Identifier (URI) (including the Uniform Resource Locator (URL)), the</p>

	<p>Digital Object Identifier (DOI) and the International Standard Book Number (ISBN).</p> <p>A URL is an accepted and widely used value for dc:identifier. A URL is</p> <p>a type of URI that identifies a resource via a representation of its primary access mechanism (e.g., its network "location"), rather than by some other attributes it may have.</p> <p>http://www.w3.org/TR/uri-clarification/</p> <p>However it remains the case that a URL is a URI and, used as a value of dc:identifier, it is still simply an identifier of a resource. It may identify a location or service because any type of resource (including a location or service) can be identified by a URI (including a URL) and described by a DC metadata description. However, it is not an inherent property of a URL that it identifies a location or service.</p> <p>By contrast, the value of the isAvailableAt property is a resource that provides access to the described resource.</p>
<p>Related non-DCMI terms</p>	<p>The Metadata Object Description Schema (MODS), version 3.0, includes an XML element</p> <ul style="list-style-type: none"> • <location> with "sub-elements": <ul style="list-style-type: none"> ○ <physicalLocation> ○ <url> <p>The MODS User Guide has not yet been updated to describe these version 3.0 sub-elements.</p> <p>For version 2.0, the location element is described:</p> <p>"location" identifies the institution or repository holding the resource or from which it is available. It may be expressed as text or as a code with the authority attribute used to designate the source of the code. <location> may include specific</p>

information to locate a resource within a collection, such as subcollection, or shelf number or it may just contain the name or code of an institution/repository.

<location> is equivalent to MARC 21 field 852 subfields \$a, \$b, \$j, and \$e. If information equivalent to these subfields is included, it is given in a string and is not parsed. Fuller holdings information may be included in the MODS <extension> element using an established XML holdings schema.

These are XML elements, not RDF properties. The proposed term would be used to capture information recorded in both of the sub-elements of MODS 3.0.

The **UK e-Government Metadata Standard (eGMS)** includes a metadata element:

- **Location**

Definition: The physical location of the resource.

Purpose: Enables the physical form of the resource to be found.

Notes: Location will mainly be used for items held in a physical format, e.g. paper files.

This is especially relevant for items listed in a metadatabase (a catalogue containing the metadata of resources but not the resources themselves). Metadatabases may refer to items not available in electronic format. It will also be valuable for electronic resources stored on physical media, e.g. magnetic tapes or CD-ROMs.

The eGMS Location element describes the relationship between a resource and its physical location. It is not used for the description of digital resources.

The **Australian Government Locator System (AGLS)** includes an element:

- **Availability**

Definition: How the resource can be obtained or contact information for obtaining the resource.

Comment: The Availability element is primarily used for non-electronic resources to provide information on how to obtain physical access to the resource.

The AGLS Availability element is used for the description of offline resources and (physical) services. In the description of a physical resource, it is used to describe a service that provides access to that physical resource; in the description of a service, it is used to describe the access conditions that apply to the service. It does not appear to be used for the description of digital resources.

The **New Zealand Government Locator System (NZGLS)** includes an element:

- **Availability**

Definition: How the resource can be obtained or contact information.

Purpose: The Availability element is mostly used for services and non-electronic resources, to provide information for searchers about physical access to the resource.

The NZGLS Availability element is used for the description of non-electronic resources and (physical) services. In the description of a physical resource, it is used to describe a service that provides access to that physical resource; in the description of a service, it is used to describe the access conditions that apply to the service. It does not appear to be used for the description of digital resources.

**Impact on
applications**

About the proposers	<p>The term is proposed by the Dublin Core Collection Description Working Group. One of the primary aims of the WG is the development of a Dublin Core Application Profile (DCAP) for collection-level description, i.e. for the description of a collection as a resource, rather than the description of the individual items that make up that collection.</p> <p>Records of the activity of the WG are available in the mailing list archives.</p> <p>The current draft of the Collection Description Application Profile is available at http://www.ukoln.ac.uk/metadata/dcmi/collection-application-profile/</p>
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Changes made in this version

- Expanded text under "Related DCMI terms".



Metadata associated with this resource: <http://dublincore.org/documents/collection-isAvailableAt/index.shtml.rdf>

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Topic: Scope of DCMI Namespaces
Modified: 2004-03-22 09:41, Monday
Maintainer: Tom Baker
Latest version: <http://dublincore.org/usage/meetings/2004/03/ISSUES/dcmi-namespaces/>
See also: <http://dublincore.org/usage/meetings/2004/03/ISSUES/>
Shepherd: Andy Powell

-- <http://www.ukoln.ac.uk/metadata/dcmi/dcmi-nmspc-scope/20040222/>

This document raises the question of what URIs should be assigned to terms proposed by DCMI WGs in the course of their work on DCAPs, when the use of those terms is limited to the description of a particular class of resource. Currently, although such terms may be conforming in terms of the Dublin Core model, it may be that they are considered inappropriate as candidates for inclusion in one of the DCMI Namespaces. Since this is the only means DCMI provides of assigning a persistent URIref, this means that the WG is unable to assign a DCMI-owned URI for the term, and must seek a third-party that can provide such a URIref.

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Title: Scope of DCMI Namespaces

Creator: Pete Johnston

Creator: Andy Powell

Date Issued: 2004-02-22

Identifier: <http://www.ukoln.ac.uk/metadata/dcmi/dcmi-nmspc-scope/20040222/>

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Is Replaced By: Not applicable

Latest Version: <http://www.ukoln.ac.uk/metadata/dcmi/dcmi-nmspc-scope/>

Status of Document: This is a DCMI [Working Draft](#).

Description of Document: This document raises the question of what URIs should be assigned to terms proposed by DCMI WGs in the course of their work on DCAPs, when the use of those terms is limited to the description of a particular class of resource. Currently, although such terms may be conforming in terms of the Dublin Core model, it may be that they are considered inappropriate as candidates for inclusion in one of the DCMI Namespaces. Since this is the only means DCMI provides of assigning a persistent URIref, this means that the WG is unable to assign a DCMI-owned URI for the term, and must seek a third-party that can provide such a URIref.

DCMI Assignment of URIs and DCMI Namespaces

A central part of DCMI's role is to support the creation, development, maintenance and use of **DCMI terms**. All DCMI terms are grouped into vocabularies which DCMI refers to as **DCMI Namespaces**. Currently there are three DCMI Namespaces and each DCMI Namespace is identified by a URI reference.

As part of the process of creating a new DCMI term, that term is assigned a **name** and a **URI reference**

that provides a persistent, globally unique identifier for the term. Following the DCMI Namespace Policy, the URIref given to an individual term is determined by the vocabulary, the DCMI Namespace, to which the term is assigned. The URIref for the term is derived by appending the name of the term to the URIref of that DCMI Namespace. DCMI supports the assignment of these URIrefs with a policy statement guaranteeing their persistence as identifiers.[\[1\]](#).

Proposals for new terms typically emerge from the work of DCMI Working Groups who identify specific requirements for extending the DCMI vocabularies, and draft descriptions in the form required by the DCMI Usage Board. The Usage Board evaluates proposals according to a published set of criteria. [\[2\]](#).

DCMI Working Groups, DC Application Profiles and Resource-Type-Specific Properties

DCMI has emphasised its role in supporting cross-domain resource discovery. The properties (elements and element refinements) within the DCMI Namespaces are all applicable to a wide range of resource types; none are constrained to the description of a specific class of resource.

The Usage Board process document does *not* explicitly exclude the possibility of accepting proposals for properties that are specific to the description of one class of resource, but there is a widely-held perception that *only* properties that are applicable to a wide range of resource types are candidates for inclusion as elements or element refinements in DCMI Namespaces.

However, some Working Groups chartered by DCMI are working to develop DC-based metadata schemas for the description of specific types of resource, in the form of **DC Application Profiles**. The DC Collection Description WG is one such group [\[3, 4\]](#). As part of this work, the group has suggested the use of properties that, while they are developed within the Dublin Core Grammatical Principles, are specific to the description of a Collection. For example, the term "Accrual Status" is used to provide

A statement of accrual policy (closed, passive, active, partial/selective), accrual method (purchase, deposit) and accrual periodicity (closed, irregular, periodic). [\[5\]](#).

The semantics of this property dictate that it is meaningful only when applied to the description of a resource to which "accruals" can be made, i.e. a Collection.

In order for these properties to be usable by implementers, they must be assigned (persistent, globally unique) URIrefs, so that those URIrefs can be cited in statements made within "instance metadata" records. But the only procedure currently available within DCMI for the assignment of persistent identifiers is to submit the terms to Usage Board as candidates for a DCMI Namespace. If this option is closed, then the WG then faces the question of what URIrefs to assign to these properties.

Options Available

1. **No resource-type-specific terms permitted in AP:** If the only terms permitted in a DCAP are those from metadata vocabularies applicable to generic resource types, then the descriptive capacity of the AP is potentially limited. And in the case of the DC CD WG, the WG was chartered specifically to produce a DCAP for a single type of resource.
2. **No URIref assigned:** The WG might decide not to assign a URIref to the property at all and to provide only a human readable description of the property. However if the WG fails to assign a URIref to a property, the goal of semantic interoperability that the WG was chartered to achieve is lost, or at least compromised, as individual implementers are left to assign (possibly many different) URIrefs to refer to the property defined by the WG. The assignment of URIrefs to its properties is critical to the goals of the WG.
3. **Third-party-owned URI assigned:** If the WG itself can not assign persistent URIrefs, and DCMI UB can not assign the term to a DCMI Namespace, then the WG must seek a third-party authority who can provide this function, which in turn raises issues of trust in the capacity of that provider to deliver the persistence offered by DCMI.
4. **Inclusion of property in current "dterms" DCMI Namespace:** It is widely understood that all properties in the dterms vocabulary are applicable to a wide range of resource types, and introducing resource-type-specific properties would be potentially confusing to users. It may also open up the prospect of many proposals for other resource-type-specific properties, and would almost certainly require new policy for the Usage Board.
5. **Inclusion of property in a new DCMI Namespace:** If the use of the dterms vocabulary is not appropriate, a separate vocabulary (DCMI Namespace) might be assigned for each resource-type-specific set of properties, with terms assigned URIrefs such as `http://purl.org/dc/collection/terms/accrualStatus`. Such a move would require the establishment of policies and procedures for the maintenance of those vocabularies by the Usage Board.

Issues Arising

If Option 3

What are implications for DCMI WGs? Is there a risk of WGs "stretching" the semantics of existing terms because it is difficult to find an authority who can provide persistent URIrefs for new terms? Would different WGs find different authorities to provide URIrefs? How would users perceive the use of a range of URIs owned by different authorities?

If Option 4 or Option 5

All elements/element refinements issued by DCMI to date have been applicable to a broad range of resource types, and issuing resource-type-specific properties represents a shift in the scope of DCMI activity.

How would such a shift be perceived by users? Does it introduce a potential overlap with the activity of non-DCMI bodies creating metadata vocabularies? What would be the educational/documentational challenges?

What are the technical implications? Use of `rdfs:domain`?

Are there any limits to the resource-types for which DCMI might create resource-type-specific properties?

If Option 5

If new vocabularies/namespaces are created, how would these vocabularies be managed? By Usage Board in the same way as the current DCMI Namespaces?

References

[1] Powell, Andy and Harry Wagner. *Namespace Policy for the Dublin Core Metadata Initiative (DCMI)*, (November 2001)

<http://dublincore.org/documents/dcmi-namespace/>

[2] Hillman, Diane and Stuart A. Sutton. *DCMI Usage Board (UB) Administrative Processes*, (February 2003)

<http://dublincore.org/usage/documents/process/>

[3] *DC Collection Description Working Group*

<http://dublincore.org/groups/collections/>

[4] *Dublin Core Collection Description Application Profile*

<http://www.ukoln.ac.uk/metadata/dcmi/collection-application-profile/>

[5] *Term Proposal: [Collection] Accrual Status*

<http://www.ukoln.ac.uk/metadata/dcmi/collection-accrualStatus/>



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Topic: DCMi Abstract Model
Modified: 2004-03-22 09:41, Monday
Maintainer: Tom Baker
Latest version: <http://dublincore.org/usage/meetings/2004/03/ISSUES/model/>
See also: <http://dublincore.org/usage/meetings/2004/03/ISSUES/>

Shepherd: Andy

SUMMARY (Tom)

Andy has revised the draft model:

<http://www.ukoln.ac.uk/metadata/dcmi/abstract-model/>

We need to discuss:

- aspects of this model that relate to Usage Board practice, such as the notion of Application Profile;
- use of dcterms:URI as the encoding scheme for those parts of encoded metadata that express a "value URI" as opposed to a "value string" (see email below);
- the relation of this document to other "foundational" documents maintained by DCMi, especially <http://dublincore.org/usage/documents/principles/>, which is included in the main packet (see discussion below).

Notes from Tom on the relation between the DCMi Abstract Model (DAM) and the existing DCMi Grammatical Principles (DGP) at <http://dublincore.org/usage/documents/principles/>.

I see two slightly different needs:

- 1) The need to present this new model to the general public in a self-contained and readable form.
- 2) The need for DCMi to have a set of URI-identified documents that makes optimal sense from the standpoints of citation and maintenance.

Need #1 is (almost) met by the existing draft, which contains almost all of the elements one would need for a self-contained presentation to a broad public. For this, in my opinion, it still needs a narrative introduction -- one which wraps the model in some historical context and briefly

states how the present document relates to earlier documents. With such a context, the article would basically be ready for D-Lib Magazine (let's call this "DLIB-DAM" as opposed to a "DCMI-DAM" to be maintained as a DCMI document).

In terms of Need #2, however, and with respect to other DCMI-maintained documents, the DAM "package" (model plus Appendixes) does not seem ideal:

-- The existing two-page "DCMI Grammatical Principles" (<http://dublincore.org/usage/documents/principles>) is almost completely subsumed in Section 8 (Terminology) of DAM.

The only things missing from DAM with respect to DGP are:

- a two-sentence scope statement that explicitly gets the definition of "term" from the DCMI Namespace Policy;
- a one-sentence definition of "appropriate value";
- a three-sentence discussion of Vocabulary Terms (with the recent addition of "Broader Than" and "Narrower Than").
- a one-sentence definition of "Application Profile" (along the lines of the one I suggested for DAM);
- a short footnote acknowledging a historical shift towards seeing Element Refinements as Properties.

Having to maintain DAM and DGP in sync creates potential error and confusion (and extra work). The solution could be either to delete DAM's Section 8 ("Terminology") and replace it with a pointer to DGP -- or vice versa. I am inclined to the latter, i.e. to delete the DGP document (redirecting its URI) and add some (but not all!) of the missing bits to DAM. Then the terminology section (Section 8) could perhaps be moved up to the front of DCMI-DAM -- boring for a D-Lib article but good practice for a specification.

-- Rather than leave the comparisons of RDF, XML, and XHTML encoding specs against the model in the DCMI-DAM document itself, I might sense either:

- 1) to fold each of the comparisons into the Specification in question;
- 2) to break out each comparison as a separate document with a citable URI and (in the longer term) subject to a separate processe of revision and approval; or
- 3) to bundle all of the comparisons into a single, citable document (but not as an Appendix to the model itself).

On the other hand, the appendix on RDF as it is currently written can help people who already know RDF understand the Abstract Model itself, so perhaps it should remain in the Appendix even if yet-to-be-written comparisons for DCMI's two RDF-related Specifications reside elsewhere.

I do not have a strong opinion about these options.

-- The note about structured values is on one level an abstract typology, but it is also framed as a response to the state of discussion as of the time of writing. One could perhaps split it out as a separate document with a separately citable URI, though it is only one page long so I do not feel strongly about this.

Note that following the suggestions would have the effect of making DCMI-DAM document shorter (just five pages) and turning the existing two-page "DCMI Grammatical Principles" into a redirect to DCMI-DAM.

Date: Wed, 25 Feb 2004 10:49:27 +0000
From: Andy Powell <a.powell@UKOLN.AC.UK>

When a vocabulary term gets a URI assigned to it, it changes from being a 'value string' to being a 'value URI' and the encoding needs to change to reflect that. So for example in XML, instead of

```
<dc:subject xsi:type="dcterms:DDC">Internet</dc:subject>
```

or

```
<dc:subject xsi:type="dcterms:DDC">004.678</dc:subject>
```

depending on your preference for numbers or words, the encoding would change to something more like

```
<dc:subject xsi:type="dcterms:URI">info:ddc/22/eng//004.678</dc:subject>
```

As usual, the RDF/XML encoding handles this rather better.

I'll write up something longer about this before the meeting. This is just to flag up the issue.

[Home](#) > [Documents](#) >**Title:**

DCMI Abstract Model

Creator: [Andy Powell](#)
 UKOLN, University of Bath, UK
[Mikael Nilsson](#)
 KMR Group, CID, NADA, KTH (Royal Institute of Technology), Sweden
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Date Issued: 2004-02-04

Identifier: <http://dublincore.org/documents/2004/02/04/abstract-model/>

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Latest Version: <http://dublincore.org/documents/abstract-model/>

Status of Document: This is a DCMI [Working Draft](#).

Description of Document: This document describes an abstract model for DCMI metadata descriptions.

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[References](#)[Acknowledgements](#)[Appendix A - A note about structured values](#)[Appendix B - The abstract model and RDF](#)[Appendix C - The abstract model and XML](#)[Appendix D - The abstract model and XHTML](#)

1. Introduction

This document specifies an abstract model for DCMI metadata descriptions [DCMI]. The primary purpose of this document is to provide a reference model against which particular DC encoding guidelines can be compared. To function well, a reference model needs to be independent of any particular encoding syntax. Such a reference model allows us to gain a better understanding of the kinds of descriptions that we are trying to encode and facilitates the development of better mappings and translations between different syntaxes.

2. DCMI abstract models

The abstract model of the *resources* being described by DCMI metadata descriptions is as follows:

- Each *resource* has zero or more *properties*.
- Each *property* has one or more *values*.
- Each *value* is a *resource* (the physical or conceptual entity that is associated with a *property* when it is used to describe a *resource*).
- Each *resource* may be a member of one or more *classes*.
(Note that where the *resource* is the *value* of a *property*, the *class* is referred to as a *vocabulary encoding scheme*.)
- Each *property* and *class* have some declared *semantics*.
- Each *class* may be related to one or more other *classes* by a refines (sub-class) relationship (where the two *classes* share some *semantics* such that all *resources* that are members of the *sub-class* are also members of the related *class*).
- Each *property* may be related to exactly one other *property* by a refines (sub-property) relationship (where the two *properties* share some *semantics* such that all valid *values* of the *sub-property* are also valid *values* of the related *property*).

The abstract model of DCMI metadata descriptions is as follows:

- A *description* is made up of one or more *statements* (about one, and only one, *resource*) and zero or one *resource URI* (a URI that identifies the *resource* being described).
- Each *statement* is made up of a *property URI* (a URI that identifies a *property*), zero or one *value URI* (a URI that identifies a *value* of the *property*), zero or one *encoding scheme URI* (a URI that identifies the *class* of the *value*) and zero or more *value representations* of the *value*.
- Each *property* is an attribute of the *resource* being described.
- Each *property URI* may be repeated in multiple *statements*.
- The *value representation* may take the form of a *value string*, a *rich value* or a *related description*.
- Each *value string* is a simple, human-readable string that represents the *value* of the *property*.
- Each *value string* may have an associated *encoding scheme URI* that identifies a *syntax encoding scheme*.
- Each *value string* may have an associated *value string language* that is an ISO language tag (e.g. en-GB).
- Each *rich value* is some marked-up text, an image, a video, some audio, etc. or some combination thereof that represents the *resource* that is the *value* of the *property*.
- Each *related description* is a description of (i.e. some metadata about) the *resource* that is the *value* of the *property*.

The italicised terms used above are defined in the terminology section below. A number of things about the model are worth noting:

- A *related description* describes a related *resource* and is therefore not part of the *description* - for example, a *related description* may provide metadata about the person that is the creator of the described *resource*.
- *Syntax encoding schemes* are also known as 'datatypes' in some contexts.
- In DCMI metadata *descriptions*, the *class* of the *resource* being described is normally indicated by the *value* of the DC Type *property*.

The DCMI abstract models for resources and descriptions are represented as UML class diagrams [UML] in figures 1 and 2.

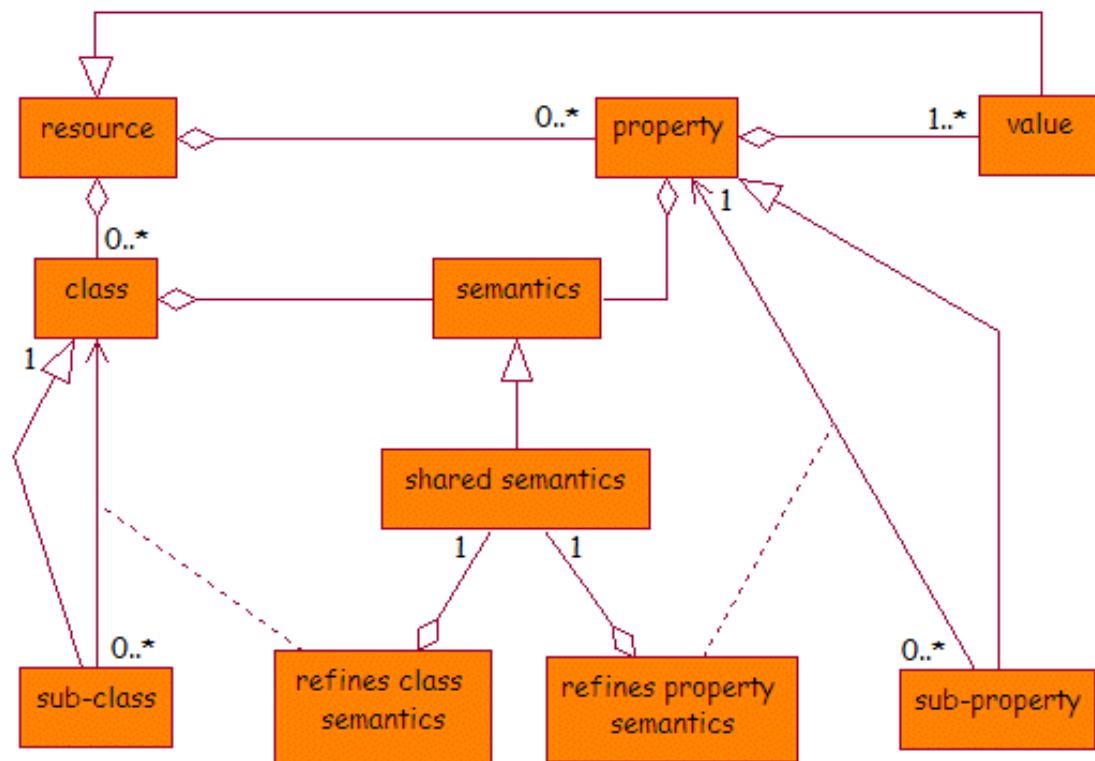
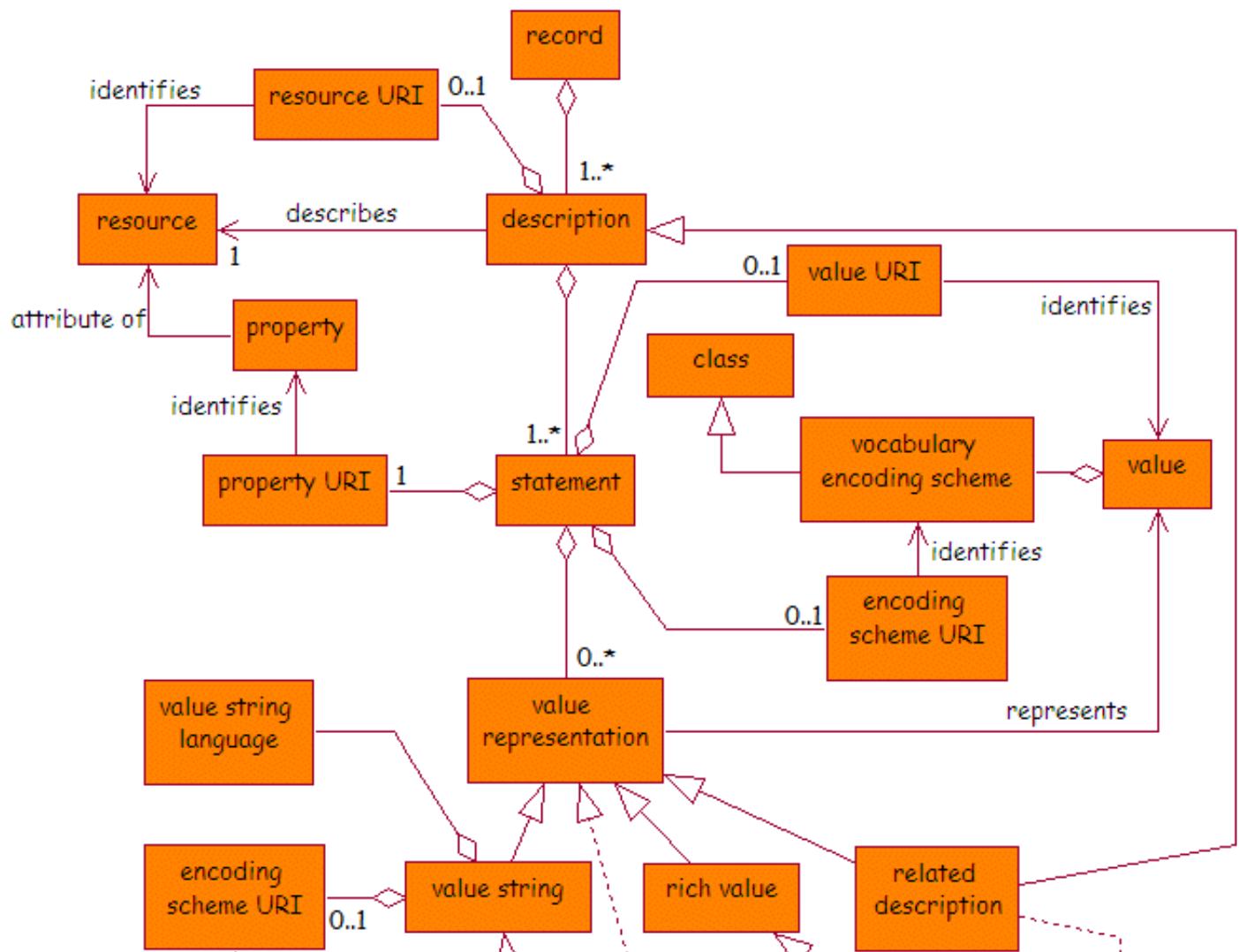


Figure 1 - the DCMI resource model



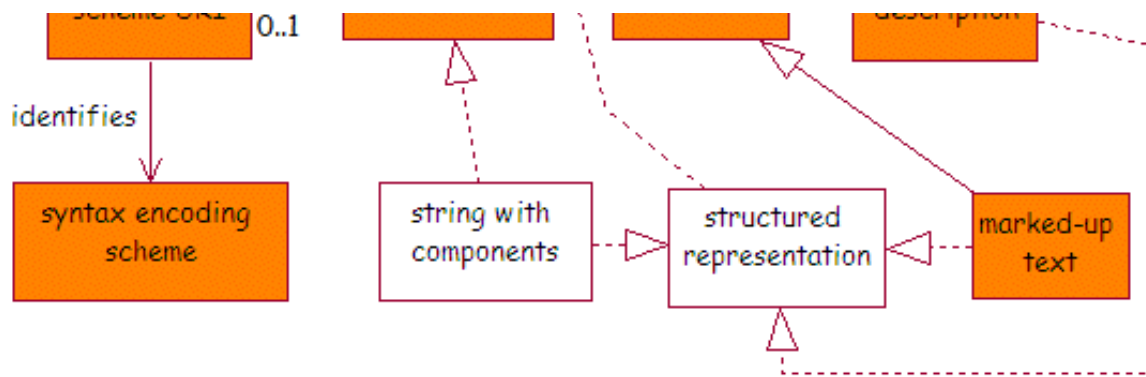


Figure 2 - the DCMI description model

Readers that are not familiar with UML class diagrams should note that lines ending in a block-arrow should be read as 'is' or 'is a' (for example, 'a *vocabulary encoding scheme* is a *class*') and that lines starting with a block-diamond should be read as 'contains a' or 'has a' (for example, 'a *statement* contains a *property URI*'). Other relationships are labelled appropriately. The classes represented by the clear boxes are not mentioned explicitly in the textual description of the abstract model above but are discussed in Appendix A. Note that the UML modelling used here shows the abstract model but is not intended to form a suitable basis for the development of DCMI software applications.

3. Records and descriptions

The abstract model described above indicates that each *property* used in a *description* must be an attribute of the *resource* being described. This is commonly referred to as the 1:1 principle - the principle that a DCMI metadata *description* describes one, and only one, resource.

However, real-world metadata applications tend to be based on loosely grouped sets of *descriptions* (where the described *resources* are typically related in some way). Such sets are often referred to as metadata *records*. For example, a metadata *record* might comprise *descriptions* of both a painting and the artist. Furthermore, it is often the case that the record will also contain a description about the metadata *record* itself (sometimes referred to as 'admin metadata' or 'meta-metadata').

This document defines a DCMI metadata *record* as follows:

- A DCMI metadata *record* is a set of one or more *descriptions* about one or more related *resources* instantiated according to one of the DCMI encoding guidelines (XHTML meta tags, XML, RDF/XML, etc.) [[DCMI-ENCODINGS](#)].

4. Values

A DCMI metadata *value* is the physical or conceptual entity that is associated with a *property* when it is used to describe a *resource*. For example, the *value* of the DC Creator *property* is a person, organisation or service - a physical entity. The *value* of the DC Date *property* is a point in time - a conceptual entity. The *value* of the DC Coverage *property* may be a geographic region or country - a physical entity. The *value* of the DC Subject *property* may be a concept - a conceptual entity - or a physical object or person - a physical entity. Each of these entities is a *resource*.

The *value* may be identified using a *value URI*; the *value* may be represented by one or more *value strings* and/or *rich values*; the *value* may have some *related descriptions* - but the *value* is a *resource*.

5. Simple and qualified DC

A Dublin Core Application Profile [[DCAP](#)] is a declaration specifying, at a minimum, which *properties* are used within a particular metadata application. Optionally, an application profile may describe how those *properties* have been constrained or adapted for

particular purposes.

The commonly used notions of simple and qualified Dublin Core are application profiles for two types of *records* based on DCMI terms. These notions can be described using the abstract model as follows:

- A simple DC record is a *record* that:
 - conforms to the abstract model,
 - comprises only a single *description*,
 - uses only the 15 *properties* in the Dublin Core Metadata Element Set [[DCMES](#)],
 - makes no use of *value URIs*, *encoding schemes*, *rich values* or *related descriptions*.
- A qualified DC record is a *record* that:
 - conforms to the DCMI abstract model,
 - contains at least one *property* taken from the DCMI Metadata Terms recommendation [[DCTERMS](#)]).

6. Dumb-down

The process of translating a qualified DC metadata record into a simple DC metadata record is normally referred to as 'dumbing-down'. The process of dumbing-down can be separated into two parts: property dumb-down and value dumb-down. Furthermore, each of these processes can be approached in one of two ways. Informed dumb-down takes place where the software performing the dumb-down algorithm has knowledge built into it about the *property* relationships and *values* being used within a specific DCMI metadata application. Uninformed dumb-down takes place where the software performing the dumb-down algorithm has no prior knowledge about the *properties* and *values* being used.

Based on this analysis, it is possible to outline a 'dumb-down algorithm' matrix, shown below:

	Element dumb-down	Value dumb-down
Uninformed	Ignore any <i>property</i> that isn't in the Dublin Core Metadata Element Set [DCMES].	Use <i>value URI</i> (if present) or <i>value string</i> as new <i>value string</i> .
Informed	Recursively resolve sub-property relationships until one of the 15 properties in the Dublin Core Metadata Element Set [DCMES] is reached, otherwise ignore.	Use knowledge of the <i>related descriptions</i> or the <i>value string</i> to create a new <i>value string</i> .

In all cases, the dumb-down algorithm should also:

- ignore any *related descriptions* and *rich values*,
- ignore any *encoding scheme URIs*.

Note that software should make use of the DCMI term declarations represented in RDF schema language [[DC-RDFS](#)] and the DC XML namespaces [[DC-NAMESPACES](#)] to automate the resolution of sub-property relationships.

7. Encoding guidelines

Particular encoding guidelines (HTML meta tags, XML, RDF/XML, etc.) [[DCMI-ENCODINGS](#)] do not need to encode all aspects of the abstract model described above. However, DCMI recommendations that provide encoding guidelines should refer to the DCMI abstract model and indicate which parts of the model are encoded and which are not. In particular, encoding guidelines

should indicate whether any *rich values* or *related descriptions* associated with a *statement* are embedded within the *record* or are encoded in a separate *record* and linked to it using a URI.

Appendices B, C and D below provide a summary comparison between the abstract model and the RDF/XML, XML and XHTML encoding guidelines.

8. Terminology

This document uses the following terms:

resource

A *resource* is anything that has identity. Familiar examples include an electronic document, an image, a service (e.g., "today's weather report for Los Angeles"), and a collection of other *resources*. Not all *resources* are network "retrievable"; e.g., human beings, corporations, concepts and bound books in a library can also be considered *resources*.

resource URI

A *resource URI* is a URI that identifies a single *resource*.

property

A *property* is a specific aspect, characteristic, attribute, or relation used to describe *resources*.

property URI

A *property URI* is a URI that identifies a single *property*.

element

Within DCMI, *element* is typically used as a synonym for *property*. However, it should be noted that the word *element* is also commonly used to refer to a structural markup component within an XML document.

element refinement

An *element refinement* is a *property* of a *resource* that shares the meaning of a particular DCMI *property* but with narrower semantics. Since *element refinements* are *properties*, they can be used in metadata *descriptions* independently of the *properties* they refine. In DCMI practice, an *element refinement* refines just one parent DCMI *property*.

description

A *description* is made up of one or more *statements* about one, and only one, *resource*.

statement

A *statement* is made up of a *property URI* (a URI that identifies a *property*), zero or one *value URI* (a URI that identifies a *value* of the *property*), zero or one *encoding scheme URI* (a URI that identifies the *class* of the *value*) and zero or more *value representations* of the *value*.

record

A *record* is a set of one or more *descriptions* about one or more related *resources*, instantiated according to one of the DCMI encoding guidelines (XHTML meta tags, XML, RDF/XML, etc.) [[DCMI-ENCODINGS](#)].

value

A *value* is the physical or conceptual entity that is associated with a *property* when it is used to describe a *resource*.

value URI

A *value URI* is a URI that identifies the *value* of a *property*.

value representation

A *value representation* is a surrogate for (i.e. a representation of) the *value*.

value string

A *value string* is a simple string that represents the *value* of a *property*. In general, a *value string* should not contain any *marked-up text*.

value string language

The *value string language* indicates the language of the *value string*.

vocabulary encoding scheme

A *vocabulary encoding scheme* is a *class* that indicates that the *value* of a *property* is taken from a controlled vocabulary (or concept-space), such as the the Library of Congress Subject Headings.

syntax encoding scheme

A *syntax encoding scheme* indicates that the *value string* is formatted in accordance with a formal notation, such as "2000-01-01" as the standard expression of a date.

encoding scheme

Encoding scheme is the generic term for *vocabulary encoding scheme* and *syntax encoding scheme*.

encoding scheme URI

An *encoding scheme URI* is a URI that identifies an *encoding scheme*. For all DCMI recommended *encoding schemes*, the URI is constructed by concatenating the name of the *encoding scheme* with the DCTerms namespace URI.

marked-up text

A string that contains HTML, XML or other markup (for example TeX) and that is associated with the *value* of a *property*.

rich value

Some *marked-up text*, an image, a video, some audio, etc. (or some combination thereof) that is associated with the *value* of a *property*.

related description

A *related description* is a *description* of a *resource* that is related to the *resource* being described.

qualifier

Qualifier was the generic term used for the terms that are now usually referred to specifically as *element refinements* or *encoding schemes*.

structured value

Structured value is the generic term for the following:

- A *value string* that contains machine-parsable component parts (and which has an associated *syntax encoding scheme* that indicates how the component parts are encoded within the string).
- Some *marked-up text*.
- A *related description*

References

DCMI

Dublin Core Metadata Initiative

<<http://dublincore.org/>>

UML

The Unified Modeling Language User Guide

Grady Booch, James Rumbaugh and Ivar Jacobson, Addison-Wesley, 1998

DCTERMS

DCMI Metadata Terms

<<http://dublincore.org/documents/dcmi-terms/>>

DCMES

Dublin Core Metadata Element Set, Version 1.1: Reference Description

<<http://dublincore.org/documents/dces/>>

DCMI-ENCODINGS

DCMI Encoding Guidelines

<<http://dublincore.org/resources/expressions/>>

DCAP

DCMI Usage Board Review of Application Profiles

<<http://dublincore.org/usage/documents/profiles/>>

DC-RDFS

DCMI term declarations represented in RDF schema language

<<http://dublincore.org/schemas/rdfs/>>

DC-NAMESPACES

Namespace Policy for the Dublin Core Metadata Initiative (DCMI)

<<http://dublincore.org/documents/dcml-namespaces/>>

Acknowledgements

Thanks to Tom Baker, the members of the DC Usage Board and the members of the DC Architecture Working Group for their comments on previous versions of this document.

Appendix A - A note about structured values

This appendix discusses 'structured values', as they are used in DC metadata applications at the time of writing.

Many existing applications of DC metadata have attempted to encode relatively complex descriptions (i.e. descriptions that contain more than simply a property and its string value). These attempts have been loosely referred to as 'structured values'. It is possible to identify a number of different kinds of structured values. Four are enumerated below. The first two of these are recommended by the DCMI, in the sense that there are a number of existing encoding schemes that define values that conform to these definitions of structured values. The latter two are not currently recommended, but it is likely that they are in fairly common usage across metadata applications worldwide.

Labelled strings

These are strings that contain explicitly labelled components. Examples of this kind of structured value include:

DCSV

and the various DCMI syntax encoding schemes built on it - Period, Point and Box. An example of the use of DCSV in Period is:

```
<meta name="dcterms:temporal"
      scheme="dcterms:Period"
      content="start=Cambrian period; scheme=Geological timescale; name=Phanerozoic
Eon; " />
```

vCard

for example:

```
<meta name="dc:creator"
```

```
content="BEGIN:VCARD\nORG:University of Oxford\nEND:VCARD\n" />
```

Note that vCard is not currently a DCMI recommended encoding scheme.

Unlabelled strings

These are strings that contain implicit components within the string, i.e. the components are determined based solely on their position within the string. Examples of this kind of structured value include:

W3CDTF

the date-time format used within most DC metadata. For example:

```
<meta name="dc:date"
      scheme="dcterms:W3CDTF"
      content="2003-06-10" />
```

Marked-up text

These are strings containing 'presentational' or other markup, for example adding paragraph breaks, superscripts or chemical/mathematical markup to a dc:description. It is possible to characterise various kinds of markup as follows:

- Markup based on a version of [HTML](#).
- Markup based on other XML-based languages such as [CML](#) and [MathML](#).
- Non-XML markup languages such as [TeX](#).

Related resource descriptions

These are metadata descriptions that describe a second resource (i.e. not the resource being described by the DC description). For example, a related description associated with the value of dc:creator could contain a complete description of the resource author (including birthday, eye-colour and favourite beverage if desired!).

In the past, 'related resource descriptions' have tended to be encoded using XML, vCard (see above) or by inventing multiple 'refinements' of DCMES properties (for example DC.Creator.Address). The RDF/XML encoding of DC (see below) provides us with a more thorough modelling of related metadata records through the use of multiple linked nodes in an RDF graph.

In DC metadata records, the following properties (and their element refinements) are used to provide the name or identifier of a second resource that is related to the resource being described:

- dc:creator
- dc:contributor
- dc:publisher
- dc:relation
- dc:source

In the case of the first three, this is typically done by providing the name (or in some cases the name and a small amount of additional information in order to better identify the person or organisation) of the related resource as the value string.

In the case of the last two, this is typically done by providing the URI (or some other identifier) of the related resource as the value URI. However, where no identifier is available, the name of the related resource can be provided instead (or as well) using the value string.

It should be noted that the value strings of these properties (and their element refinements) are not intended to be used to provide full descriptions of the related resource.

Summary

The categories outlined above are not watertight and there are certainly overlaps between them. For example, labelled strings can be viewed as a type of non-XML markup language. In addition, there will be cases where marked-up text (e.g. MathML) can be viewed as a related resource description.

Nevertheless, the purpose of the categorisation used here is to try and analyse existing usage of complex metadata structures within current DC metadata applications. In the context of the abstract model proposed here, all the types of structured values outlined above form part of the DCMI abstract model:

- A labelled string should be treated as a *related description* (though it should be noted that DCSV and the various DCMI syntax encoding schemes built on it - Period, Point and Box - are currently encoded as *value strings* with an appropriate *syntax encoding scheme*).
- An unlabelled string should be treated as a *value string* with an appropriate *syntax encoding scheme*.
- Marked-up text should be treated as a *rich value*.
- A related resource description should be treated as a *related description*.

Appendix B - The abstract model and RDF

This appendix discusses the relationship between the DCMI abstract model and the Resource Description Framework (RDF).

RDF currently provides DCMI with the richest encoding environment of the available encoding syntaxes. It is therefore worth taking a brief look at how the abstract model described here compares with the RDF model.

Note that the intention here is not to provide a full and detailed description of how to encode DC metadata records in RDF. Instead, three simple examples of the use of DC in RDF are considered.

Example 1: dc:creator

Figure 3 shows a simple RDF graph (and the RDF/XML document that represents it). The graph shows a resource with a single property (dc:creator). The *value* of the property is a second (blank) node, representing the creator of the resource. This second blank node has several properties, used to describe the creator, and an rdfs:label property that is used to provide the *value string* for the dc:creator property.

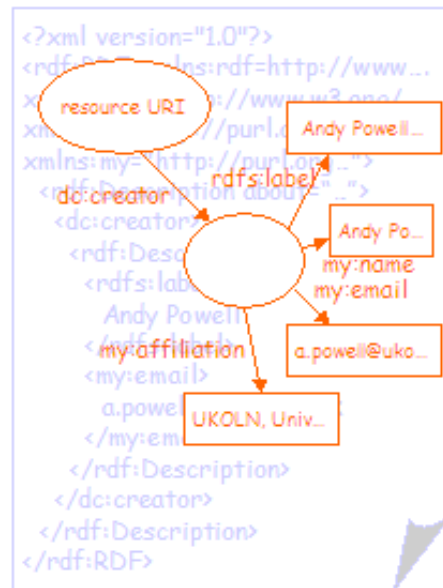


Figure 3

Figure 4 shows the same information separated into two graphs. In this case the *related description* that describes the creator has been more clearly separated from the description of the resource by moving it into a separate RDF/XML document. In order to do this, the node representing the *value* has been assigned a *value URI*, allowing the two nodes in the two RDF/XML documents to be treated as representing the same thing.

The *related description* in the second RDF/XML document is linked to the first using the `rdfs:seeAlso` property and the URI of the RDF/XML document. Note that it is not strictly necessary to separate the two graphs in this way; it is perfectly valid to represent the second graph as a sub-graph of the first, as shown in figure 3. However, for the purposes of this document, the two graphs have been separated in order to more clearly differentiate the *description* from the *related description*. In some cases it will be good practice to facilitate this separation anyway. For example, in order to serve the second graph from a directory service of some kind.

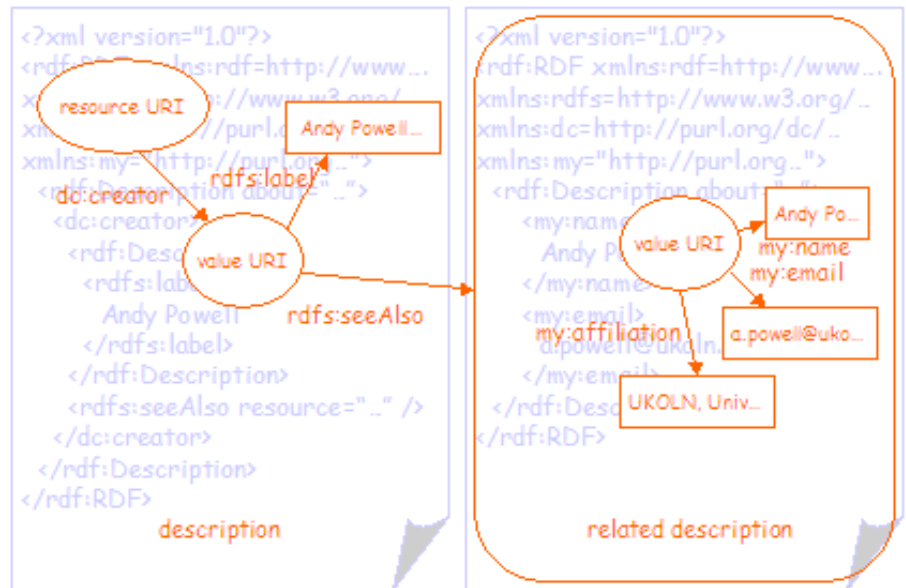


Figure 4

Example 2: dc:subject

Figure 5 shows a second simple RDF graph (and the RDF/XML document that represents it). The graph shows a resource with a single property (`dc:subject`). The *value* of the property is a second (blank) node, representing the subject of the resource. This second blank node has an `rdfs:label` property that is used to provide the *value string* for the `dc:subject` property, an `rdfs:value` property that is used to provide the classification scheme notation and an `rdfs:type` property to provide the encoding scheme URI.

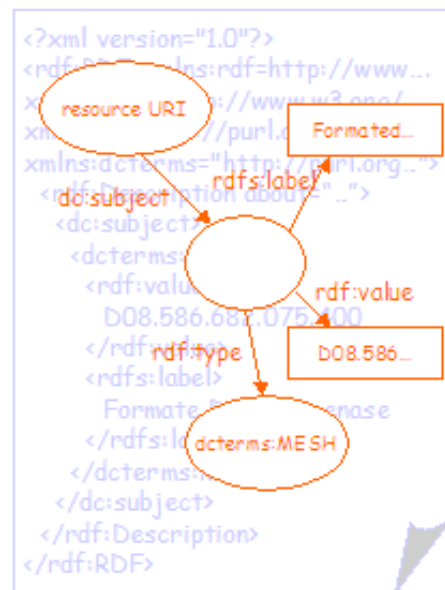


Figure 5

Figure 6 shows the same information separated into two graphs. In this case the *related description* that describes the subject has been more clearly separated from the description of the resource by moving it into a separate RDF/XML document. In order to do this, the node representing the *value* has been assigned a *value URI*, allowing the two nodes in the two RDF/XML documents to be treated as representing the same thing.

The *related description* in the second RDF/XML document is linked to the first using the `rdfs:seeAlso` property and the URI of the RDF/XML document. Note that it is not strictly necessary to separate the two graphs in this way; it is perfectly valid to represent the second graph as a sub-graph of the first, as shown in figure 5. However, for the purposes of this document, the two graphs have been separated in order to more clearly differentiate the *description* from the *related description*. In some cases it will be good practice to facilitate this separation anyway. For example, in order to serve the second graph from a terminology service of some kind.

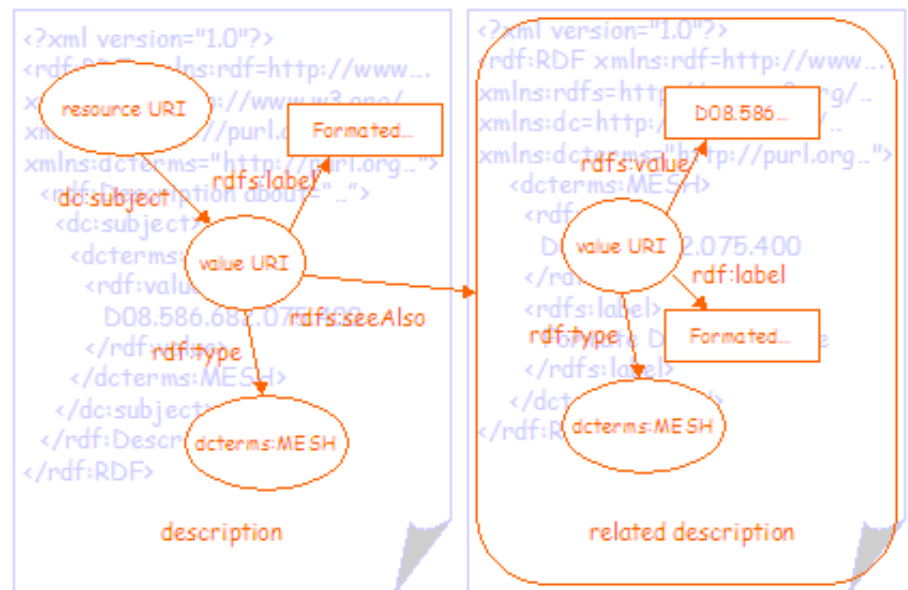


Figure 6

Example 3: `dc:description`

Figure 7 shows a third simple RDF graph (and the RDF/XML document that represents it). The graph shows a resource with a single property (dc:description). The *value* of the property is a second (blank) node with an rdfs:label property that is used to provide the *value string* for the dc:description property. The second node also has an rdfs:seeAlso property that links to a *rich value* - in this case some HTML marked-up text that provides a richer representation of the description.

Note that it is possible to embed the marked-up text within a single RDF graph (using rdf:parseType="Literal"). However, this is not shown here.

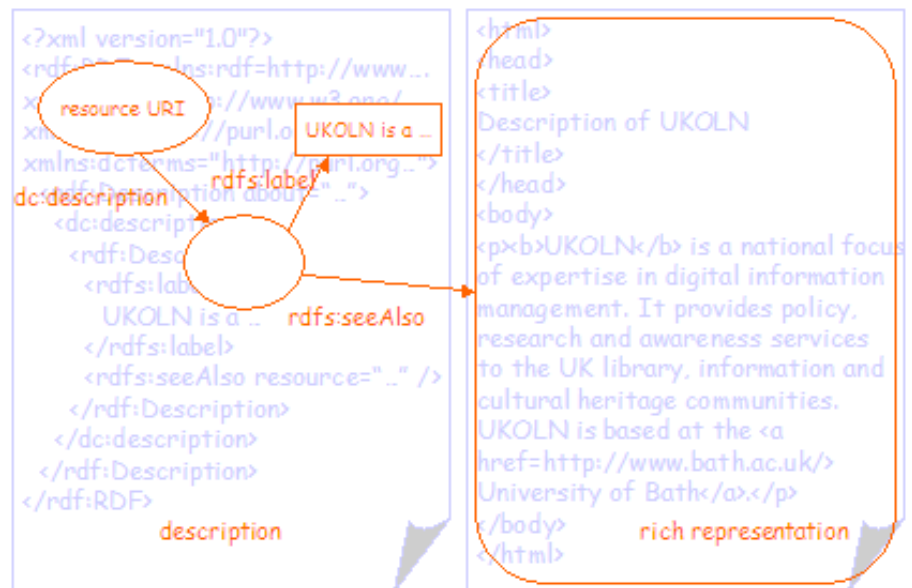


Figure 7

Summary

By re-visiting the second figure from example 2 (figure 6) it is possible to layer the terminology used in the abstract models above over the RDF graph.

All aspects of the DCMI abstract model are supported by the RDF encoding guidelines.

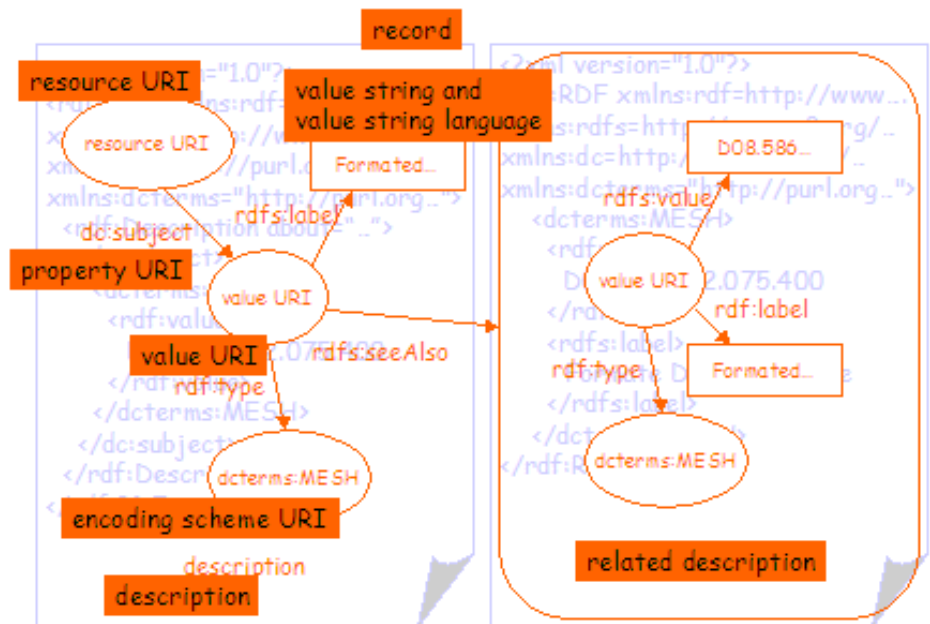


Figure 8

Appendix C - The abstract model and XML

This appendix compares the DCMI abstract model with the [Guidelines for implementing Dublin Core in XML](http://www.ukoln.ac.uk/metadata/dcmi/abstract-model/) DCMI recommendation.

Simple DC

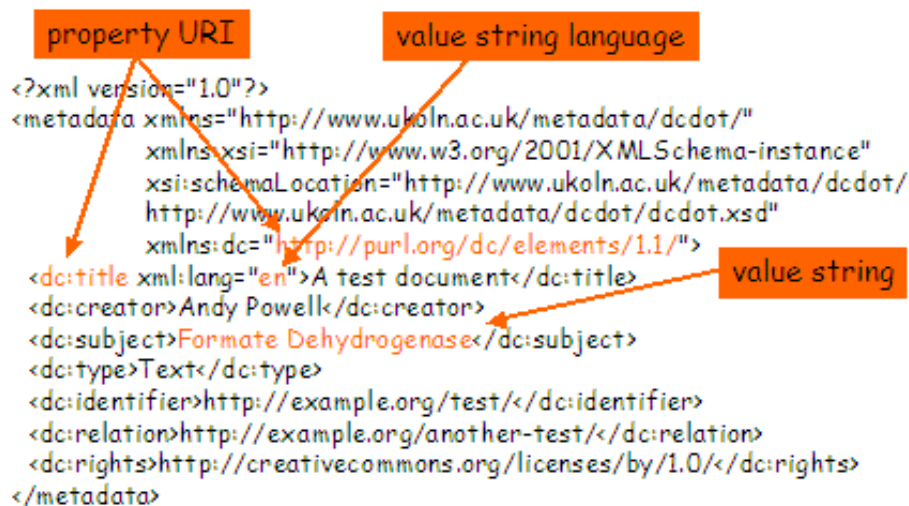


Figure 9

Figure 9 shows an example simple DC description encoded according to the XML guidelines above. The example shows how the encoding supports the *property URI*, *value string* and *value string language* aspects of the DCMI abstract model. It should be noted that all the *values* that are encoded in this syntax are represented by *value strings*, even those that look, to the human reader, as though they are URIs.

Qualified DC

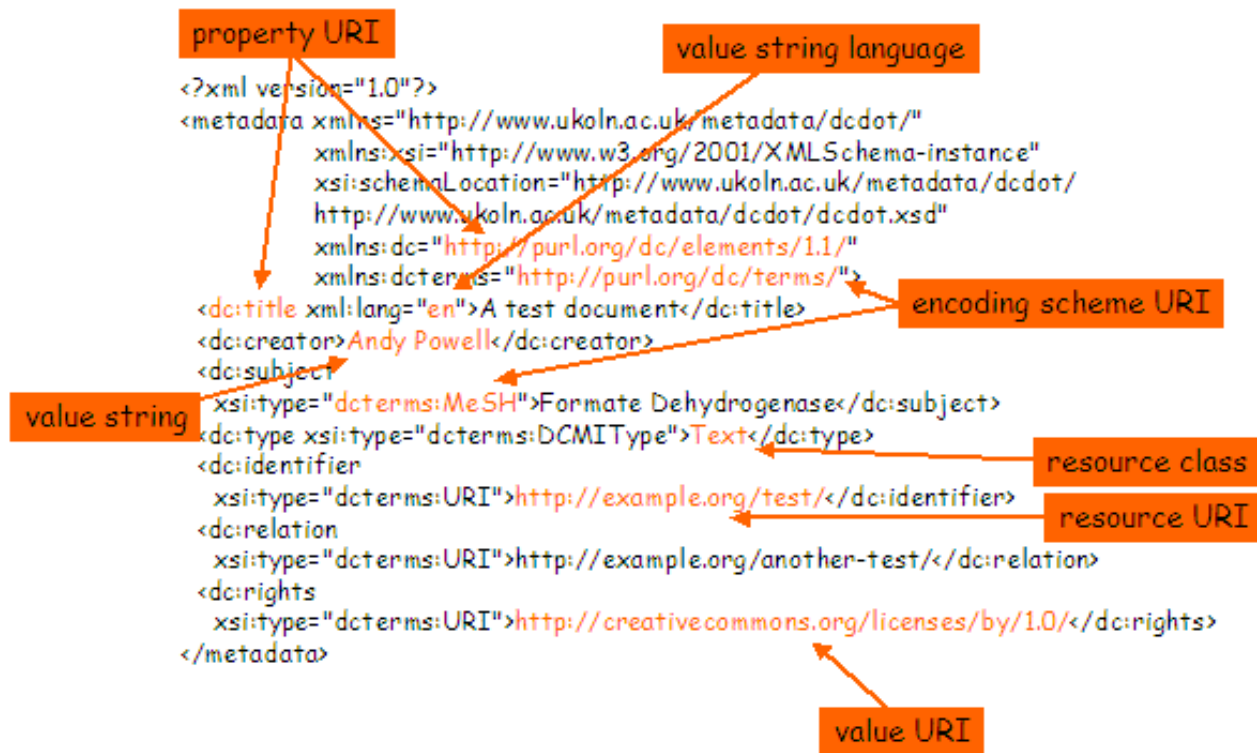


Figure 10

Figure 10 shows an example qualified DC description encoded according to the XML guidelines above. This example shows how the encoding supports the *property URI*, *value string*, *value string language*, *value URI*, *encoding scheme URI*, *resource URI* and *resource class* aspects of the DCMI abstract model. Note that the 'dcterms:URI' *encoding scheme* is used to indicate that the content of the XML element is a *value URI*. Note also that, although the *resource class* is indicated, the *class URI* is not encoded anywhere in this description.

Summary

The following aspects of the DCMI abstract model are supported by the [Guidelines for implementing Dublin Core in XML](#) recommendation:

- *properties*
- *property URIs*
- *value strings*
- *value string languages*
- *value URIs*
- *encoding schemes*
- *encoding scheme URIs*
- *resource URIs*
- *resource classes*

The following aspects of the DCMI abstract model are not supported:

- *rich values*
- *related descriptions*
- *property/sub-property relationships*
- *resource class URIs*

The following constraints apply:

- Each *property* may have one *value string* (but not more than one) or a *value URI* but not both.
- *Vocabulary encoding schemes* and *syntax encoding schemes* are handled in exactly the same way.
- It is only possible to encode a *resource URI* by using a combination of the DC Identifier *property* and the DCTERMS URI *encoding scheme*. Thus, it is not possible to encode the *resource URI* in a simple DC record encoded using the XML encoding guidelines.

Appendix D - The abstract model and XHTML

This appendix compares the DCMI abstract model with the [Expressing Dublin Core in HTML/XHTML meta and link elements](#) DCMI recommendation.

Simple DC



Figure 11

Figure 11 shows an example simple DC description encoded according to the XHTML guidelines above. This example shows how the encoding supports the *property URI*, *value string*, *value string language* and *value URI* aspects of the DCMI abstract model. Again, it should be noted that the value of the DC Identifier *property* represented in this encoding syntax is denoted by a *value string*, even though it looks, to the human reader, as though it is a URI.

Qualified DC



Figure 12

Figure 12 shows an example qualified DC description encoded according to the XHTML guidelines above. This example shows how the encoding supports the *property URI*, *value string*, *value string language*, *value URI*, *encoding scheme URI*, *resource URI* and *resource class* aspects of the DCMI abstract model. Again, note that the 'dcterms:URI' *encoding scheme* is used to indicate that the content of the XHTML `<meta>` element is a *value URI* and that, although the *resource class* is indicated, the *class URI* is not encoded anywhere in this description.

Summary

The following aspects of the DCMI abstract model are supported by the [Expressing Dublin Core in HTML/XHTML meta and link elements](#) DCMI recommendation:

- *properties*
- *property URIs*
- *value strings*
- *value string languages*
- *value URIs*
- *encoding schemes*
- *encoding scheme URIs*
- *resource URIs*
- *resource classes*

The following aspects of the DCMI abstract model are not supported:

- *rich values*
- *related descriptions*
- *property/sub-property relationships*
- *resource class URIs*

The following constraints apply:

- Each *property* may have one *value string* (but not more than one) or a *value URI* but not both.
- *Vocabulary encoding schemes* and *syntax encoding schemes* are handled in exactly the same way.
- The *resource URI* may be implicit from the URI of the *resource* into which the *record* is embedded. Alternatively, the *resource URI* can be explicitly encoded by using a combination of the DC Identifier *property* and the DCTERMS URI *encoding scheme*.



Metadata associated with this resource: <http://dublincore.org/documents/abstract-model/index.shtml.rdf>

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[Home](#) > [Usage](#) > [Documents](#) > [Principles](#) >

Title: DCMI Grammatical Principles
Creator: [DCMI Usage Board](#)
Identifier: <http://dublincore.org/usage/documents/2003/11/18/principles/>
Latest version: <http://dublincore.org/usage/documents/principles/>
Replaces: <http://dublincore.org/usage/documents/2003/02/07/principles/>
Date modified: 2003-11-18
Description: This document describes the grammatical principles that govern the decisions of the Usage Board as the maintenance body for DCMI metadata semantics. See also a related document, "DCMI Usage Board Mission" [1], and the Dublin Core Metadata Glossary [8].

1. Scope of this grammar

This grammar presents the typology of DCMI metadata terms and describes the principles underlying their definition and use. As defined in the "Namespace Policy for the Dublin Core", a DCMI term is "a DCMI element, a DCMI qualifier or term from a DCMI-maintained controlled vocabulary." A DCMI namespace, in turn, is "a collection of DCMI terms" [2].

2. Elements and qualifiers

2.1. Elements

An Element is a property of a resource. As intended here, "properties" are attributes of resources -- characteristics that a resource may "have", such as a Title, Publisher, or Subject.

2.2. Qualifiers

"Qualifiers" is the generic heading traditionally used for terms now usually referred to specifically as Element Refinements or Encoding Schemes.

2.2.1. Element Refinements.

An Element Refinement is a property of a resource which

shares the meaning of a particular DCMI Element but with narrower semantics. In some application environments (notably HTML-based encodings), Element Refinements are used together with Elements in the manner of natural-language "qualifiers" (i.e., adjectives) [3]. However, since Element Refinements are properties of a resource (like Elements), Element Refinements can alternatively be used in metadata records independently of the properties they refine [9]. In DCMI practice, an Element Refinement refines just one parent DCMI property.

2.2.2. Encoding Schemes.

An Encoding Scheme provides contextual information or parsing rules that aid in the interpretation of a term value. Such contextual information may take the form of controlled vocabularies, formal notations, or parsing rules. If an Encoding Scheme is not understood by a client or agent, the value may still be useful to a human reader. There are two types of Encoding Scheme:

2.2.2.1. Vocabulary Encoding Schemes

Vocabulary Encoding Schemes indicate that the value is a term from a controlled vocabulary, such as the value "China - History" from the Library of Congress Subject Headings.

2.2.2.2. Syntax Encoding Schemes

Syntax Encoding Schemes indicate that the value is a string formatted in accordance with a formal notation, such as "2000-01-01" as the standard expression of a date.

2.3. Dumb-down Principle

The qualification of Dublin Core Elements is guided by a rule known colloquially as the Dumb-Down Principle. According to this rule, a client should be able to ignore any qualifier and use the value as if it were unqualified. While this may result in some loss of specificity, the remaining term value (minus the qualifier) must continue to be generally correct and useful for discovery. Qualification is therefore supposed only to refine, not extend the semantic scope of an Element.

2.4. Appropriate values

Best practice for a particular Element or Qualifier may vary by context. Definitions may provide some guidance; other information may be found in the Usage Guide [6].

3. Vocabulary Terms

The Usage Board maintains the DCMI Type Vocabulary [7] -- a general, cross-domain list of recommended terms that may be used as values for the Resource Type element to identify the genre of a resource. The member terms of the DCMI Type

Vocabulary are called Vocabulary Terms.

If a Vocabulary Term is hierarchically related to another Vocabulary Term, the relationship indicators "Broader Than" and "Narrower Than" are used reciprocally in their term declarations.

4. Application Profiles

In DCMI usage, an Application Profile is a declaration of which metadata terms an organization, information resource, application, or user community uses in its metadata [10].

REFERENCES

- [1] <http://dublincore.org/usage/documents/mission/>
- [2] <http://dublincore.org/documents/2001/10/26/dcmi-namespace/>
- [3] <http://www.ietf.org/rfc/rfc2731.txt>
- [4] <http://www.ukoln.ac.uk/metadata/dcmi/dc-xml-guidelines/>
- [5] <http://dublincore.org/documents/dcq-rdf-xml/>
- [6] <http://dublincore.org/documents/usageguide/>
- [7] <http://dublincore.org/usage/terms/dcmitype/>
- [8] <http://dublincore.org/documents/2001/04/12/usageguide/glossary.shtml>
- [9] A shift from the former view to the latter is reflected in the names assigned by the Usage Board to Element Refinements, with a move away from adjective-like names such as "created" (approved in July 2000) towards noun-phrase-like names such as "dateCopyrighted" (approved in July 2002). One consequence of using Element Refinements independently of Elements is that information about relationships between them will reside outside of the metadata records in separate schemas that applications needing to perform operations such as dumb-down will need to consult.
- [10] <http://dublincore.org/usage/documents/profiles/>



Metadata associated with this resource: <http://dublincore.org/usage/documents/principles/index.shtml.rdf>

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DC Usage Board

Issues arising from DCMI Abstract Model

This document summarises issues for discussion at the March 2004 meeting of the DC Usage Board that arise out of the [DCMI Abstract Model working draft](#).

This is not a full list of issues arising from the AM - just those that appear to be of interest to the UB. Apart from the first two, all these issues are primarily for information at this stage - no immediate decisions or actions are required by the UB.

Relation of the AM to other "foundational" documents maintained by DCMI

There are a number of older DCMI documents that have overlaps with the DCMI Abstract Model Working Draft. I don't think this matters too much, provided the terminology used across all the documents is the same and appropriate linkages are put in place between documents.

More drastic action could be taken, like removing some of the older documents. However, I don't think that would be justified at this stage.

Action: Align terminology at appropriate time.

Action: Add links from older DCMI documentation to the AM at appropriate time.

Wording of term definitions

This is an issue which affects how we define new DCMI terms. The AM states that the values of all DCMI properties are resources - people, organisations, concepts, places, etc.

"A DCMI metadata value is the physical or conceptual entity that is associated with a property when it is used to describe a resource. For example, the value of the DC Creator property is a person, organisation or service - a physical entity. The value of the DC Date property is a point in time - a conceptual entity. The value of the DC Coverage property may be a geographic region or country - a physical entity. The value of the DC Subject property may be a concept - a conceptual entity - or a physical object or person - a physical entity. Each of these entities is a resource. The value may be identified using a value URI; the value may be represented by one or more value strings and/or rich values; the value may have

some related descriptions - but the value is a resource."

The wording of new DCMI property definitions needs to reflect this. For example, definitions should **not** use phrases like "A reference to ..." or "A URI for ...".

Some of the existing terms definitions are poor in this respect. However, it is probably not possible to change these definitions at this stage.

Special case of dcterms:URI

It is worth noting that 'dcterms:URI' is treated specially in our syntax encodings. It is used to indicate a *value URI* rather than a *value string*. You'll note that dcterms:URI is almost never used in the RDF/XML and new XHTML encodings, because these have alternative mechanisms for indicating that a *value URI* is being provided ('rdf:resource' and the XHTML 'link' element respectively).

Therefore, dcterms:URI is not a normal syntax encoding scheme.

Special case of dc:type

The 'dc:type' property is again a slightly special case w.r.t the AM because it is used to indicate the class of the resource being provided.

One might expect little use to be made of 'dc:type' in RDF/XML encodings, because RDF has separate mechanisms for indicating the class of a resource.

Special case of dc:identifier

Similarly, in combination with 'dcterms:URI', the 'dc:identifier' element can be used to provide the URI of the resource being described.

Again, one would expect little use to be made of 'dc:identifier' in the RDF/XML encoding because RDF provides a separate mechanism for indicating the URI of a resource. The exception to this is where the identifier being provided cannot be encoded as a URI.

Element refinement and resource classes

This is very much an issue on the distant horizon... but **if** DCMI moves to a position where resources and values are more strongly typed, for example if we start making more use of rdfs:domain and rdfs:range in our RDFS term declarations (this is a big if!), **then** we will have to consider what impact this has on our notion of *element refinement*. For example, I assume that it will be the case that valid element refinement will only occur when the domain and range of the element refinement are the same as or narrower than the

domain and range of the element being refined.

Vocabulary terms as URIs

When a vocabulary term gets a URI assigned to it, it changes from being a *value string* to being a *value URI* and the encoding needs to change to reflect that. So for example in XML, instead of

```
<dc:subject xsi:type="dcterms:DDC">Internet</dc:subject>
```

or

```
<dc:subject xsi:type="dcterms:DDC">004.678</dc:subject>
```

depending on your preference for numbers or words, the encoding would change to something more like

```
<dc:subject xsi:type="dcterms:URI">info:ddc/22/eng//004.678</dc:subject>
```

'DDC' is no longer required as a DCMI encoding scheme because the DDCness of the value is indicated by the URI. Therefore, there is no requirement to 'register' DDC with DCMI.

DCMI needs to consider whether it is better to encourage owners of vocabularies to move towards the use of URIs for their terms, or continue to encourage the registration of new schemes with DCMI or to adopt a mixed approach for the time being.

Vocabulary Encoding Schemes and Syntax Encoding Schemes

The AM clearly distinguishes between Vocabulary Encoding Schemes and Syntax Encoding Schemes, because they are fundamentally different: one provides classes/types of value resources, the other deals with the format/interpretation of literals. It would appear that these map exactly onto the distinction between Class and Datatype in RDF?

DCMI does currently distinguish these things, but I wonder if that distinction is made forcefully enough in some of our documentation. It is perhaps worth noting, that the label 'Vocabulary Encoding Scheme' now looks slightly unfortunate, given that this is now seen as a mechanism for indicating the class of the value - however, it may not be sensible or possible to change our terminology at this point.

Descriptions, records and schemas/application profiles

Rachel has pointed out the the AM, as current presented, doesn't clearly indicate the relationships between descriptions/records and the schemas (or application profiles) that define those things.

Our current thinking, but this hasn't been agreed with all the AM authors, is to extend the model slightly, introducing the notion of a *description set*. A *description set* is a collection of related *descriptions*. We will replace *record* by *description set* in the current 'description' model. We will then add a new 'record' model which indicates that a *record* is an instantiation of a *description set* in a particular encoding syntax.

This has the advantage of clearly separating the conceptual parts of the model (the 'resource' model and the 'description' model') from the instantiated part of the model (the new 'record' model).

It is important to remember that there are two kinds of schemas - syntactic and semantic. A *syntax schema* will be associated with a *record* and will define how the syntax is being used. The most common examples of *syntax schemas* are those using the XML schema language. A *semantic schema* defines what classes of resource are being described, which terms are being used and what their semantics are. The most common examples of *semantic schemas* are those using the RDF Schema and OWL languages. *Semantic schemas* are not necessarily tightly bound to anything in the AM - for example, a *semantic schema* will commonly be used to declare all the terms in a particular namespace.

In this view, an *application profile* is a special kind of *semantic schema* that is associated with a *description set*. The important thing to note is that *application profiles* don't need to say anything about syntax, but do need to cover cases where multiple resources of different classes are being described (e.g. a document and its author).

Finally, it is worth noting that, although *syntax schemas* are currently bound to *records* in a formal way (for example, using `xml:schemaLocation`), there is no direct linkage between an *application profile* or *semantic schema* and a *description set*. I.e. there is no 'hard line' between these things and any other entities in the AM.

Andy Powell, UKOLN, University of Bath
March 2004

Date: Mon, 8 Mar 2004 16:51:09 +0100
From: Roland Schwaenzl <Roland.Schwaenzl@MATHEMATIK.UNI-OSNABRUECK.DE>
Subject: dc-box and dc-point
Comments: cc: roland@scarlett.mathematik.Uni-Osnabrueck.DE

We need to talk about dc-box and dc-point in the context of the drafted abstract model.

The issue is, that people want/use an XML coding for the components.

Such coding we currently cannot support in RDF, as we never assigned URI's to the properties needed for that.

An issue related is for namespace bound XML encodings. We never really said to which namespace those elements should be attributed.

To support the DCSV encoding via XML Schema datatyping looks fairly ugly to me as well, as XML Schema currently does not support user created primitives.

Topic: Guidelines for Dublin Core Application Profiles
Modified: 2004-03-22 09:41, Monday
Maintainer: Tom Baker
Latest version: <http://dublincore.org/usage/meetings/2004/03/ISSUES/docs-DCAPs/>
See also: <http://dublincore.org/usage/meetings/2004/03/ISSUES/>

Topic shepherd: Tom Baker

SUMMARY

The "Guidelines for Dublin Core Application Profiles", approved as CEN Workshop Agreement CWA14855, are posted at:

<http://dublincore.org/usage/meetings/2004/03/cwa14855-20040210.pdf>

After a discussion in the Advisory Board, Makx posted a draft agreement to be reached with CEN about maintenance responsibility and rights with regard to CWAs of relevance to DCMI:

<http://dublincore.org/usage/meetings/2004/03/DCMI-CEN-agreement.pdf>

As of mid-February, it appears that CEN has accepted the proposed agreement and formal agreement should follow soon. According to this agreement, DCMI has the right to post and edit a copy of a CWA (designated as a draft copy). Recommendations for changes will be accepted and incorporated by CEN unless CEN members object.

We had some substantive discussion of the DCAP guidelines in the Seattle meeting on which my notes show the following:

- The issue of identifying terms with URIs as opposed to URI references should be discussed further in Section 3 (see also Sections 4.1 and 5.6). The issue is how to handle qualified names and the potential for confusion with XML qualified names, and deal with any other restrictions that are applied to how element and term names are documented.

Roland will present one or two slides in Bath about this issue.

- Section 5.9 "Documenting Unorthodox Practices" should be rewritten with language that is more neutral with respect to conformance to a data model. It was felt that APs could often be used to document legacy practices, so the guidelines should recommend that legacy practices be described as they were implemented, explaining if appropriate that the practices are no longer in use. Tom would appreciate some further discussion on what should actually be intended here.

In Bath, it would be good if we could:

- Agree in principle that CWA14855 should be recommended and pointed to by the Usage Board as good-practice guidelines for writing an application profile.
- Identify (or confirm) which sections, other than the above, may need revision, specifying how they should be revised.
- Schedule a simple process for signing off on the revisions over the list.

The goal would be to specify how the guidelines could be designated a DCMI Recommended Resource.

Date: Tue, 10 Feb 2004 17:45:22 -0000
From: Pete Johnston <p.johnston@UKOLN.AC.UK>
Subject: Re: Bath agenda: CEN application profile guidelines
To: DC-USAGE@JISCMAIL.AC.UK

> -- The issue of identifying terms with URIs as opposed to
> URI references should be discussed further in Section 3
> (see also Sections 4.1 and 5.6). The issue is how to handle
> qualified names and the potential for confusion with XML
> qualified names, and deal with any other restrictions that
> are applied to how element and term names are documented.
> I would appreciate if someone more knowledgeable on the
> state of discussion (Roland?) would volunteer to explain
> the issue here.

At the risk of butting in ;-) I think the "MODS location" issue is directly relevant here too.

Leaving aside the URI v QName question for a moment, the CEN DCAP guidelines document talks about "metadata terms" and "elements from other vocabularies", which can then be "used" in a DCAP.

I wonder whether there is an element of assumption here that all metadata vocabularies are being developed within the same conceptual framework as Dublin Core, and that the descriptions of those other vocabularies will use terminology like "term", "element" and "refinement" in the same way as DCMI does. Or at least that those DC concepts can be projected or mapped very easily onto concepts within the models and frameworks used by other metadata standards.

Now that may well be the case, particularly where those "other vocabularies" have been developed with interoperability with

DC in mind - but I'd argue that it is not always the case.

And I worry that we risk encouraging people to see what my French teacher used to call "false friends" - like the "DC element"/XML element case with MODS. It seems to me that the problem is not only one of what sort of identifier is used, but what are the things that are being identified and referenced, and whether they are appropriate for (re)use in a DCAP at all. And to provide the basis for those decisions, we need a model for what a DCAP is, which I'm not really sure we have at the moment.

Date: Wed, 11 Feb 2004 12:51:57 +0100
From: Roland Schwaenzl <Roland.Schwaenzl@MATHEMATIK.UNI-OSNABRUECK.DE>
Subject: Re: Bath agenda: CEN application profile guidelines
To: DC-USAGE@JISCMAIL.AC.UK

> I would appreciate if someone more knowledgeable on the
> state of discussion (Roland?) would volunteer to explain
> the issue here.

Glad to do so. Do you want this by mail or at Bath?
By the way RDF and OWL are now W3C Recommendations.

Date: 2003-11-21
From: Makx Dekkers
Posted to dc-ab@jiscmail.ac.uk

Dear all,

Following our discussions in Seattle concerning the potential relation with CEN, I have worked with the people at CEN to draft an agreement.

For those of you who haven't followed the discussion in detail, CEN is a European standardisation organisation (<http://www.cenorm.be/>), funded by national standard bodies in Europe and by the European Commission.

The workshop that is relevant for DCMI is the Workshop on Dublin Core Metadata: www.cenorm.be/sh/mmi-dc/. CEN Workshops are very much like DCMI Working Groups: they work through open mailing lists, open FTP archives, and open meetings, and have a strictly consensus-based approach. Results of these workshops are called CWA, CEN Workshop Agreements, which are not formal standards but rather documented agreements within a particular workshop.

Through the workshop mentioned above, CEN is willing to fund

activities related to Dublin Core, mostly production of DC-related documentation and guidelines. Both CEN and DCMI are interested to clarify and formalise the relationship between the two organisations in terms of sharing responsibility and credit for developing specifications and advancing DCMI-related work items.

The draft agreement below, on one hand, takes into account the requirements of DCMI as expressed in the discussion in the UB and AB meetings in Seattle, and, on the other hand, respects the policies of CEN as an organisation funding documentation work that is useful and relevant to DCMI.

The underlying idea is that it is beneficial to DCMI and the DCMI community that a funding organisation like CEN is willing and able to channel funds into work that is useful to DCMI.

In preparing the text, we have used a number of principles based on general DCMI principles and on the comments from UB and AB in Seattle.

My summary of these guiding principles:

- Respect DCMI general principles regarding open and unrestricted participation and free availability of results
- Allow direct involvement from DCMI and the DCMI community in the development and maintenance process
- Allow for assignment of official DCMI status to results
- Allow DCMI to submit these results for further national and international standardisation
- Safeguard the possibility to update, modify or deprecate the results as necessary
- Allow DCMI to assume stewardship and control over results if third-party involvement cannot be sustained

Following the text, I have included my analysis of how this text addresses the worries that were expressed in Seattle.

This is still draft text. It is now being submitted to the CEN Board for approval at the same time that I, as promised in Seattle, share it with the DCMI Advisory Board.

I would like you to critically review the text and send your comments to the list.

DRAFT CEN-DCMI AGREEMENT FOR REVIEW BY DCMI ADVISORY BOARD

1. CEN will make available the CWAs that are produced by its Workshop MMI-DC for download on the web, under the usual CEN conditions for download (for personal use only, etc). DCMI may include a link to the CWA at the CEN Website

2. DCMI may, but is not obliged to, assign an official DCMI status to documents produced and agreed by CEN Workshops, specifically DCMI Recommendation or DCMI Recommended Resource. DCMI will clearly indicate that such documents have been produced in the context of CEN. Availability of these documents will be through linking to the CWAs concerned on the CEN web-site.
3. CEN grants a royalty-free copyright licence to DCMI to modify CEN CWAs, with full acknowledgement of the original source, and to put these modified ones on the DCMI Web site
4. DCMI commits to provide feedback to CEN on the CWA so that the CWA can be updated through CEN procedures. CEN will take the necessary steps, through its Workshop procedure, to update its CWAs, when requested by DCMI.
5. During development of a CWA, CEN grants DCMI the right to post working drafts on the DCMI Web site and invite public comment and contributions, with a clear indication that this work takes place in the context of CEN. DCMI will channel comments from the DCMI community to the CEN Workshop.
6. In such cases as CEN were no longer able to maintain a Dublin-Core-related CWA, DCMI may, but is not obliged to, take over the maintenance and further development of such document under the normal rules and procedures governing work within DCMI, acknowledging that the original version of the document was produced in the context of CEN and referring to the latest official CWA version.
7. DCMI may, in consultation with CEN, propose a CWA - prepared in the context of CEN and endorsed as a DCMI Recommendation - for consideration by global standards organizations such as ISO and IETF, for approval as an international standard, Internet Standard or RFC.

DISCUSSION

As far as I understand, the explicit and implicit concerns expressed in Seattle were (excuse blunt paraphrasing):

1. The work in CEN leads to documents that are wrong in some way, e.g. are contrary to DCMI principles or policies.

Clauses 4 and 5 intend to ensure that DCMI can contribute to the content and quality of the work so that we have a possibility to influence the CEN results.

In the situation that, notwithstanding the contributions from the

DCMI community, the end result is below our standards, Clause 2 makes it possible that we do /not/ adopt the CWA as a DCMI Recommendation.

2. The work in CEN does deliver a good and appropriate document but DCMI cannot use or distribute it.

This concern is covered in Clauses 1 and 3.

3. After publication of a CWA, CEN or others may run away with it and disallow DCMI to further develop the document.

Clause 3 gives us the right to further develop any documents that are produced through CEN funding, without restriction.

4. After CEN ceases to be interested, the CWA is dead and we have no right to further develop the document.

This is addressed by Clause 6, but note that this does not put us under obligation to take over maintenance after the work in CEN ceases.

5. A good CWA that DCMI endorses cannot be promoted to international standard.

Clause 7 covers this, with the additional remark that CEN would be happy if this occurred.

6. Developing documentation in a regional organisation would be in conflict with the global nature of DCMI

CEN rules and procedures do allow full and unrestricted participation of non-Europeans in their Workshops

CEN

CWA 14855

WORKSHOP

November 2003

AGREEMENT

ICS 35.100.05; 35.240.60

English version

Dublin Core Application Profile Guidelines

This CEN Workshop Agreement has been drafted and approved by a Workshop of representatives of interested parties, the constitution of which is indicated in the foreword of this Workshop Agreement.

The formal process followed by the Workshop in the development of this Workshop Agreement has been endorsed by the National Members of CEN but neither the National Members of CEN nor the CEN Management Centre can be held accountable for the technical content of this CEN Workshop Agreement or possible conflicts with standards or legislation.

This CEN Workshop Agreement can in no way be held as being an official standard developed by CEN and its Members.

This CEN Workshop Agreement is publicly available as a reference document from the CEN Members National Standard Bodies.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.



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Foreword

The production of this CEN Workshop Agreement (CWA) was formally accepted as part of the CEN/ISSS Workshop on Metadata for Multimedia Information - Dublin Core (WS/MMI-DC) in the Workshop's plenary meeting on 2002-03-07.

This CWA was agreed upon by the contributing partners in the CEN/ISSS Workshop on MMI-DC, representing a wide mix of interests, including administrations, libraries, on-line education and geographic information systems. The list of company individuals who have supported the document's contents may be obtained from the CEN/ISSS Secretariat.

The CWA was approved by the Workshop's plenary meeting on 2003-09-08.

The final text of this CWA was submitted to CEN for publication on 2003-09-09.

Introduction

A Dublin Core Application Profile (DCAP) is a declaration specifying which metadata terms an organization, information provider, or user community uses in its metadata. By definition, a DCAP identifies the source of metadata terms used – whether they have been defined in formally maintained standards such as Dublin Core, in less formally defined element sets and vocabularies, or by the creator of the DCAP itself for local use in an application. Optionally, a DCAP may provide additional documentation on how the terms are constrained, encoded, or interpreted for application-specific purposes.

A DCAP is designed to promote interoperability within the constraints of the Dublin Core model and to encourage harmonization of usage and convergence on “emerging semantics” around its edges. Historically, application profiles have emerged out of a need to share local domain- or application-specific refinements of or extensions to Dublin Core within particular application communities without necessarily seeking an extension of the core standard maintained by the Dublin Core Metadata Initiative (DCMI). Application profiles document how implementers use elements from Dublin Core along with elements from other vocabularies, customizing standard definitions and usage guidelines for local requirements [HEERY].

In practice, application profiles are created for a wide range of purposes: to document the semantics and constraints used for a set of metadata records (“instance metadata”); to help communities of implementers harmonize metadata practice among themselves; to identify emerging semantics as possible candidates for formal standardization; as guides for semantic crosswalks and format conversions; as specifications for formal encoding structures such as Document Type Definitions (DTDs); for interpreting or presenting legacy or proprietary metadata in terms of widely-understood standards; or for documenting the rules and criteria according to which a set of metadata was created. Application profiles often represent “work in progress”, providing foci for ongoing efforts to incrementally improve and clarify a body of shared metadata semantics within a particular user community.

In the absence of guidelines, creators of application profiles have hitherto invented a wide range of presentation formats. The present document distills the salient features of many existing profiles into a format that is as concise and simple as possible, yet as precise and detailed as is sometimes necessary to support the various uses identified above.

Semantic interoperability – the ultimate purpose of documents such as DCAPs – is a longer-term goal to be pursued as metadata vocabularies and related enabling technologies mature over time. In their current form, DCAPs are designed to document metadata usage in a normalized form that will lend itself to translation into common models, such as RDF, that can be processed by machines to automate such interoperability.

Machine-understandable representations will achieve this goal to the extent that metadata terms can be referenced using stable, well-documented identifiers. As discussed below, the practice of identifying metadata terms with Uniform Resource Identifiers (URIs) is currently gaining momentum. Maintaining a DCAP over time, then, may involve improving its precision incrementally by identifying its terms with URIs as the URIs become available; this is referred to here as the Principle of Appropriate Identification.

In the meantime, these guidelines aim at the more modest aim of providing system developers and information specialists with a normalized and readable view of Dublin-Core-based metadata models. A DCAP should include enough information to be of optimal usefulness for its intended audience – a Principle of Readability – even if this entails the redundant inclusion of information, which, in a formal system of machine-processable schemas, might otherwise be fetched dynamically from external sources.

Given the flexibility of presentation required by the Principle of Readability, no assumption is made that DCAPs will be convertible into future machine-understandable forms without the use of ad-hoc heuristics or manual intervention. Creators of DCAPs should bear in mind that a normalized form of documentation cannot itself address the deeper problems of interoperability in a world with a diversity of underlying metadata models – problems which will continue to challenge the metadata community as a whole, and the Dublin Core Metadata Initiative in particular, for the foreseeable future.

1 Scope

The present document gives guidance on how information should be structured and presented in Dublin Core Application Profiles. Principles and concepts underlying DCAPs as declarative metadata constructs are defined and explained.

The guidelines do not mandate a particular document format for DCAPs. DCAPs may be presented as plain text files or as Web pages, word-processing files, PowerPoint, or indeed as ink on paper. By providing a consistent presentation structure for such documents, these guidelines aim at making it easier for people to understand what others are doing in their metadata. The guidelines mandate enough structure to ensure that DCAPs will be convertible as straightforwardly as possible into expressions that use schema languages, such as RDF, for automatic processing by machines. In this sense, a normalized documentary form for DCAPs is a first step towards the more ambitious and long-term goal of automating semantic interoperability across a broad diversity of information sources.

2 Definitions

Dublin Core Application Profile (DCAP): A DCAP is a declaration specifying which metadata terms an organization, information provider, or user community uses in its metadata and how those terms have been customized or adapted to a particular application. By definition, a DCAP is based in part on Dublin Core and follows DCMI Grammatical Principles [DCMI-PRINCIPLES]. A DCAP consists of a Descriptive Header and one or more Term Usages.

DCMI Grammatical Principles: As maintained by the Dublin Core Metadata Initiative, DCMI grammatical principles specify a typology of metadata terms – Elements, Element Refinements, Encoding Schemes, and Vocabulary Terms – along with their interrelationships and functions [DCMI-PRINCIPLES]. A DCAP is based on the simple model of a resource described with a flat set of properties. This is consistent with DCMI grammatical principles, which do not themselves specify more elaborate models.

Descriptive Header: A Descriptive Header places the DCAP into an interpretive context by specifying, at a minimum, a Title, Creator, Date, Identifier, and Description for the DCAP. An optional Preamble may comment on any technical or stylistic conventions followed in the DCAP.

Term Usage: A Term Usage is a description of a metadata term, which, at a minimum, identifies a metadata term in accordance with the Principle of Appropriate Identification by using one or more identifying attributes – Term URI, Defined By, Name, Label – as described in Section 3. Optionally, a Term Usage may also describe or annotate a term in more detail by providing additional definitional attributes, relational attributes, or constraints, as described in Section 4.

Principle of Appropriate Identification: The Principle of Appropriate Identification dictates that metadata terms be identified as precisely as possible. As established in the so-called CORES Resolution of December 2002, the preferred method for identifying a metadata term is to cite its Uniform Resource Identifier (URI). All DCMI metadata terms are identified with URIs, and URIs are currently being assigned to the terms of other major semantic standards such as MARC21 and IEEE/LOM [CORES-RESOLUTION]. Whenever such URIs are available they should be cited as an attribute of a Term Usage (its “Term URI”). Terms to which URIs have not (or not yet) been assigned should be identified using other attributes as appropriate, as described in Section 3.

Principle of Readability: The Principle of Readability dictates that a DCAP should include enough information in Term Usages to be of optimal usefulness for the intended audience of the DCAP – even if this entails the redundant inclusion of information which, in a formal system of machine-processable schemas, might otherwise be fetched dynamically from external sources. Conversely, the Principle of Readability allows unused attributes simply to be omitted from display.

3 Identifying terms with appropriate precision

Application profiles serve to clarify who is declaring and maintaining the metadata semantics that a group wants to share. This section describes how a metadata term used in a Term Usage can be identified with appropriate precision (the Principle of Appropriate Identification).

At present, the preferred method for identifying a metadata term is to cite its Uniform Resource Identifier (URI) if such is available. A URI is "a compact string of characters for identifying an abstract or physical resource" constructed according to a generic and flexible syntax [URI]. The World Wide Web Consortium has promoted the notion that "All important resources should be identified by a URI" [WEBARCH] and has specifically promoted the use of URIs for identifying metadata elements. In the CORES Resolution of December 2002, the maintainers of seven leading metadata standards – Dublin Core, IEEE/LOM, DOI, CERIF, MARC21, ONIX, and GILS -- pledged to assign URIs to their elements and to articulate policies for the persistence of those URIs [CORES-RESOLUTION]. (Note that a URI, when used to identify a metadata term, often functions as a Web address for accessing information about that term, such as a Web page or machine-processable schema. However, the CORES Resolution does not require that such identifiers resolve to such resources, and URIs that result in "file not found" messages are not necessarily "broken" as identifiers.)

For metadata terms to which a URI has been officially assigned – for example, by DCMI or by another signatory of the CORES Resolution – that URI should be cited in the field "Term URI". For example, the Dublin Core element "Audience" should be cited as "<http://purl.org/dc/terms/audience>". As this form of identification is precise and sufficient on its own, other identifying fields may be left blank:

Term URI	http://purl.org/dc/terms/audience
Name	-
Label	-
Defined By	-

In accordance with the Principle of Readability, other identifying attributes such as Name and Label could be added here to make the DCAP more "reader-friendly". If the DCAP is intended as a guide for processing metadata records, it may indeed be necessary to provide a Name (i.e., the string actually used in the metadata records). If the Name or Label of a term are considered more "reader-friendly" as captions for a Term Usage than the Term URI, the order of these attributes may be changed to put these first. See Sections 5.4 ("Attributes copied from external sources") and 5.2 ("Readability of Term Usages") for further discussion.

A term that has been declared or documented somewhere but not assigned a URI (as far as one knows) should be identified as precisely as possible by providing its name and pointing to a declarative document or schema in which it has been defined. The declarative document or schema should be cited with URI, Web address, or bibliographic reference in the field "Defined By". The term itself can be cited using either a string identifier or token (in the field "Name", which by default is assumed to be case-sensitive) or a natural-language label (in the field "Label"), or both, taken from the declarative document or schema:

Term URI	-
Name	AttendancePattern
Label	Attendance Pattern
Defined By	http://someones-project.org/schema.html

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For a term that has not already been defined in any other declarative document, the field Defined By should simply cite the URI of the DCAP itself (as assigned with Identifier in the DCAP Descriptive Header). For example, in a DCAP with the URI "http://my-project.org/profile.html", a new local term called Star Ratings could be defined as follows:

Term URI	-
Name	StarRatings
Label	Star Ratings
Defined By	http://my-project.org/profile.html

A creator of a DCAP wishing to declare locally coined terms in a way that makes them citable with precision, and thus re-usable by others, may undertake the additional step of assigning them URIs. At present, the technical conventions and "Web etiquette" for naming metadata terms with URIs have yet to establish themselves in common practice, though at a minimum it seems both polite and sensible not to promote new URIs unless it is expected they will be maintained. For the purposes of DCAPs, DCMI itself provides models of practice, and further options are likely to emerge as the CORES Resolution is implemented [DCMI-NAMESPACE, DCMI-TERMS, DCMI-SCHEMAS]. Note that the CORES Resolution itself addresses the use of URIs as identifiers only and is silent on whether the URIs should resolve to informational Web pages or schemas [CORES-RESOLUTION].

4 Attributes of a Term Usage

Attributes for describing the metadata terms "used" in a DCAP are listed below. Note that they are called "attributes" here simply to avoid confusingly recursive formulations such as "terms for describing terms".

Use of Identifying Attributes in Term Usages (see Section 4.1) is governed by the Principle of Appropriate Identification. According to this principle, a Term Usage should use one or more of the four Identifying Attributes to identify a term as precisely as appropriate – i.e., with a formally assigned URI if available, or alternatively by citing a name or label for the term along with a reference to a document, schema, or Web page in which that term is defined.

All of the other attributes of Term Usages are optional and should be used as local needs may dictate. As discussed in Section 5.4, "local" and "source" attributes may be distinguished as necessary.

4.1 Identifying attributes

Term URI	A Uniform Resource Identifier used to identify the term.
Name	A unique token assigned to 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.

4.2 Definitional attributes

Definition	A statement that represents the concept and essential nature of the term.
Comments	Additional information about the term or its application.
Type of term	A grammatical category of the term (e.g., "Element", "Element Refinement", or "Encoding Scheme").

4.3 Relational attributes

Refines	The described term semantically refines the referenced term.
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.
Has Encoding Scheme	The described term is qualified by the referenced Encoding Scheme.
Similar To	The described term has a meaning the same as, or similar to, that of the referenced term.

4.4 Constraints

Obligation	Indicates whether the element is required to always or sometimes be present (i.e., contain a value). Examples include "Mandatory", "Conditional", and "Optional".)
Condition	Describes the condition or conditions according to which a value shall be present.
Datatype	Indicates the type of data that can be represented in the value of the element.
Occurrence	Indicates any limit to the repeatability of the element.

5 Discussion

5.1 Descriptive Headers

By definition, a DCAP consists of a Descriptive Header and one or more Term Usages (see Section 2). The Description Header should include the following:

- A brief description of the DCAP based on Dublin Core. At a minimum, the description should specify a Title, Contributor, Date, Identifier, and Description, as explained in more detail in Annex A. Ideally, the description of the DCAP will elaborate on the context in which the DCAP is intended to be used.
- Optionally, a Preamble for the DCAP should describe any technical or formatting conventions used in the DCAP. For example, if namespace prefixes are used in the Name field (see Section 5.6), these prefixes should be documented here. The Preamble can also cite Web pages or schemas in which the terms used in the DCAP are documented and defined so that such information does not need to be repeated in the “Defined By” field of each individual Term Usage; see the example in Section 6.1.1.

5.2 Readability of Term Usages

By default, each term cited in a DCAP should be described with its own Term Usage – a table with a full set of attributes on the left and attribute values on the right. In accordance with the Principle of Readability, however, the intended use of a DCAP may dictate a different presentational style: while DCAPs intended for use by software developers will need to be explicit and detailed, DCAPs intended primarily as informational documents for human consumption can (and often should) be much terser. The following are several ways in which Term Usages may be formatted for readability:

- Instead of creating a separate Term Usage for every Element Refinement and Encoding Scheme used in an application, such terms may simply be cited in the attributes Refined By or Has Encoding Scheme of the Term Usages of the Elements to which they refer (see Section 5.3). Note that this terser style does not support the addition of usage notes, local definitions, or annotations, for which a full Term Usage must be used.
- Attributes not needed for Term Usages can simply be omitted. At one extreme, a Term Usage might legitimately consist of just a Name and a Term URI; see the example in Section 6.1.2).
- The order of attributes presented in Section 4 is significant only for the usability of DCAPs as documents – not for future machine-processable representations of DCAPs. Authors of DCAPs may therefore change the order of attributes in the interest of readability, though they should bear in mind that any such changes may make it more difficult for people to compare two DCAPs visually. For examples of how Name (in boldface) is placed before Term URI, see Section 6.1.2 and DCMI-TERMS.
- In the interest of readability, it might make sense to describe Elements, Element Refinements, and Encoding Schemes with different subsets of relevant attributes. Indeed, these different types of terms might be grouped under separate sections of the DCAP document. (For example, see how Elements and Element Refinements are separated from Encoding Schemes in the document “DCMI Metadata Terms” [DCMI-TERMS].)
- In the interest of readability and of future machine-parsability, attributes should be repeated when necessary (as opposed to listing multiple values for a single attribute).

5.3 “Using” Element Refinements, Encoding Schemes, and Vocabulary Terms

5.3.1 Using Vocabulary Terms

According to DCMI Grammatical Principles, a Vocabulary Term is a member of a controlled vocabulary of values, and a controlled vocabulary of values (as a whole) is named by an Encoding Scheme [DCMI-PRINCIPLES].

In general, it is not the role of application profiles to declare controlled vocabularies of values, either in the sense of creating lists of potential values or in the sense of giving that list (as a whole) a name and URI. Sets of Vocabulary Terms are most appropriately declared in separately citable documents external to a DCAP.

However, if the creator of a DCAP merely wishes to specify a short list of possible values (e.g., "Animal, Vegetable, or Mineral"), these can be simply listed in a "Comment" field.

5.3.2 Using Encoding Schemes

There are three ways to cite Encoding Schemes in a DCAP:

- The most concise way is to use the attribute Has Encoding Scheme (or Comment) for a blanket reference to a set of encoding schemes documented elsewhere. The DCAP for Resource Discovery Network, for example, simply cites “RDN Subject Encoding Schemes” and gives a URL where the list of those encoding schemes may be found; see the example in Section 6.1.2.
- A more precise way is to use the attribute Has Encoding Scheme, repeated as necessary, to cite each Encoding Scheme by its URI (or by Name and URI); for example, see the example in Section 6.3.2.
- In addition to citing Encoding Schemes in the Has Encoding Scheme attribute of Elements, creators of DCAPs may want to describe Encoding Schemes in stand-alone Term Usages in order to annotate their usage, for example by specifying a Datatype, Occurrence, or Local Definition. The attribute Encoding Scheme For points back to the Element or Element Refinement qualified.

5.3.3 Using Element Refinements

The options for Element Refinements are analogous to those for Encoding Schemes:

- Statements such as “all terms in Vocabulary D can be used as element refinements for Contributor” can be simply recorded in a Refined By attribute (or as a Comment).
- Element Refinements can be cited one-by-one using the attribute Refined By; see the example in Section 6.3.2.
- Element Refinements can additionally be described in separate Term Usages.

5.4 Attributes copied from external sources

Ideally, application profiles would be dynamically up-dated with information on the terms they use directly from schemas on the Web and this information would be integrated with local annotations into a “one-stop” document for the convenience of users. The use of machine-understandable DCAPs may some day make this possible.

In the meantime, however, creators of DCAPs who wish to include definitions or other such information from original source documents in their Term Usages have no choice but to copy that information from the source. While the Principle of Readability specifically permits this, authors of DCAPs should bear in mind that copied information, if not maintained, can go out of alignment with the official source.

Where information copied from external sources is supplied, this fact should be reported in the Preamble as described in Section 5.1. Where it is necessary to distinguish in a DCAP between attributes defined locally and attributes copied from an external source, the DCAP should establish its own document-internal

convention, such as distinguishing between a Local Definition and a Source Definition; see the example in Section 6.3.2.

5.5 Types of Comments

Past creators of application profiles for Dublin Core have invented many types of annotation, the most popular of which have been Notes, Best Practice, Usage, Scope, Open Questions, Examples, Purpose, Guidelines, and Don't Confuse With. While the present guidelines lump all of the above into a generically named Comments field, creators of DCAPs may wish to repeat this field with different labels as needed. The needs of future machine processing do not now seem to dictate tighter uniformity in this area.

5.6 Term URIs versus Qualified Names

In the sense intended here, Qualified Names are names of metadata terms that are “qualified” with a prefix standing for a namespace with which the terms are associated (a “namespace prefix”). For example, the Dublin Core element “Title” is sometimes referenced in metadata records and usage documentation using a namespace prefix such as “DC.” or “dc:” as in “DC.Title” or “dc:title”. As straightforward as this citation method may seem, it is based on assumptions about the nature of “namespace” that cannot be assumed to hold across different application environments (e.g., HTML versus RDF versus relational databases) or metadata communities (e.g., for citing elements from standards other than Dublin Core), and at any rate it presupposes an additional mechanism or declaration for associating prefixes with the proper namespaces.

For such reasons, it is far better to cite an element with a full URI – indeed, this is the only method supported by the CORES Resolution and by DCMI policy [CORES-RESOLUTION, DCMI-NAMESPACE]. According to the Principle of Appropriate Identification followed in these guidelines, a Term URI must be cited when available.

On the other hand, long strings such as “http://purl.org/dc/elements/1.1/title” are not very readable and may be misunderstood by the average reader of a DCAP. In accordance with the Principle of Readability, therefore, the author of a DCAP may choose to use qualified names (e.g., “dc:title”) in the “Name” field – as long as any prefixes used are explained in the Preamble of the DCAP, and as long as any available Term URIs are cited as well.

5.7 Declaring new elements

There is nothing to restrain the creator of a DCAP from creating new URIs as identifiers for locally coined metadata terms. For reasons discussed above in Section 3, one should perhaps pause for reflection before taking this step, and if URIs are declared, this step should perhaps be documented separately and not embedded “in passing” into a DCAP full of Term Usages. Any URIs declared for use in a DCAP might best be formed by following the DCMI algorithm and concatenating the URL of the DCAP (e.g., “http://myproject.org/profile/”) and the Name of the term (e.g., “starRatings”) into a single string (e.g., “http://myproject.org/profile/starRatings”) [DCMI-NAMESPACE]. Other models for forming URIs as identifiers for metadata elements are emerging with the implementation of the CORES Resolution [CORES-RESOLUTION].

5.8 Documenting grouped or nested metadata elements

In order to be usable across a diversity of application environments, Dublin Core was designed as a flat set of attributes for describing a resource. In implementation practice, however, Dublin Core elements may be embedded in more elaborate models that group or nest the elements in locally specific ways.

In the absence of a clear and widely accepted data model beyond that of the flat set of attributes, however, applications for integrating metadata from many different sources may be able only to extract and interpret the metadata in terms of Simple Dublin Core, losing any application-specific modelling context. An application designer wishing to document nesting or grouping constructs in a DCAP will need to extend the guidelines described here in order to do so and should bear in mind that documenting such constructs will not in itself guarantee that they will be understood or correctly processed by other applications.

5.9 Documenting unorthodox practices

For reasons both of history and of expedience, a significant number of applications have metadata based on interpretations of the Dublin Core model that are unsound from the standpoint of today's grammatical principles. For example, an application may use `CreatorDateOfBirth` – an element representing the birth date of a creator of a resource that does not, however, semantically "refine" `Creator` as its name may imply.

Rather than incorrectly asserting "`CreatorDateOfBirth`" to be an Element Refinement refining `http://purl.org/dc/elements/1.1/creator`, the Term Usage in the DCAP should simply record the local name of the element and identify the URI of the DCAP itself as its source. For example, if the DCAP itself is identified by "`http://myproject.org/profile/2003/03/17/`", the Term Usage should declare the following, leaving empty any fields (such as "Term URI" and "Refines") that would make incorrect assertions about the element:

Term URI	-
Local Name	<code>CreatorDateOfBirth</code>
Defined By	http://my-project.org/profile.html
Refines	-

Whether "errors" such as "`CreatorDateOfBirth`" will be of negative consequence for interoperability will depend on how they are interpreted and used in the context of particular applications. The analytical effort involved in creating a DCAP is in effect an important first step towards putting such applications onto a more interoperable foundation.

6 Examples

6.1 UK Resource Discovery Network OAI Application Profile

6.1.1 Descriptive Header

Title	RDN OAI Application Profile
Contributor	Andy Powell
Date	2003-03-23
Identifier	URL for this document - to be assigned
Description	This document expresses the application profile established by the Resource Discovery Network (RDN) to be used by RDN partners for harvesting of records using the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH). The Application Profile is expressed according to guidelines published by the CEN/ISSS [Reference]. Full user documentation for the Application Profile, together with associated XML schemas, is available at http://www.rdn.ac.uk/oai/rdn_dc/ . All Dublin Core terms are fully documented at http://www.dublincore.org/documents/dcmi-terms/ .

6.1.2 A Term Usage

Name	Subject
Term URI	http://purl.org/dc/elements/1.1/subject
Has Encoding Scheme	DC Subject Encoding Schemes
Has Encoding Scheme	RDN Subject Encoding Schemes
Comment	RDN Subject Encoding Schemes are available from http://www.rdn.ac.uk/publications/cat-guide/subject-schemes/
Obligation	Recommended

6.1.3 Commentary

The DCAP for the UK Resource Discovery Network is formatted in the tersest possible style [RDN]. Note in particular the following:

- The Descriptive Header puts the DCAP into a specific usage context.
- Only the attributes actually used in a given Term Usage are shown. Indeed, most of the Term Usages in this DCAP consist of just a Name and a Term URI.
- Instead of listing all of the DCMI- and RDN-maintained Encoding Schemes as separate Has Encoding Scheme entries (or as separate Term Usages), this DCAP uses shorthand references to “DC Subject Encoding Schemes” and “RDN Subject Encoding Schemes”. Pointers to documentation are given in the Descriptive Header (for the former) and in a Comment field of the Term Usage (for the latter).
- This DCAP increases the readability of Term Usages by listing the Name, in boldface, before the Term URI. This option is discussed in Section 5.2.

6.2 Renardus Application Profile

6.2.1 Descriptive Header

Title	Renardus Application Profile
Contributor	Metadata Working Group SUB Göttingen
Date	18-04-2002
Identifier	http://renardus.sub.uni-goettingen.de/renap/renap.html
Description	Cross search and cross browse European quality controlled subject gateways.

6.2.2 A Term Usage

Term URI	http://purl.org/dc/elements/1.1/language
Name	Language
Label	Language
Defined By	-
Definition	-
Comments	Renardus: The language code is the ISO 639-2, three-letter code. SUB will provide a mapping between the two letter and three letter language code but this will also be found on the LoC site - ISO 639-2: http://lcweb.loc.gov/standards/iso639-2/englangn.html
Type of term	Element
Refines	-
Refined By	-
Encoding Scheme For	-
Has Encoding Scheme	http://purl.org/dc/terms/ISO639-2
Similar To	-
Obligation	Mandatory
Condition	-
Datatype	String
Occurrence	Repeatable

6.2.3 Commentary

The DCAP for the Renardus Project has been formatted in a somewhat more verbose style [RENARDUS]. Note in particular:

- The DCAP uses its own URL as an identifier.

6.3 UK e-Government Metadata Standard Application Profile

6.3.1 Descriptive Header

Addressee	Metadata Working Group, Interoperability Working Group
Contributor	Drafted by Interoperability and Metadata Analyst, Office of the e-Envoy, Cabinet Office, UK farah.ahmed@e-envoy.gsi.gov.uk
Contributor	Metadata Working Group
Coverage.spatial	UK
Creator	Senior Policy Advisor, Interoperability and Metadata, Office of the e-Envoy, Cabinet Office, UK
Date.issued	2003-08-05
Description	The elements and refinements that provide the structure for metadata used by the UK public sector, designed to complement the e-GMS.
Format	Text/MS Word 2003
Identifier	http://purl.oclc.org/NET/e-GMS-AP_v1
Language	Eng
Publisher	Office of the e-Envoy, Cabinet Office, UK. govtalk@e-envoy.gsi.gov.uk
Rights.copyright	http://www.hmsso.gov.uk/docs/copynote.htm Crown Copyright
Source	http://purl.oclc.org/NET/e-GMS_v2
Status	Version 1.0 For publication
Subject	Metadata
Subject.category	Information management
Title	UK e-government metadata standard application profile version 1

6.3.2 A Term Usage

Term URI	http://purl.org/dc/elements/1.1/date
Defined by	http://purl.org/dc/elements/1.1/
Name	Date
Label	Date
Source Definition	A date associated with an event in the life cycle of the resource.
Source Comment	-
Local Definition	-
Local Comment:	To enable the user to find the resource by limiting the number of search hits according to a date, e.g. the date the resource was made available.
Purpose	
Local Comment: Notes	Dates need to appear in a format that is recognisable to people all over the world, and that can be interpreted by computer software. The W3C format allows accurate searching, and makes it clear which is the year, month or day. The format is 'ccyy-mm-dd', where 'ccyy' is the year, 'mm' is the month and 'dd' the day. When the time is also needed, add 'hh:mm', where 'hh' is the hour (using the 24 hour clock), 'mm' is minutes. More about this notation can be found at http://www.w3.org/TR/NOTE-datetime .

Local Comment: Not to be confused with	Coverage - Date refers to dates relevant to the information resource itself, not the information held within the resource. For example, for a document about the civil service in the 18 th century, put '18 th century' in Coverage and put the date published in Date.
Type of term	Element
Refines	-
Refined by	http://www.govtalk.gov.uk/terms/dateAcquired
Refined by	http://purl.org/dc/terms/dateAccepted
Refined by	http://purl.org/dc/terms/Available
Refined by	http://purl.org/dc/terms/dateCopyrighted
Refined by	http://purl.org/dc/terms/created
Refined by	http://purl.org/dc/terms/issued
Refined by	http://purl.org/dc/terms/dateSubmitted
Refined by	http://purl.org/dc/terms/valid
Refined by	http://purl.org/dc/terms/modified
Refined by	http://www.govtalk.gov.uk/terms/cutOffDate
Refined by	http://www.govtalk.gov.uk/terms/dateDeclared
Refined by	http://www.govtalk.gov.uk/terms/dateClosed
Refined by	http://www.govtalk.gov.uk/terms/nextVersionDue
Refined by	http://www.govtalk.gov.uk/terms/updatingFrequency
Encoding Scheme For	-
Has Encoding Scheme	http://purl.org/dc/terms/W3CDTF
Has Encoding Scheme	http://purl.org/dc/terms/Point
Similar To	-
Constraints	The value must always be taken from the specified encoding scheme, with the exception of the 'updatingFrequency' refinement.
Obligation	Mandatory
Condition	A value must be given either for the unqualified date or at least one date refinement
Datatype	-

6.3.3 Commentary

The DCAP for the UK e-Government Metadata Standard is formatted in the most detailed and specific possible style [EGMS]. While this results in a significantly longer document than the DCAPs for RDN and Renardus, such specificity may be helpful to developers of applications that need to create or process metadata based on the DCAP. Note in particular the following:

- Encoding Schemes and Element Refinements are listed using repeated fields in the Term Usage of the Element to which they refer. In addition, each Encoding Scheme and Element Refinement is also described in its own Term Usage, which allows information about each of them, such as Definition and Constraints, to be recorded in the DCAP as well.
- The Term Usage marks information coming from outside sources: the "Source Definition" copies the definition of Date from DCMI documentation, while the "Local Comment" supplies usage information local to this DCAP.

Annex A: Metadata describing a DCAP

A DCAP should itself be described with Dublin Core metadata, either in a header or in a separate metadata record. At a minimum, this description should include:

Title	A name for the Application Profile.
Contributor	A creator or maintainer of the Profile.
Date	The date of last modification.
Identifier	An unambiguous reference to the Profile. Best practice is to provide a URL by which a copy of the document or schema can be retrieved over the Web.
Description	A concise description of the Profile. As appropriate, the description should elaborate on the context and purposes in which the DCAP is intended to be used; the organizations or individuals involved in its development; any arrangements, policies, or intentions regarding the future development and maintenance of the DCAP; or technical characteristics of the instance metadata or database described.

Annex B: Options for machine-interpretable DCAPs

DCAPs can be expressed in machine-interpretable schema languages, and such machine-interpretable schemas can be manipulated by software applications. This CWA does not give detailed recommendations on how such schemas should be structured, as a number of issues are still open for debate. The scope of this CWA is limited to recommending how application profiles can be expressed as text documents. Future options for machine-interpretable DCAPs are outlined below.

Currently, two schema languages specified by W3C might be considered: XML Schema [XML-SCHEMA] and RDF Schema [RDF-SCHEMA]. The choice of schema language will be influenced by the functionality that the schema is intended to support – for example, whether it is required as a predictable format for data exchange or intended to support inferences about existing metadata. Such different objectives imply different choices between the two schema languages. There has been some discussion on ways to combine XML Schema and RDF Schema to more fully express characteristics of application profiles [HUNTER]. More recently there has been an attempt within the W3C to differentiate RDF Schema as a vocabulary description language and XML Schema as a basis for providing structured data exchange.

An XML schema provides a structured expression that supports validation of instance metadata. In effect, an XML schema provides a document "template" which acts as an exchange format for metadata instances. An XML Schema serves the same function as an XML DTD with additional capability for extensibility and namespace handling.

An RDF schema expresses relationships between terms, providing a data model for expressing the semantics of terms – their properties, classes, and definitions. The underlying RDF data model combined with the use of unique identifiers allows software to infer relationships between terms and perform data aggregation.

RDF Schemas are effective for expressing the semantics of application profiles, whilst XML Schemas are more effective for expressing cardinality, data-typing, and constraints. Possible approaches to the expression of application profiles in RDF have been explored within projects such as SCHEMAS [BAKER] and MEG [MEG-REGISTRY].

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Proposed text of the agreement between DCMI and the CEN/ISSS Workshop on MMI-DC

1. CEN will make available the CWAs that are produced by its Workshop MMI-DC for download on the web, under the usual CEN conditions for download (for personal use only, etc). DCMI may include a link to the CWA at the CEN Website

2. DCMI may, but is not obliged to, assign an official DCMI status to documents produced and agreed by CEN Workshops, specifically DCMI Recommendation or DCMI Recommended Resource. DCMI will clearly indicate that such documents have been produced in the context of CEN. Availability of these documents will be through linking to the CWAs concerned on the CEN web-site.

3. *CEN grants a royalty-free copyright licence to DCMI to modify CEN CWAs, with full acknowledgement of the original source, and to put these modified ones on the DCMI Web site*

4. DCMI commits to provide feedback to CEN on the CWA so that the CWA can be updated through CEN procedures. CEN will take the necessary steps, through its Workshop procedure, to update its CWAs, when requested by DCMI.

5. During development of a CWA, CEN grants DCMI the right to post working drafts on the DCMI Web site and invite public comment and contributions, with a clear indication that this work takes place in the context of CEN. DCMI will channel comments from the DCMI community to the CEN Workshop.

6. In such cases as CEN were no longer able to maintain a Dublin-Core-related CWA, DCMI may, but is not obliged to, take over the maintenance and further development of such document under the normal rules and procedures governing work within DCMI, acknowledging that the original version of the document was produced in the context of CEN and referring to the latest official CWA version.

7. DCMI may, in consultation with CEN, propose a CWA - prepared in the context of CEN and endorsed as a DCMI Recommendation - for consideration by global standards organizations such as ISO and IETF, for approval as an international standard, Internet Standard or RFC.

8. This agreement will be [reviewed](#) between CEN and DCMI at the time when [WS-MMI-DC](#) would [close](#) down [but in any case not later than](#) March [2005](#).

Topic: PBCore - Public Broadcasting Metadata specification
Modified: 2004-03-22 09:41, Monday
Maintainer: Tom Baker
Latest version: <http://dublincore.org/usage/meetings/2004/03/ISSUES/profiles-pbcore/>
See also: <http://dublincore.org/usage/meetings/2004/03/ISSUES/>

Shepherd: Diane Hillmann

SUMMARY (Tom)

In February, the (US) Corporation for Public Broadcasting put out a Public Broadcasting Metadata specification for review (see below). The specification is available at <http://www.utah.edu/cpbmetadata/PBCore/> -- however, only as a series of Web pages, which makes it problematic to include in the packet. Something will be included in the supplementary packet to be generated on March 11.

Date: Mon, 16 Feb 2004 13:03:51 +0100
From: Thomas Baker <thomas.baker@bi.fhg.de>
To: DCMI Usage Board <dc-usage@jiscmail.ac.uk>
Subject: BATH Agenda: PBCore Metadata Dictionary?

The Corporation for Public Broadcasting in the US wants to use and promote the use of a "PBCore Metadata Dictionary" based on Dublin Core [1]. They are currently (in February) in a comment period, so this is a good opportunity to provide feedback and perhaps nudge them in some helpful directions.

Several issues jump off the page:

- 1) They use the "dotty" naming style, implying they have HTML in mind.
- 2) They want to refine the CCP elements but propose to do this with Creator.Role, Contributor.Role, and Publisher.Role.
- 3) They propose to refine Relation by creating a tag Relation.Type, which would hold a controlled vocabulary of types such as Has Version -- as opposed to Relation.Identifier, which is to hold the identifier.

I would suggest we put this on the agenda with the goal of providing a someone expanded version of the above list, with pointers to better practice. For example, the explanation that Diane and Rebecca are working on about the use of MARC Relator terms could form part of that feedback.

The task of the shepherd will be to formulate the UB comments as a two-page email to the drafters of this proposal.

From: Marcia Brooks <marcia_brooks@wgbh.org>
Sent: Monday, February 02, 2004 6:18 PM
Subject: Request for Input: Public Broadcasting Metadata Initiative

Dear Colleague,

For the past several years, a team of public radio and television producers and managers, archivists and information scientists, called together by the Corporation for Public Broadcasting, have been meeting to develop a single, shared protocol for identifying and describing our rich media assets.

Administered by WGBH/Boston, the Public Broadcasting Metadata Initiative <<http://www.utah.edu/cpbmetadata/>> is a cross-organizational, multi-disciplined effort to establish a standard way to describe all public broadcasting content (radio and television), so that it can be more easily exchanged between colleagues, software systems, institutions, community partners, individual citizens, etc. It is our belief that in a rapidly evolving and deeply challenging media environment, a well-formed Metadata Dictionary directly addresses our core mission of serving the people of the United States. By working hard to sensibly describe public broadcasting content with standardized, accurate descriptions, we can facilitate easy access and use by teachers, scholars, lifelong learners, engaged citizens and community partners.

We are now at a point where we need to validate our work by gaining the insights of key representatives from both within and outside of the public broadcasting community, and we would like to solicit your assistance in this validation process.

We have created an online survey that is linked to the Public Broadcasting Metadata Dictionary (PBCore). Each PBCore metadata element (which is based on the internationally-accepted Dublin Core format) is described along with its attributes and controlled vocabularies. Your feedback as to the clarity and usefulness of each element will be gathered through this online process - which can be broken up into multiple sessions should you desire.

We hope you will be willing to help us in this important process. Should you wish to substitute a person in your organization or business who is more familiar with

content exchange and/or metadata issues, please feel free to indicate their name, phone and e-mail address in your reply to this e-mail. Please reply by February 9 to our project consultant, Mr. Steven Vedro of Madison, Wisconsin, at <srvconsult@charter.net>.

Upon your confirmation of participation, Steven will contact you (or your delegate) with additional details, and you will be welcome to participate at any time during the survey process, which will be conducted from February 16 through February 25.

Thank you in advance for your consideration and assistance.

Marcia Brooks, Project Director, Public Broadcasting Metadata Initiative WGBH/Boston

PB Core — the Public Broadcasting Metadata Initiative: Progress Report

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Abstract

PB Core is the result of the public broadcasting metadata initiative (PBMI). It is an effort of the public radio and television broadcasters to develop a schema for the description of their assets. PBMI is under the auspices of the Corporation for Public Broadcasting. The paper discusses the user-centered development of the schema, the elements of the PB Core, the application profile, and the feedback and evaluation process of the schema.

Keywords: Public Broadcasting Metadata Initiative, Dublin Core, PB Core, Media Asset Description.

1. The Need for Public Broadcasting Metadata

As public broadcasting endeavors to maintain our value and values in a dramatically altered media environment, we know we must do three things: develop and deliver content across multiple platforms, strengthen our editorial and service partnerships, and engage in more efficient methods of conducting our new and legacy activities.

The recent convergence of IT capabilities with those of radio and television broadcasting has caused us and our constituents to appreciate that our prized editorial output (video clips, audio interviews, transcripts, etc.) can be understood as a series of digital assets, that can be identified, exchanged and distributed using an advanced digital infrastructure. Our ability to network – to exchange rich media content – within and across our newsrooms, production suites, satellite and terrestrial distribution systems, etc., and even with our educational and community partners (schools, libraries, museums) has never been greater. We have been afforded a tremendous

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opportunity for cultural relevance and operational efficiency.

In a public broadcasting system made up of hundreds of independent licensees, the challenges of organizing universal processes for asset appraisal, digitization, rights clearance, preservation, etc. are myriad, perhaps overwhelming. We did understand, however, that the foundation of any future effort in this direction would be a single, shared protocol for identifying and describing our rich media assets.

The Public Broadcasting Metadata Initiative (PBMI) is a cross-organizational, multi-disciplined effort to establish a standard for all public broadcasting content (radio and television), in order that metadata might be more easily exchanged between colleagues, software systems, institutions, community partners, individual citizens, etc. The PBMI will be a "touchstone," a single, streamlined standard to which other database structures, including those of PBS, NPR, major producing stations, and other asset/content management systems will be "mapped." It can also be used as a guide for the onset of an archival or asset management process at an individual station or institution.

The project has been extant since January of 2002, and during its first two phases of CPB Future Fund support, a team of individuals representing public broadcasting's key institutions and endeavors, along with subject matter experts (see appendix for list of participants) has worked to:

- § Develop consensus regarding project objectives and timeline;
- § Recognize and codify the way our constituents use our content and content information. (Developed use cases based on interviews with producers, broadcast operation staff, educators, website creators, etc.);
- § Examine relevant metadata standards in the media and library communities, to ascertain their applicability to our content and constituencies;
- § Make information about the PBMI available via numerous conference presentations and a project website;
- § Contribute and combine the substantial metadata work already performed at key institutions in public broadcasting (PBS, NPR, WGBH, KUED, MPR);
- § Form a preliminary consensus regarding a single set of metadata protocols - the Public Broadcasting Core (PB Core) Metadata, Preliminary Version.1.

2. What Alternatives Were Available

The main goal of the PBMI is to create a schema that is easily understood, implemented and adopted by the Public Broadcasting community at large. PBMI embarked in a detailed review of existing metadata standards that are used for the description of rich media assets. These included

standards that deal with the descriptive, administrative, and educational aspects of the assets. In general, while many of the metadata standards discussed below are in development, the Dublin Core Element Set has remained stable since its 1.1 revision in 1999 [1]. Additions and other changes to the Dublin Core model come in the form of recommendations and application profiles, but the basic core of 15 elements remain unchanged. So we have built our model upon the Dublin Core that provides a solid foundation that is extensible, scalable, and easy to understand.

The standards that were considered were OAIS, SMEF-DM, MARC, METS and MPEG-7, as well as the educational standards SCORM, LOM, IMS. These are briefly discussed below.

OAIS: Reference Model for an Open Archival Information System [2] is a framework and reference architecture for digital preservation.

SMEF-DM: Standard Media Exchange Framework - Data Model [3] is an end to end broadcast production model, workflow oriented. Our assets may involve domains or materials not exclusive or even related to broadcasting, such as CD-ROM, DVD, books. Metadata was determined to describe assets as objects or files. However, SMEF mandates a specific workflow with limited options. For example, assumptions are made on the order of activities. Our experience is that productions have many different workflows that must be accommodated.

MPEG-7: "Multimedia Content Description Interface" is a highly structured standard focusing on multimedia. Our model does not preclude a station adopting MPEG-7 because the PB Core is based on the Dublin Core model and will map to MPEG-7. On the other hand, MPEG-7 is narrowly focused on multimedia, not on the wide range of other media or materials that will be found in a producing station's repository. See e.g., Hunter [5,6], Agnew [7].

MARC: The MARC formats are standards for the representation and communication of bibliographic and related information in machine-readable form [8]. MARC requires a cataloging skill set that is not likely to be found in most public broadcasting stations. Our model insists on the integrity of each asset (version or format of the content). Dublin Core crosswalk maps to key fields in MARC <http://www.loc.gov/marc/dccross.html>.

METS: Metadata Encoding and Transmission Standard [9]. The METS schema is a standard for encoding descriptive, administrative, and structural metadata regarding objects within a digital library.

SCORM: The Sharable Content Object Reference Model [10]. This is an application profile "to provide a comprehensive suite of e-learning capabilities that enable interoperability, accessibility and reusability of Web-based learning content."

IEEE LOM: IEEE 1484 Learning Objects Metadata. A Learning Object is defined as any entity, digital or non-digital, which can be used, re-used or referenced during technology-supported learning [11]. The mapping of LOM to Dublin Core is available at [12].

IMS Global Learning Consortium. IMS Meta-Data v1.2.2 [13] The IMS initiative originated in higher education but it now involves stakeholders in corporate and government training, K-12, and continuing education. The IMS learning consortium develops learning technology interoperability specifications. IMS initially set out to produce a unified specification covering metadata, content, administrative systems, and learner information. This proved to be too large a specification and IMS broke it up into component parts, with separate working groups developing each, and each being released separately.

SCORM, LOM, IMS, and DCMI education (DCEd) are examples of standards for creating, storing and serving educational metadata. The above schemas have many commonalities and there is an effort to increase interoperability among them. For example, SCORM uses LOM vocabulary. All schemas could be mapped to qualified Dublin Core elements. Extensions to our model as well as value lists (element types) allow for incorporating some of these needs.

3. Why develop PB Core?

Many parties have asked us why we did not adopt and adapt metadata schemas already in existence or in development. For several reasons, the existing standards were not appropriate to our needs. Basically, alternative schemas were either too cursory in their descriptive capabilities or far too ponderous.

An implementation project, such as the Public Broadcasting Metadata Initiative Project, generally finds that no one metadata standard completely meets its needs for descriptions of media essence. General standards, like Dublin Core, are often folded into domain- or sector-specific standards, such as MPEG-7 for multimedia and IEEE/LOM for educational resources. New elements may be devised which meet local needs not covered by any existing standards. The Public Broadcasting Core can be thought of as an application profile whose schema combines elements from multiple standards, with application-specific constraints (as in the use of specific controlled vocabularies or structured values). The PB Core must be understandable and usable by all public broadcasting entities, from the smallest local NPR radio station to the largest public television producers of national programming.

The PBMI's primary interest is in data exchange, data crosswalks, and interoperability, not necessarily in creating a complete metadata model that can be exploited by digital asset management systems for comprehensive, original cataloging and markup of essence. The Project desires to facilitate the sharing of metadata and the discovery of valued assets. The PB Core is intended to be "simple," but not "simplistic." Furthermore, the PB Core should be considered as a starting point that may accommodate

metadata extensions of interest to specific communities and users.

Consequently, the Project undertook a path that would reflect the Public Broadcasting industry's needs and wants regarding media assets by gathering together representatives from public broadcasting and growing a consensus. The unique quality of public broadcasting, both television and radio, is its local ownership and local ties to its surrounding communities. In a parallel fashion, the Public Broadcasting Metadata Initiative was designed to tap into the various local constituencies and develop a metadata core from "grassroots" origins, rather than by administrative edict.

The Project conducted a detailed "needs assessment" of public broadcasters. Such measures are revealing and often unmask and articulate conditions, issues, needs, and desires that otherwise are dismissed or forgotten. By applying user-centered techniques PBMI was able to discover a wide spectrum of needs and applied the most appropriate metadata elements.

4. The Process for Assessing the Need and Gathering User Requirements

Public broadcasters have always endeavored to engage in complex and robust relationships with their constituents, whether those are viewers, listeners, educators, community leaders, etc. We have always provided extensive outreach for our broadcast content, with particular emphasis on the needs of K-12 teachers and lifelong learners. Today, with the advent of the Internet, that outreach is more significant and successful than ever before. As mentioned above, we also have an extremely complex structure; as opposed to our media counterparts, who increasingly concentrate their ownership and control of media outlets, very little of public broadcasting's operations are centralized. We have innumerable systems for producing and tracking our content, and our institutions are structured in a variety of ways, often based on who holds the broadcast license.

In order to ascertain the metadata needs of our "external" users – constituents – and "internal" users – local and national staff – we first created a list of users, and then double-checked this "strawman" with the core PBMI working group. A "User Requirements Team" was formed from within the working group. Using the now-modified user list, they set out to create a series of Use Case Scenarios. During this process, the "User Requirements Team" interviewed a large number of stakeholders, including national program distributors, local station broadcast operations and IT staff, a K-12 "learning object" consortium, an independent television production company, a television graphic artist, and "interactive" specialists (web and TV).

The interviews provided very useful feedback that helped define aspects such as the levels of granularity for the description of assets, the specificity with respect to the

number of elements, type of information to be described, such as rights, and encoding standards, e.g., XML. For example, what emerged from the interviews was a clear division between full-program metadata (such as title, format, date), which serves the needs of national distribution and local broadcast operations, and fragment, or clip-level data, which serves the needs of producers, educators, and website programmers. Most use case participants felt that it was critical to have a simple, intuitive set of metadata elements, with extensions for particular constituencies, e.g., K-12 curriculum-correlation, or graphics creation, so that the maximum number of assets could be identified and retrieved by the greatest number of individuals and institutions.

There was a great deal of concern about rights management, without which future business and service models crumble. Several interviewees felt that the working group should also determine standards for metadata exchange, such as XML.

5. The Process of Refining the PB Core

A powerhouse of motivated and opinionated experts was assembled to contribute to the Public Broadcasting Metadata Initiative Project. The members were drawn from a variety of communities related to public broadcasting:

- National public television organizations and program distributors
- National public radio organizations and program distributors
- Online Internet-based resource organizations
- National program producers
- State and regional network organizations
- Community radio and TV licensed stations
- University radio and TV licensed stations
- Educators
- Metadata subject matter experts

The initial work of the members for the Public Broadcasting Metadata Initiative Project lasted seven months. The overarching goal of the group was to recommend usable metadata fields that would facilitate the exchange of program and resource information between public broadcasting communities and other interested parties. Guiding our work process was the question, “How would a particular metadata element ultimately contribute to the discovery of public broadcasting’s intellectual content by various end-users”? The objectives of the Working Group were to:

- Develop and refine user requirements for a sharable metadata element set.
- Review existing metadata schemas to determine their applicability to the public broadcasting arena,

to identify gaps and overlaps, and to incorporate the most germane while discarding the least useful or confounding.

- Determine the scope and breadth of a usable metadata schema that was consensus-built, extensible, and interoperable with other asset management systems and databases.
- Draft a preliminary application profile of the public broadcasting core metadata of descriptors and their usage.
- Present the PB Core to the public broadcasting community for review and comment.
- Refine and revise the PB Core prior to release and publication.

In the seven-month time period, two full meetings of the entire Working Group were conducted, as well as follow-up committee work.

- First Meeting: 2002-4-24&25
- Committee Work: 2002-Summer, PB Core Review Team and User Requirements Team
- Second Meeting: 2002-9-12&13
- The Boston Summit: 2002-10-16,17,18

These activities led to an intensive three-day work session in Boston (2002-10-16,17,18), where the Public Broadcasting Metadata Core was refined and honed by the PB Core Review Team.

Before the Boston Summit, the PB Core Review Team had surveyed existing metadata dictionaries from various authorities and organizations, including those in use by several public broadcasting groups. A total of 467 separate metadata elements were compiled, which spawned 2335 recommendations for grouping and collapsing the elements into the most relevant. From these recommendations, a total of 249 working metadata elements and their qualifiers were selected.

The work of the PB Core Review Team at the Boston Summit combined redundant elements, discarded the less relevant, and debated the appropriate application of preferred metadata within the dictionary. The Summit yielded a preliminary draft of 58 metadata elements and their qualifiers that were most appropriate to public broadcasting and related communities. (For details see <http://www.utah.edu/cpbmetadata/PBCore>)

6. The Public Broadcasting Core Elements

Many of the 58 metadata elements selected for the Public Broadcasting Core of metadata descriptors were drawn from the Dublin Core Metadata Initiative. Others were retained from existing public broadcasting digital asset management systems in development. Still others were drawn from additional working groups.

The PB Core Elements could be placed into three categories or clusters:

- **Content:** 20 elements describing the actual intellectual content of a media asset or resource.
- **Intellectual Property:** 9 elements related to the creation, creators and usage of a media asset or resource.
- **Instantiation:** 29 elements that identify the nature of the media asset as it exists in some form or format in the physical world or digitally.

Table 1 reviews the 58 elements and qualifiers currently under consideration by the Public Broadcasting Metadata Dictionary Project. The Registration Authorities

listed represent the agency of responsibility for the long term integrity and viability of particular metadata elements and associated qualifiers:

- DCMI: Dublin Core Metadata Initiative
- DC-Ed: DCMI Education Working Group
- ViDe: Video Development Initiative
- [PBCore]: Corporation for Public Broadcasting as Interim Steward
- [MPR]: Minnesota Public Radio as Interim Steward

Table 1. Recommended Metadata Elements of the Public Broadcasting Metadata Initiative Project

Element Name	Registration Authority and Element Definition
01.00 Title	DCMI: A name given to a resource, as well as any other title(s) that would be useful in uniquely identifying a resource and that would facilitate discovery and retrieval.
01.01 Title.Alternative	DCMI: An Alternative Title is used in order to identify an asset or resource that has a title similar to the proper title, but which further assists in discovery and retrieval.
01.02 Title.Series	[PBCore]: A Series Title is one specifically identified by the video or audio production agency and is named as such in order to facilitate discovery and retrieval, as well as to more accurately reflect how a resource's title fits into a hierarchy of proper titles that are used to describe it.
01.03 Title.Episode	[PBCore]: An Episode Title is one specifically identified by the video or audio production agency and is named as such in order to facilitate discovery and retrieval, as well as to more accurately reflect how a resource's title fits into a hierarchy of proper titles that are used to describe it.
01.04 Title.Program	[PBCore]: A Program Title is one specifically identified by the video or audio production agency and is named as such in order to facilitate discovery and retrieval, as well as to more accurately reflect how a resource's title fits into a hierarchy of proper titles that are used to describe it.
02.00 Creator	DCMI: An entity primarily responsible for making the content of the resource or asset. May be a person, business, organization, group, initiative or service.
02.01 Creator.Role	[PBCore]: Unlike print resources, there is no single role, such as author, that is commonly understood to have primary responsibility for the intellectual content of many resources, such as audio, video or film assets. In such cases, creators can include many different roles deemed to have primary responsibility for the creation of the essence, such as the instructor for a video course, the interviewee from a video history program, or the director of a feature film.
03.00 Subject	DCMI: The topic(s) of the intellectual content of a resource or asset. Contains controlled values and uncontrolled values (keywords). Use the Description element for more free-form text descriptions of a resource.
04.00 Description	DCMI: An account of the intellectual content of the resource. Descriptions are more free-form text entries when compared to the controlled vocabularies associated with the Subject element.
04.01 Description.Abstract	DCMI: As an account of the content of the resource, the qualifier Abstract is a short narrative summary of the topic of the resource. Provides additional supplied text by experts that adds color or insight to the description of the resource or asset not otherwise identified in the more specific content related fields. Anecdotal comments welcomed.

Element Name	Registration Authority and Element Definition
04.02 Description.Table of Contents	DCMI: As an account of the content of the resource, the qualifier Table of Contents is used for partial or full listings of subunits of the resource. Use the Table of Contents to identify other descriptive information such as: Composers and Works contained in a program; Cue Sheets; Play Lists; Rundowns; Edit Decision Lists (EDLs) (unformatted); Content Flags; Index of Sections or Segments; Formal Table of Contents.
04.03 Description.ProgramRelatedText	[PBCore]: As an account of the content of the resource, the qualifier ProgramRelatedText identifies other audio and textual representations of the main audio or language presentation mode for a resource or asset.
05.00 Publisher	DCMI: An entity responsible for distributing or making a resource available to other end-users and communities. May be a person, business, organization, group, initiative or service. Some resources may not have a publisher or distributor, and thus will not have an entry under Publisher.
05.01 Publisher.Role	[PBCore]: The Role that is played by a specific Publisher or Publishing entity is identified.
06.00 Contributor	DCMI: An entity responsible for making contributions to the content of the Resource, but whose contribution is secondary to any entity specified in the Creator element (for example, film editor, screenwriter, narrator). Examples of Contributor include a person, an organization, or a service. Typically, the name of a Contributor should be used to indicate the entity.
06.01 Contributor.Role	[PBCore]: The Role which a Contributor plays is identified here. Use this element and qualifier to identify important production credits for a resource, e.g., producer, director, writer, special thanks, funding agencies, programmers, designers, graphics, instructional design, etc.
07.01 Date.Created	DCMI: The creation date for a resource or program.
07.02 Date.Issued	DCMI: Date of formal issuance (e.g. publication) of a resource for general public consumption.
07.03 Date.AvailableStart	DCMI: A specific start date for a resource's availability. May refer to start dates for the availability of a program that is broadcast locally, regionally, nationally or internationally.
07.04 Date.AvailableEnd	DCMI: A specific date that a resource's availability has come or will come to an end. May refer to end dates for the availability of a program that is broadcast locally, regionally, nationally or internationally.
08.00 Type	DCMI: The nature or genre of the content of the resource, or the purpose for which the asset was created and made available.
08.01 Type.Form	[PBCore]: A format or program category for a resource.
08.02 Type.Genre	[PBCore]: The nature or genre of the content of a resource.
09.01 Format.Physical	[PBCore]: A physical manifestation of a resource as it may exist as a format or carrier that occupies physical space dimensions.
09.02 Format.Digital	DCMI: A digital instantiation of a resource that may or may not have existed originally in an analog, physical form. Digital media formats may be expressed as formal Internet MIME types or as other means of expressing the format of a digital resource.
09.03 Format.Identifier	[MPR]: Identifying information about the format of a resource.
09.04 Format.FileSize	ViDe: Measures the storage requirements or file size of a digital resource in Bytes, Kilobytes, Megabytes or Gigabytes to provide the most meaning to the end user.
09.05 Format.AudioBitDepth	[PBCore]: For a program or resource, this qualified element measures an audio signal in a number of bits and answers the question, 'How Much' data is allocated to a digital sampling of an audio signal. Provides information important for identifying retrieval and playback/display requirements for a resource.

Element Name	Registration Authority and Element Definition
09.06 Format.AudioChannelConfiguration	[PBCore]: Indicates the number of audio channels configured for the playback of a resource.
09.07 Format.AudioDataRate	[PBCore]: Expressed as amount of data per second and indicates how much data is delivered through a particular delivery pipeline for every second.
09.08 Format.AudioSamplingRate	[PBCore]: Measured in kiloHertz for a program or resource, this qualified element quantifies 'How Much' data is allocated to a digital sampling of an audio signal. Provides information important for identifying retrieval and playback/display requirements for a resource.
09.09 Format.ImageAspectRatio	[PBCore]: Indicates the ratio of horizontal to vertical proportions in the display of an image or moving image.
09.10 Format.ImageBitDepth	[PBCore]: For a program or resource, this qualified element measures a still or moving image in terms of the number of bits in a sample, and answers the question, How Much data is allocated to a digital sampling. Provides information important for identifying retrieval and playback/display requirements for a resource.
09.11 Format.ImageChannelConfiguration	[PBCore]: Indicates the number of image channels available in a resource. May be most appropriate for digital files, like QuickTime in which multiple video tracks can be encoded in a single file.
09.12 Format.ImageColorCode	[PBCore]: Indicates the color or lack of color in an asset. Does not measure the specific color metrics of a image or moving image.
09.13 Format.ImageDataRate	[PBCore]: Expressed as amount of data per second and indicates how much data is delivered for an image or moving image through a particular delivery pipeline for every second.
09.14 Format.ImageFrameRate	[PBCore]: Indicates the frames per second found in a resource's playback or display.
09.15 Format.ImageFrameSize	[PBCore]: Indicates the horizontal and vertical resolution of a format type. May be expressed in pixels, pixels per inch, or in the case of ATSC digital TV, a combination of pixels measured horizontally vs. the number of lines of image data stacked vertically (interlaced and progressive scan).
09.16 Format.TimeStart	[PBCore]: Indicates a time stamp representing the beginning point for the playback of a resource. Use in combination with Format.Duration to identify a sequence or segment of a resource that has a fixed start time and end time.
09.17 Format.Duration	ViDe: Describes the duration in time units for a resource, if that resource has an identifiable, linear start-to-end playback. Format.Duration does not describe the time required to utilize a resource in a setting, but is rather a strict playback time, TimeStart to TimeEnd.
09.18 Format.Standard	[PBCore]: The standard refers to an overarching architecture for underlying media formats.
09.19 Format.Type	[PBCore]: The Qualifier of Type is hierarchically a subset of the values found under Format.Standard and describes specific kinds of media formats found for each media standard.
09.20 Format.Encoding	[PBCore]: This proposed element with qualifier is designed to offer a single element with which the various media standards and their collected format types can be identified for a particular resource.
10.00 Identifier	DCMI: An unambiguous reference or identifier for a resource within a given context. Best practice is to identify a resource by means of a string or number corresponding to an established or formal identification system.
11.00 Source	DCMI: A reference to another resource from which the present resource is derived.
12.00 Language	DCMI: The primary language of the intellectual content of the resource, usually expressed by the audio track. If other, alternative audio and textual representations of the main audio or language presentation mode exist for a resource or asset, describe that information in the Language.Usage element.
12.01 Language.Usage	[PBCore]: The qualifier Language.Usage identifies the existence of other audio and textual representations of the main audio or language presentation mode for a resource or asset.

Element Name	Registration Authority and Element Definition
13.01 Relation.Type	[PBCore]: Relation.Type identifies a second resource that is related to the primary resource. It defines the relationship between the second resource and the primary resource. While the primary resource is described by the rest of the asset management's database record, the second resource is described using the Relation field.
13.02 Relation.Identifier	[PBCore]: Identifies a second resource related to the primary resource by using a specific numbering or labeling scheme to call out the related resource. Used in combination with the Relation.Type element to cross reference the type of relation with a unique identifier for that relation.
14.01 Coverage.Spatial	DCMI: Identifies the extent or scope of the resource's content from a spatial or geographical perspective of the intellectual content of a resource. Coverage.Spatial is used for geographic coordinates of maps and map-like images (e.g. aerial maps or map-like images concatenated as a video file) or to associate place names or logical jurisdiction for a resource.
14.02 Coverage.Temporal	DCMI: Identifies the extent or scope of the resource's content from the perspective of the temporal or time characteristics of the intellectual content of a resource. CoverageTemporal is used for date and time-based events, designated numerically for precision searching, where the time element is critical for identification and use of the resource.
15.00 Rights.Usage	[PBCore]: Information about rights held in and over the resource, particularly in what manner the resource will be used, eg., broadcast, web, PDAs, or education/classroom.
15.01 Rights.Reproduction	ViDe: Statements or references about rights held in and over a resource, specifically regarding the rights to reuse, repurpose or reproduce a resource.
15.02 Rights.Access	ViDe: Access information about rights held in and over a resource. Rights.Access indicates either 'open access' or 'restricted access.' These two options are used as flags to trigger certain actions. For example, metadata records with 'restricted access' will not be exposed for mining by OAI initiatives.
16.01 Audience.Level	DC-Ed: A general statement describing the education or training sector. Alternatively, a more specific statement of the location of the audience in terms of its progression through an education or training sector or level.
16.02 Audience.Rating	[PBCore]: Designates categories of users for whom the resource is intended or judged appropriate. Standard ratings have been crafted by the broadcast television industry which are useful.
18.00 Annotation	[PBCore]: General field to be used to append helpful information for the metadata markup team about an asset and its metadata.
19.00 Location	[PBCore]: Identifies the location of a specific format or instantiation of a resource. Usually a text string describing where in the physical world the resource's physical format resides. This is not an ID number, but a location identifier. Used when the actual physical form is being indexed in an asset management system.
99.00 Special Extensions	Extensions are additional descriptions for media resources that have been crafted by organizations outside of the PBCore development initiative. These extensions fulfill the metadata requirements for these outside groups as they identify and describe their own types of media with specialized, custom terminologies. Eg: DC-Ed Audience; Audience.Mediator; Standard; Standard.Identifier; Standard.Version IEEE LOM InteractivityType; InteractivityLevel; TypicalLearningTime

7. The Application Profile

The 58 elements are delineated by 15 attributes according to the modified ISO 11179 Specification and Standardization of Data Elements [14]. The full accounting

of the specification is too large a document to include in this paper.

1. Element Number
2. Element Name
3. Version of the Element

4. Element Label
5. Definition
6. Namespace Identifier
7. Registration Authority
8. Language of the Element
9. Obligation in Usage
10. Data Type
11. Maximum Occurrence
12. Encoding Schemes
13. Restricted Values
14. Examples
15. Usage Guidelines

PBMI's interest is in data exchange, data crosswalks, and interoperability, not necessarily in creating a complete metadata model that can be exploited by digital asset management systems for comprehensive, original cataloging and markup of essence. Consequently, the primary desire of PBMI is to facilitate the sharing of metadata and the discovery of valued assets. Within the Application Profile, issues of concern to PBMI are:

- Who will serve as the real registration authority that takes responsibility for the declaration and maintenance of our newly defined, custom elements and their qualifiers that are not already part of a standard?
- Who will publish versions of the Core and its updates? Provide documentation? Provide Technical Support?
- How will we monitor adoption and compliance?
- How will we measure successful implementation?

The Project recognizes that it needs to remain focused on the fact that the Working Group is not a body of "standards makers." Rather, we are "real life implementers" who are tasked with generating effective solutions in order to service the efficient and widespread delivery of public broadcasting's intellectual content. Similar to our day-to-day business, we are engaged in applied and practical solution-making.

Like many other groups debating the application of metadata schemes, the Project remains conflicted in how best to match metadata descriptors with various instantiations of essence and assets. The question of embracing a "one-to-one" relationship between a metadata record and its associated essence or subscribing to a "one-to-many" relationship between a metadata record and the various instantiations of its essence still plagues the PBMI Project. Compelling arguments have been presented on both sides of the issue. We are hopeful that the next phase of our project, a Request for Comments, will assist us in sorting out a solution.

8. Feedback and Evaluation Mechanisms

To a great extent, the work of the Public Broadcasting Metadata Working Group has modeled an unheard-of process – coordination and consensus across vastly different institutions, on a topic of extreme detail and importance. The Preliminary PB Core is ready to be reviewed and tested.

During the next several months the Working Group will be asked to engage in an even more difficult process – a mid-course evaluation.

The group will be divided into task teams, and through research, interviews, conference calls, and "thought papers," will address the following issues and objectives:

- determine that the PB Core is sustainable over time (including knowing its lifespan, form, cost, etc. and how stations and producers can be made to comply with the protocol);
- ensure that the PB Core's strategic value is understood and acknowledged by senior management who will need to support it;
- devise a plan to integrate the PB Core into the day-to-day operations within local and national content infrastructures, especially the PBS Next Generation Interconnection System and NPR's Content Depot.

It is our assumption that these difficult questions will be answered in a manner that leads the project to the RFC (Request for Comments) process, and then test implementations in typical metadata scenarios.

The RFC process will include other public broadcasting production, IT and broadcast operations staff, key software vendors serving the industry, standards organizations, partnering institutions, etc.

Test implementations of the PB Core, still to be determined, will likely include radio, television and website production collaborations, tape libraries, national program distribution systems, as well as national producers of content. Consideration will be given to additional test participant(s) whose products, services and initiatives are used by, and/or relate to public broadcasting stations and organizations.

9. Next Steps

The PBMI process has illuminated for participants and observers alike the critical need for a new, "advanced networking" approach toward conducting our core activities. We must change our institutions and infrastructures, even our funding models, to reflect a new spirit of exchange, collaboration and consolidation. Certainly, without Internet-like standards for descriptive and administrative metadata, rich media file formats, file exchange, etc., we will not be able to keep pace with changes in the media environment, nor will we advance our public service mission.

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- [14] ISO 11179 Specification and Standardization of Data Elements. Retrieved January 11, 2003, from <http://www.diffuse.org/meta.html#ISO11179>.

Appendix: Public Broadcasting Metadata Initiative Project Participants

At Large

Marcia Brooks, WGBH (Project Director)
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Alison M. White, Corporation for Public Broadcasting

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Paul E. Burrows, Media Solutions, OIT, University of Utah
Brian Callahan, WHRO (*former participant*)
Michael Connet, onCourse
David Felland, Milwaukee Public Television
Tom Handy, KWSU (*former participant*)
Steven Heard, Public Interactive
Rob Holt, NPR Online
Dave Johnston, PBS Online
Ann Lootens, WGBH
Dave MacCarn, WGBH
Chuck McConnell, NETA/OSBE
Bea Morse, Public Broadcasting Service (PBS)
Robin Mudge, onCourse (*former participant*)
Lesley Norman, David Grubin Productions (*former participant*)
Meg O'Hara, WNET
Tim Olson, KQED
Marilyn Pierce, Public Broadcasting Service (PBS)
Richard Ruotolo, Public Radio International (PRI)
James Steinbach, Wisconsin Public Television
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Brent Trinacty, Public Radio International (PRI) (*former participant*)
Cate Twohill, Public Broadcasting Service (PBS)
Steven Vedro, Consultant
Tracy Vosburgh, WPSX (Penn State University)
Michael Yoch, NPR Online (*former participant*)
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Additional Support Provided By

Scott Bridgewater, National Public Radio Public Radio Satellite Service (NPR PRSS)
Carrie Lowe, Public Broadcasting Service (PBS)
Thom Shepard, WGBH
and other staff at many of the participating organizations listed above

Date: Mon, 8 Mar 2004 17:08:27 -0500
From: "Rebecca S. Guenther" <rgue@LOC.GOV>
Subject: Some comments on PB Core
To: DC-USAGE@JISCMail.AC.UK

Because I participated in the survey about the PBCore metadata dictionary, I was able to get a sense of some of the issues we might be concerned about in a Usage Board review. I have selected some sample elements to illustrate what some of these issues are. This is not comprehensive.

The article in the 2003 conference program is reasonably complete, but does not have as much description and does not include examples, as the survey did. I will bring a copy of some sample elements that shows this additional information.

Comments about PBCore

1. They use the "dot" syntax. This has implications for the element names that they have chosen. They need to realize that the refinements will stand alone and not be related to the element they refine except in the RDF expression. Our latest ruling on this was to have refinements be able to stand alone. For example: Title.Program should be programTitle.

2. Example: Title.Series.

I question whether this is a refinement of title but of Relation. The semantics of title are:

Definition: A name given to the resource.

Comment: Typically, Title will be a name by which the resource is formally known.

In this case, series is at a different level hierarchically; it is really a related title, that is, the series in which the title appears. Thus I would call it Relation isPartOf or a new refinement isPartOfSeries. We discussed this in the context of the DC-Lib AP and decided to use isPartOf.

3. Type.Form

This is described as the manner in which the content of a resource is structured for presentation, viewed or heard by a user. It has a controlled list. It also says it has an implied hierarchy when using Type, Type.Form and Type.Genre. Examples are documentary and tutorial. This distinction is difficult to make and I can't really tell here which is which. I'm also not sure how this so-called hierarchy can be conveyed.

4. Description.ProgramRelatedText.

It is described as the actual text or link to text. I imagine this violates the 1:1 principle, since it is really another representation of the program in textual form.

5. Relation.Type

This implies that there is an attribute type with a list of values. Those values are what are the refinements themselves (e.g. hasFormat, isFormatOf, etc.). Not the way DCMES does things.

6. Relation.Identifier

Specifies that this is free text. Examples include a URI but also includes an ISBN or a string specifying a location (e.g. "Room 217: Section C: Shelf 5"). If it's a URI, it should be identified as a URI (refining Relation). If it's free text, I'm not sure it refines the semantics of identifier:

"An unambiguous reference to the resource within a given context. "

and we don't generally embed one DC element within another.

7. Creator.Role, Contributor.Role, Publisher.Role

We all remember the discussions about this one; the particular role is the refinement.

8. Language.Usage

Says it identifies the existence and type of other audio and textual representations of the main audio or language presentation mode for a resource or asset. It has a controlled list that includes "DV1", "SAP1", "Open caption", "DVD Subtitle01", etc.

I don't think this is at all consistent with the semantics of language:

"Definition: A language of the intellectual content of the resource.

Comment: Recommended best practice is to use RFC 3066 [RFC3066] which, in conjunction with ISO639 [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."

This brings up:

1. What does it mean to register an application profile?
2. How much detail needs to go into the review of an AP? Every element?
3. What do we need to say about syntax (i.e., they're using the dot syntax here, appropriate only in HTML)?
4. What if an AP requires some sort of hierarchy in metadata elements?

Topic: Review of application profiles
Modified: 2004-03-22 09:41, Monday
Maintainer: Tom Baker
Latest version: <http://dublincore.org/usage/meetings/2004/03/ISSUES/profiles/>
See also: <http://dublincore.org/usage/meetings/2004/03/ISSUES/>

Shepherd: Tom Baker

SUMMARY

In principle, the Usage Board can review application profiles. There are two sets of issues here:

1) Documentation of principles and process

The issue here is to clarify which documents are being followed and whether the existing guidelines are sufficiently clear to allow us to get started with actually reviewing Application Profiles (e.g., at the Shanghai meeting).

- <http://dublincore.org/usage/documents/process/#six>
Section 6 of the Process document outlines the procedures by which we can assign the status of "conforming" to application profiles.
- <http://dublincore.org/usage/documents/profiles>
"DCMI Usage Board Review of Application Profiles"
This two-page document establishes that the Usage Board can review Application Profiles.
- <http://dublincore.org/usage/meetings/2004/03/cwa14855-20040210.pdf>
These CEN "Guidelines for Dublin Core Application Profiles", discussed in another topic, could potentially function as format guidelines for Application Profiles submitted to the Usage Board for review.

2) Actual Application Profiles in the pipeline

The issue here is to compile a list of application profiles that are potentially candidates for review. There are links in my notes but it would take awhile to pull them together; what follows is just a start (please submit additional pointers):

- <http://dublincore.org/documents/2002/09/24/library-application-profile/>
Not sure if this is the latest version and whether the Working Group is still in principle interested in a Usage Board review.
- e-GMS v3 DRAFT for public consultation
http://www.govtalk.gov.uk/schemasstandards/metadata_document.asp?docnum=840
- Public Broadcasting Metadata specification

<http://www.utah.edu/cpbmetadata/PBCore/>



[Home](#) > [Usage](#) > [Documents](#) > [Profiles](#) >

Title: DCMI Usage Board Review of Application Profiles
 Creator: Thomas Baker
 Identifier: <http://dublincore.org/usage/documents/2003/02/11/profiles/>
 Latest version: <http://dublincore.org/usage/documents/profiles/>
 Date modified: 2003-02-11
 Description: This document defines the term "Application Profile" in the context of the Dublin Core Metadata Initiative. Criteria for Usage Board review of Application Profiles and guidelines for submission are outlined in the DCMI Usage Board Administrative Processes document [PROCESS].

"Application Profile" defined

For the purposes of DCMI Usage Board review, an Application Profile (AP) is a declaration of which metadata terms an organization, information resource, application, or user community uses in its metadata. Moreover:

- By definition, an AP cannot "declare" new metadata terms and definitions; it only "reuses" terms from existing element sets [HEERY].
- The ideal element set will use URIs to uniquely identify its terms within XML namespaces [DCMI-NAMESPACE]. As of 2002, however, this cannot be required.
- By definition, any new term coined for use in an AP must first be declared in a form citable in the AP.
- An AP may also provide additional documentation on how the terms used are constrained, encoded, or interpreted for particular purposes.

As of 2002, APs are seen primarily as a form of documentation, the purpose of which is to help implementor communities harmonize their metadata practice. It is hoped that in the longer term, machine-processable versions of such APs based

on data models such as RDF will provide a basis for automating metadata interoperability functions such as semantic crosswalks and format conversions.

References

[DCMI-NAMESPACE] Andy Powell, Harry Wagner, Stuart Weibel, Tom Baker, Tod Matola, Eric Miller, Namespace policy for the Dublin Core Metadata Initiative, <http://dublincore.org/documents/dcmi-namespace/>.

[HEERY] Rachel Heery and Manjula Patel, Application profiles: mixing and matching metadata schemas, Ariadne 25, September 2000, <http://www.ariadne.ac.uk/issue25/app-profiles/intro.html>.

[PROCESS] <http://dublincore.org/usage/documents/process/>.



Metadata associated with this resource: <http://dublincore.org/usage/documents/profiles/index.shtml.rdf>

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RESOURCES

AskDCMI

Dublin Core Metadata Initiative®

[Home](#) > [Usage](#) > [Documents](#) > [Process](#) >

Title:

DCMI Usage Board (UB) Administrative Processes (Part 6 only!)

Creator: Diane I. Hillmann, dihi1@cornell.edu
Stuart A. Sutton, sasutton@u.washington.edu**Date Issued:** 2003-02-07**Identifier:** <http://www.bi.fhg.de/People/Thomas.Baker/ISSUES/CACHE/Process6.html>**Replaces:****Is Replaced By:** Not Applicable**Latest version:** <http://www.dublincore.org/usage/documents/process/>**Description of document:** This document describes the process by which the DCMI Usage Board reaches decisions on terms and application profiles, as well as its process for managing the registration of encoding schemes.

6. Proposals for Registration of Application Profiles [\[top\]](#)

6.1. Sources of proposals

6.1.1. DCMI working groups

6.1.1.1. Existing working groups

6.1.1.2. Working groups established for the purpose of developing proposals

6.1.2. Metadata implementers

6.1.3. UB itself

6.2. For the purposes of review by the Usage Board:

6.2.1. The Usage Board is interested in reviewing application profiles that make substantial use of Dublin Core elements. The review of application profiles by the Usage Board serves to:

6.2.1.1. analyze the usage of Dublin Core within significant implementations;

6.2.1.2.assign a DCMI stamp of approval;

6.2.1.3.promote the sharing of application profiles between communities;
and

6.2.1.4.identify new terms as candidates for inclusion in DCMI namespaces.

6.2.2.Application profiles must provide, for each term, an identifier of the element set where it is defined, ideally in the form of URIs for individual terms.

6.2.3.If the terms in an application profile describe anything other than generic "resources" (the typical domain of Dublin Core), the application profile must make this clear. This is particularly important if an application profile is based on a data model that describes multiple classes of resources, such as agents or collections.

6.2.4. It is recommended that application profiles be prepared using previously reviewed application profiles as models for their layout, appearance, and content. Aside from the required term and element set identifiers, there are no particular constraints on the types of documentation -- local definitions, comments, constraints, or technical notes -- that may be associated with a term.

6.2.5. Each application profile must provide, or point to, a short text that describes:

6.2.5.1.The context and purposes in which the application profile is used or is likely to be used.

6.2.5.2.The organizations or individuals involved in its development and a capsule history thereof.

6.2.5.3.Any arrangements, policies, or intentions regarding the future development and maintenance of the application profile.

6.3. Review of Application Profiles by the Usage Board

6.3.1.An application profile is "well-formed" if it is presented in accordance with the broad and flexible requirements outlined above. These presentation requirements may become more specific as "good practice" emerges over time.

6.3.2.Usage Board review focuses on the use of terms related to Dublin Core terms and on any data models that provide a context for those terms. The Usage Board is agnostic about the use of terms not directly related to Dublin Core; strictly speaking such terms are outside the scope of Usage Board review.

6.3.3.The use of terms related to Dublin Core (such as refinements of Dublin Core elements, or Dublin Core elements that have been constrained for particular contexts) will be evaluated from the standpoint of semantic conformance, grammatical principle (eg, "dumb-down"), clarity, and good practice.

6.4. Publication and use of Usage Board Reviews

6.4.1.An application profiles that "pass" review will be assigned the status of 'conforming'.

6.4.2.For application profiles that "pass" review, the Usage Board will publish a Review on a Web page for application profiles.

6.4.3.Each Review will include, at a minimum:

6.4.3.1.Any comments from the Usage Board on the application profile.

6.4.3.2.Pointers to locally archived copies of the application profile as originally submitted and (if necessary) as subsequently amended in light of

Usage Board comments.

6.4.3.3.A pointer to the "latest version" of an application profile held by its maintainers.

6.5.Review represents a form of recognition, and its URL will be persistent for purposes of citation.

Topic: AskDCMI
Modified: 2004-03-22 09:41, Monday
Maintainer: Tom Baker
Latest version: <http://dublincore.org/usage/meetings/2004/03/ISSUES/askdcmi/>
See also: <http://dublincore.org/usage/meetings/2004/03/ISSUES/>

Shepherd: Diane Hillmann

Background

After the AskDCMI service [1] had been operational for a year or so, a number of related issues were discussed in Ithaca in June 2003 [2,3].

In February 2004, Tom raised a number of questions regarding the maintenance of AskDCMI content and of the Usage Board role in its regard [4]. In particular, he suggested that there could be a stronger relationship between the AskDCMI service and DCMI's FAQ [5].

- [1] <http://askdcmi.askvrd.org/>
- [2] <http://dublincore.org/usage/meetings/2003/06/AskDCMI.html>
- [3] http://askdcmi.askvrd.org/services/askdcmi/expert_tips.asp
- [4] <http://dublincore.org/usage/meetings/2004/03/AskDCMI.txt>
- [5] <http://dublincore.org/resources/faq/>



DCMI Frequently Asked Questions (FAQ)

1. [What is metadata?](#)
2. [Where is the metadata on the Dublin Core website?](#)
3. [What is a resource?](#)
4. [What is resource discovery?](#)
5. [What is the Dublin Core Metadata Initiative?](#)
6. [What is the Dublin Core?](#)
7. [What is the Dublin Core Metadata Element Set?](#)
8. [Who can benefit from using the Dublin Core Metadata Element Set?](#)
9. [What is the difference between "Simple" \("unqualified"\) and "Qualified" Dublin Core?](#)
10. [Should I use Simple or Qualified Dublin Core?](#)
11. [How do I begin implementing the Dublin Core Metadata Element Set?](#)
12. [What is the relationship between the DCMI and other Internet standards groups?](#)
13. [Was the Dublin Core intended to be used only for digital or Web-based resources?](#)
14. [How is Dublin Core metadata used?](#)
15. [How is Dublin Core metadata stored?](#)
16. [How can I embed Dublin Core metadata within my HTML documents?](#)
17. [What is the relationship between Dublin Core Metadata and RDF and XML?](#)
18. [What is the Dublin Core data model?](#)
19. [How do I participate in discussions about the Dublin Core?](#)
20. [What is the maximum length for each field in Dublin Core?](#)
21. [What is an attribute-value pair?](#)
22. [What is the Warwick Framework?](#)
23. [What search-engines support the Dublin Core?](#)
24. [Can I add a new element to Dublin Core?](#)
25. [What is the Open Metadata Registry?](#)
26. [How do I store proper names in Dublin Core?](#)
27. [DCMI Intellectual Property FAQ](#)
28. [What is the "Dumb-Down" Principle?](#)
29. [How can I use existing controlled vocabularies for DC Subject metadata?](#)
30. [Can I use controlled vocabularies that are not approved by DCMI?](#)
31. [What are the DCMI Namespaces?](#)

What is metadata?

The simplest definition of metadata is " structured data about data."

Metadata is descriptive information about an object or resource whether it be physical or electronic. While metadata itself is relatively new, the underlying concepts behind metadata have been in use for as long as collections of information have been organized. Library card catalogs represent a well-established type of metadata that has served as collection management and resource discovery tools for decades.

Metadata can be generated either "by hand" or derived automatically using software.

Where is the metadata on the Dublin Core website?

We use separate .rdf files that contain the Dublin Core metadata information rather than including the metadata in the HTML. If you look at most of the pages on the DCMI Website, you'll see a link to the metadata at the bottom of each web page.

What is a resource?

In Web terminology, a resource is "anything addressable via a URL." However, Dublin Core implementations are not necessarily Web-based.

Dublin Core metadata can be used to describe any kind of resource - including various collections of documents and non-electronic forms of media such as a museum or library archive.

What is resource discovery?

A card catalog is the most common physical representation of a metadata system and is a perfect example of a system originally devised for locating resources that evolved into its own information system.

What is the Dublin Core Metadata Initiative?

The [Dublin Core Metadata Initiative](#) (DCMI) is an organization dedicated to fostering the widespread adoption of interoperable metadata standards and promoting the development of specialized metadata vocabularies for describing resources to enable more intelligent resource discovery systems.

[The first Dublin Core Series Workshop](#) took place in Dublin, Ohio in 1995. Since that time, the DCMI has been committed to the continual refinement of a "core" foundation of property types and values to provide vertically specific (semantic) information about Web resources, much in the same way a library card catalog provide indexes of book properties.

What is the Dublin Core?

Dublin Core metadata is used to supplement existing methods for searching and indexing Web-based metadata, regardless of whether the corresponding resource is an electronic document or a "real" physical object.

The [Dublin Core Metadata Element Set](#) (DCMES) was the first metadata standard deliverable out of the DCMI was an [IETF RFC 2413](#). DCMES provides a semantic vocabulary for describing the "core" information properties, such as "Description" and "Creator" and "Date".

Dublin Core metadata provides card catalog-like definitions for defining the properties of objects for Web-based resource discovery systems.

What is the Dublin Core Metadata Element Set?

The [Dublin Core Metadata Element Set](#) is a set of 15 descriptive semantic definitions. It represents a core set of elements likely to be useful across a broad range of vertical industries and disciplines of study.

The Dublin Core Metadata Element Set was created to provide a core set of elements that could be shared across disciplines or within any type of organization needing to organize and classify information.

Who can benefit from using Dublin Core metadata?

Anyone can use Dublin core metadata to describe the resources of an information system. Web pages are one of the most common types of resources to utilize the Dublin Core's descriptions, usually within HTML's meta tags however increasingly there are many digital archives of physical objects that are starting to make use of the Dublin Core.

Dublin Core metadata is being used as the basis for descriptive systems by several community interest groups such as:

- educational organizations
- libraries
- government institutions
- scientific research sector
- Web page authors
- businesses requiring more searchable sites
- corporations with vast knowledge management systems

(See also our listing of [Dublin Core-based projects](#)).

What is the difference between "Simple" ("unqualified") and "Qualified" Dublin Core?

"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.

"Qualified Dublin Core" employs additional qualifiers to further refine the meaning of a resource. One use for such qualifiers are to indicate if a metadata value is a compound or structured value, rather than just a string.

Qualifiers allow applications to increase the specificity or precision of the metadata. They may also introduce complexity that could impair the metadata's compatibility with other Dublin Core software applications. With this in mind, designers should only select from the set of approved Dublin Core qualifiers that were developed by the Dublin Core community process.

Unfortunately, qualifiers often introduce additional complexity that can make metadata less interoperable unless approved DC Qualifiers developed within the DCMI are used with such interoperability considerations in mind.

A "date" is one example of a DC element that has the option of being further specified to identify it as a particular kind of date (date last modified, date published, etc.).

The use of a controlled vocabulary, such as Dewey Decimal Classification, is another method that could be used to further "qualify" the meaning of resource.

For examples of embedding qualified DC in HTML please read the ["Qualified HTML Examples"](#) section of the ["Using Dublin Core"](#) usage guide.

The Australian Government Locator Service is a good example of a major implementation using Dublin Core metadata

that has added four local elements to Dublin Core in the proper, recommended way.

How do I begin implementing the Dublin Core Metadata Element set and where can I ask questions if I have questions regarding my implementation?

This is one of the most often asked questions and perhaps the most difficult to provide a catch-all answer. The wise ones say, "It depends." Unfortunately, that is the truth. It depends on your hardware, software, system resources and the goals you are trying to achieve. In a nutshell, we have a [Usage Guide](#) which provides some insight. Beyond that, we highly recommend posing questions to the [DC-General mailing list](#). Most questions can be answered there or redirected to a place where the answer can be found.

What is the relationship between the DCMI and other Internet Standards groups?

The [Dublin Core Metadata Initiative](#) (DCMI) is a consensus building organization that has relationships with many standards activities. A number of people in the DCMI are active in the [World Wide Web Consortium](#) (W3C) (DC is the prototype application that drove the development of the [Resource Description Framework](#), or RDF in the W3C).

Our own standardization activities take place in the [IETF](#) ([RFC 2413](#) is reference description of the initial version of the Dublin Core), and there are currently formal DC standardization activities underway in [CEN](#) (the European Information Industry Standardization Forum) and in [NISO](#) (the North American Information Standardization Organization) and the [IEEE](#) (Institute of Electrical and Electronics Engineers).

Was Dublin Core metadata designed to be used only to describe digital and Web-based resources?

No. The scope of the Dublin Core was specifically designed to provide a metadata vocabulary of "core" properties able to provide basic descriptive information about any kind of resource, regardless of the media format, area of specialization or cultural origin. It is important that a semantic model used for resource discovery is not dependent on the medium of the resource it means to describe.

The Dublin Core metadata vocabulary is the result of many years of collaborative research to determine a common set of properties universal for describing any type of resource. The use of a standardized general classifications system also enables metadata of such collections to be combined and for knowledge contained within each collection to be shared.

Since most Dublin Core implementations only need to process a resource's descriptive metadata, the medium of that resource becomes a non-issue. This enables DC metadata to be used by museums and other organizations interested in cataloging specialized types of mixed-media collections, while maintaining an open framework preserving their ability to share metadata with other DC implementors.

How is Dublin Core metadata used?

The term "Dublin Core metadata" is usually in reference to the 15 elements of the [Dublin Core Metadata Element Set](#) (DCMES) and its limited set of optional approved qualifiers tested and approved as "safe" for use by the Dublin Core community.

The DCMES was published in 1998 as an [IETF RFC 2413](#). Dublin Core metadata is used to supplement existing methods for searching and indexing Web-based resources, providing a semantic vocabulary to describing the "core" properties of a resource object (such as "Description" and "Creator" and "Date").

How is Dublin Core metadata stored?

Dublin Core metadata is often stored as name-value pairs within META tags, which are placed within the HEAD elements of an HTML document.

However, it can also be located in an external document or loaded into a database enabling it to be indexed and manipulated from within a propriety application.

How can I embed Dublin Core metadata within my HTML documents?

Dublin Core metadata can be stored using the meta element in the head of HTML documents. An informational IETF RFC (2731) titled ["Encoding Dublin Core Metadata in HTML"](#) defines the standard way to do this. A DCMI Note describes one method for storing Qualified DC in HTML.

What is the relationship between Dublin Core Metadata and RDF and XML?

Dublin Core Metadata Element Set (IETF RFC 2413) and RDF (Resource Description Framework) (W3C Recommendation) are two distinct specifications. Neither requires the other, but their co-evolution forms a natural complement within the Web's greater metadata architecture.

Both the Dublin Core and RDF communities have a number of members in common, and have evolved side-by-side. The Dublin Core community provided much of the basic requirements that were used to design RDF. In turn, the development of RDF provided the Dublin Core community with a much more formal underlying data model that has helped it to determine best practices and universal solutions (rather than ad hoc Band-Aids) for many of the detailed problems that were encountered during the deployment process.

Below is an example of how the Dublin Core vocabulary can be used to define additional semantics about the resources described within an RDF fragment:

```
<?xml version="1.0" ?>
<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
        xmlns:dc="http://purl.org/dc/elements/1.1/">

  <rdf:Description about="http://purl.org/DC/documents/notes-cox-816.htm">
    <dc:title>Recording qualified Dublin Core metadata in HTML</dc:title>
    <dc:description> We describe a notation for recording
qualified Dublin Core metadata in HTML meta elements.  The syntax
includes recommended usage of the standard HTML syntax to record
the different classes of qualification needed to represent the
model.</dc:description>
    <dc:date>1999-08-18</dc:date>
    <dc:format>text/html</dc:format>
    <dc:language>en</dc:language>
    <dc:publisher>Dublin Core Metadata Initiative</dc:publisher>
  </rdf:Description>
</rdf:RDF>
```

What is the Dublin Core data model?

The basic Dublin Core data model is defined by its 15 elements and the relationships defined between the resource-of-interest and whatever other resource is "in-scope" for DC.

In particular, the "Relation" and "source" elements are used to indicate a connection with another resource of any type. "Creator", "Contributor" and "Publisher" elements relate the present resource to a party who has some responsibility for it. The "Coverage" element relates the present resource to a place or to a time-period. The value recorded for each of these elements, therefore, should normally be strictly an identifier of another resource, which could have its own

DCMES description.

A completely abstracted DC data model must also include its two types of qualifiers. Value qualifiers (which store an identifier for the vocabulary, encoding or language of the value) and element qualifiers, which are used to further refine the semantic meaning of an element.

However, many users have found it useful to add extra information to Dublin Core descriptions. Particularly when values are frequently drawn from a controlled vocabulary (e.g. a keyword list, such as Library of Congress Subject Headings, LCSH), or written using a special notation (e.g. the ISO8601 format for dates and times).

Other techniques include using a particular natural language (in the case of values written in text-strings), which would make the information more useful if a client were informed of the source for this vocabulary, the definition of the notation, or the name of the language used.

How do I participate in a discussion about the Dublin Core?

Anyone may participate in discussions about Dublin Core metadata by simply joining the appropriate mailing list for the [working group](#) activity of interest.

The [DC-General mailing list](#) is the general forum for community participation and submitting general feedback.

What is the maximum length for each field in Dublin Core?

There are no limits to field length.

What search-engines support the Dublin Core Metadata Element Set?

Several commercial and non-commercial search engines will index META elements with just a little configuration.

A recent inquiry on the dc-general mailing list produced this list:

- Ultraseek
- Swish-E
- Microsoft's Index Server
- Blue Angel Technologies MetaStar
- Verity Search 97 Information Server

To get a good overview of what software is out there see [Search Tools](#) and [Search Engine Watch](#).

The well-known "all the Web" search engines including AltaVista, Yahoo, HotBot, etc. tend to avoid using the information found in meta elements in their indexing. This is because, unless the pages are from guaranteed "trusted" servers, the meta information is commonly used by unscrupulous content-providers for spamming, to mislead the indexes into giving Web-pages a misleading rating.

What is an attribute-value pair?

Attribute-value pairs are used within Dublin Core metadata to represent the properties of a resource or object.

Information such as "Author", "Creator" and "Date" are all examples of Dublin Core elements that are implemented as attribute-value pairs within HTML's META element to provide additional semantics about a resource.

Web resources are effectively information objects complete with properties that can be expressed in any number of ways. The Dublin Core Metadata Element Set (DCMES) enables properties to be assigned to a Web resource the exact

same way we might fill in the blanks for a card catalog record.

What is the Warwick Framework?

The Warwick Framework is a set of design principles that have guided the development of the Dublin Core since the [Second Dublin Core Metadata Workshop](#) in Warwick, UK.

The Warwick provides a metadata-based school of thought that believes different kinds of metadata can be used to describe the same resource in disparate ways to accomplish different goals.

For more information about the Warwick Framework, please read "[The Warwick Metadata Workshop: A Framework for the Deployment of Resource Description](#)".

Can I add a new element to Dublin Core?

In theory, yes. A DCMES element specified with an element qualifier is, effectively, a "new" element or property- with a more specialized meaning than its parent element.

However, it is not possible to create a new Dublin Core element whose meaning goes beyond the scope of the original elements in the DCMES.

It is expected that local or application-specific requirements may require additional qualifiers or elements that have not been approved by the Dublin Core community at large. Nevertheless, designers should employ additional qualifiers with both caution and the understanding that interoperability could suffer as a result.

In cases where additional qualifiers are being utilized, it may be helpful to bring this to alert the Dublin Core Directorate in order to promote the wider use of such qualifiers.

For examples of embedding qualified DC in HTML please read the "[Qualified HTML Examples](#)" section of the "[Using Dublin Core](#)" usage guide.

What is the Open Metadata Registry?

The DCMI's Open Metadata Registry is a Web-based semantic modeling tool that uses a form-driven user interface to enable an end-user to define relationships between different vocabularies.

The semantic framework for the application was created using Dublin Core metadata and RDF Schemas.

How do I store proper names in Dublin Core metadata?

The encoding of personal names is a difficult task within most metadata systems, and DC is no exception. The difficult part is that naming conventions tend to vary from culture to culture.

The recommendation for Dublin Core metadata is to encode the family name first, which supports effective collation of names and is consistent with most naming conventions globally.

What is the "Dumb-Down" Principle?

The so called "Dumb-Down Principle" simply means that in any use of a qualified DC element, the qualifier may be dropped and the remaining value of the element should still be a term that is useful for discovery.

For example, there are several date qualifiers that might be used to enhance the precision of various dates associated

with a resource. Dropping the date qualifier (say, for example, Date-Created) will still leave a useful date for discovery, though perhaps not quite as useful as if the qualifier were included.

Similarly, the specification of a subject term from LCSH, for example, is still useful even if one does not know it was selected from a controlled vocabulary.

The basic idea is that qualifiers should improve the precision of a piece of metadata, but the metadata should still be useful even without that extra precision (that is, dropping the qualifier has 'dumbed-down' the metadata).

How can I use existing controlled vocabularies for DC Subject metadata?

One can assign a metadata value selected from a controlled vocabulary as the value of the element, and then qualify that element with the name or identifier of the scheme from which it is selected (the specifics of the encoding depends on the syntax being employed. Refer to DCMI specifications for details of encoding DC metadata in HTML, XML, or RDF/XML).

DCMI registers controlled vocabularies and encoding schemes to promote their use and to facilitate consistent identification within DC metadata. Application designers should review registered controlled vocabularies to determine if there is a suitable one for their application, and use the registered name of that vocabulary in their application. For example, "DDC" is the registered Name for the Dewey Decimal Classification, and should be used as the value of the qualifier. By using registered Names or tokens to designate schemes, metadata from different applications that use common controlled vocabularies are more likely to be interoperable.

The mechanics of selecting a value from such a vocabulary is dependent on the application. It is expected that metadata editors for some domains will have tools to support such selection, but it can also be done with conventional print-based references.

Can I use controlled vocabularies that are not approved by DCMI?

Yes. DCMI registers only those controlled vocabularies that have been brought to our attention. There are, of course, many others that are equally legitimate, and it has always been our intent that communities of expertise be able to leverage the value of such existing schemes in their metadata. To promote interoperability, it is recommended that application designers review registered controlled vocabularies for one that may be suitable for their application. If a controlled vocabulary of choice is not registered with DCMI, it is possible (but not mandatory) to register it. Registration assures that others who adopt this vocabulary use the same Name token in their metadata, thereby promoting interoperability.

It is important to note that DCMI 'registers' controlled vocabularies, rather than 'approving' them. Controlled vocabularies are generally the result of substantial community expertise. It is not in the purview of DCMI to approve or disapprove such works, but rather help to make them visible for others who might choose to adopt them, and to prevent Name collisions by assigning unique tokens to identify them within DC metadata.

What are the names of the DCMI namespaces?

<http://purl.org/dc/elements/1.1/>

<http://purl.org/dc/terms/>

<http://purl.org/dc/dcmitype/>



Metadata associated with this resource: <http://dublincore.org/resources/faq/index.shtml.rdf>

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DCMI and the DCMI Web site are hosted by [OCLC Research](#).

Date: Fri, 20 Feb 2004 16:42:45 +0100
From: Thomas Baker <thomas.baker@BI.FHG.DE>
Subject: An analysis of questions on AskDCMI
To: DC-USAGE@JISCMAIL.AC.UK

Note: This file,
<http://www.bi.fhg.de/People/Thomas.Baker/ISSUES/CACHE/AskDCMI-questions.txt>,
to be archived as
<http://dublincore.org/usage/meetings/2004/03/AskDCMI-questions.txt>.

Dear all,

I took two hours to go through all of the categories on AskDCMI to see what has been happening, and here are some quick notes on the 136 questions asked there to date which I submit as a contribution to the discussion in Bath (see below; this analysis will also be archived in the directory of materials for the Bath meeting and will appear at the next build).

The official DCMI FAQ, on the other hand, currently has 31 questions, and some of these are very obviously out of date (e.g., "What is the Warwick Framework?" is not a frequently asked question, though one person on AskDCMI did in fact ask it).

My gut feeling is that we could come up with perhaps 15 broad questions which cover everything in the scope both of the current FAQ and of the AskDCMI corpus of questions. I have some ideas how this could be done.

I was also noticing that each of the questions in the current DCMI FAQ has, in effect, a citable URL, such as:

<http://dublincore.org/resources/faq/#whatismetadadata>
<http://dublincore.org/resources/faq/#dcmetadata>

I'm thinking that if we had a fifteen-question FAQ in which each question were citable in the manner above, the AskDCMI experts could answer alot of the questions simply by pointing people to the URL anchor of the corresponding question in the FAQ.

I am also thinking that such a FAQ could become the focus of ongoing Usage Board attention -- an eight-page document that every Usage Board member is expected to re-read before every meeting and which then gets explicitly re-approved by the UB at every meeting.

Tom

Home - About DCMI

- Which countries use it?
- Does DC replace AACR2?
- What is CEN?
- Do search engines index it?

Home - About DCMI - Administration

- What is the IP of DCMI documentation?

Home - About DCMI - Conferences

None.

Home - About DCMI - Boards/Committees/Working Groups

What ever happened to Admin Core?

Home - About DCMI - Documentation

What is the URL for the NISO standard?

(Garbled question.)

How do I use DC for photograph collections?

Does it cost money to use DC?

Can you recommend an article about people's names?

What are refinements?

Home - Implementation

To embed or not?

How can I use DC for content management and search in the newspaper industry?

How do I implement DC in MS-Access?

Do DCMI documents tell you how to generate tags on the fly?

Is there a classification scheme for still photos?

Is there a tool to convert USMARC to DC?

Can I use DCMI's "document status" element?

How can I put centuries and ranges into dc:date?

Is there a (DCMI) standard for keywords?

Where can I find translations of Dublin Core?

How can I describe geographic information?

How can dc:source be used to reference old books?

Was Creator.Personalname.Address approved somewhere?

Could we register the European Music Navigator vocabulary?

Is there a list of documentation types for software?

How do we describe conference proceedings with DC?

Four questions on search engines, tags, and databases.

How can I use DC to describe a collection of photographs?

What ever happened to DC.Creator.CorporateAddress?

Home - Implementation - Metadata in general

What is the difference between a thesaurus and a classification?

What is the difference between a thesaurus and a taxonomy?

How is metadata used in bibliographic networks?

Where can I take a course on DC?

Must we pay DCMI if we provide a drop-down menu for dc:subject?

"WHAT IS METADATA IN VIDEO?" by JOACHIN

Why do search engines have trouble with my XML tags?

Does Google index DC?

What does CODEN stand for?

What is the history of metadata?

Which search engines use DC in HTML headers?

Does DC have to go on every Web page?

Are there any enterprise metadata warehouse applications?

"Metadata framework implementation" - How do I analyse the structure of a resource?

Where can I find the education extensions for DC?

In "isVersionOf", why are the words run together?

Whatever became of the Warwick Framework?

Home - Implementation - Maintenance

Home - Implementation - Other issues

Is Audience the 16th element?

How can I use DC to search for photographs?

What is the relationship between the CORES Project and DCMI?

What is the difference between DC and SCORM?

How can I use DC for spatial metadata?

Do DCMI documents tell you how to generate tags on the fly?
Should I translate the tag "creator" into Vietnamese?
Where can I take classes on DC, XML, and RDF?
Where can I find a standard approach to versioning documents?
What is the relationship between DC and FRBR?

Home - Implementation - Storage

How can I store metadata separately and link?
How could DC be implemented in RDBMS?

Home - Terms

Could DC help us describe art-history slides?
Is Audience the 16th element?
What is the relationship between DCMI and the IEEE/LOM community?
Is there a difference between a sub-element and a refinement?
What is the semantics of Title?
What is the difference between a Term and an Element?
Can I add a field to an RSS feed?
What are sub-elements?

Home - Terms - Application Profiles

Does the creator of an AP decide what should be mandatory?

Home - Terms - Encoding Schemes

Disappearing angle brackets: <http://askdcmi.askvrd.org/index.asp?id=5239>
How do I register an encoding scheme?
I'm confused about the example in the DCSV recommendation.

Home - Terms - Encoding Schemes - Syntax Encoding Schemes

Very specific question about DCMI Point

Home - Terms - Encoding Schemes - Vocabulary Encoding Schemes

Will DCMI register additional vocabulary schemas?
Disappearing angle brackets: <http://askdcmi.askvrd.org/index.asp?id=5239>
How can I register a vocabulary?
Is there a standard markup language for controlled vocabularies?
Must we pay DCMI if we provide a drop-down menu for dc:subject?
Which of the DCMI types would I use for cataloging a Website?
I am looking for subject taxonomies for eGovernment.

Home - Terms - Encoding Schemes - Vocabulary Terms

Where do I put video track information?
What are sub-elements?

Home - Terms - Elements

Can I use dc:identifier for ISSNs?
Distinction creator/publisher.
Is Audience the 16th element?
Where do I put the name of the person submitting the material?
Four different questions about dc:relation.
Someone told me there are 16 elements.
Where do I put the location of the creator?
Where do I put the location of the publisher? (different person)
How does DC relate to RSS?
A follow-up email on the four questions about dc:relation.
What is the semantics of Title?
How do I use DC with SCORM and DMSO/HLA?
Are all elements repeatable?
Which elements are mandatory?
How can I add an element?
What equivalencies exist between DC, IEEE/LOM, and SCORM?
Can I repeat dc:identifier?

What is the difference between "term" and "element"?
Should I use "isPartOf" or "isReferencedBy"?
Is Dublin Core extensible?
Please give me examples of Contributor.
How can I say something is a Press Release?
Should I repeat dc:publisher and distinguish between the two types?
How can I implement name authority?
How do I describe Sponsors and Partners of a project in RDF?
How do I indicate the source of a classification code?

Home - Terms - Refinements

What is the difference between sub-elements and refinements?
Can I create my own refinements?
What are sub-elements? (someone else)
Are multi-element tags like "Date.Created.Digital" interoperable?
How can I extend Creator to put in birthdates?
How can I extend Creator to distinguish first name from family name?
How can I use XSLT to create multi-element DCSVs?
Can I put number of pages into Format?

Home - Syntaxes

Where can I find the xsd files that work together?
Which is better, HTML or XML?
Which is better, XML or HTML?
Which is better, XML or RDF?
How do I use DC for geographic information?

Home - Syntaxes - HTML

What is the semantics of Title?
Are keywords case-sensitive?
Should it be "creator" or "Creator"?

Home - Syntaxes - RDF

How do I add a field to an RSS feed?
What is the correct RDF syntax for "isPartOf"?
Which of these two syntaxes is correct?
Can the value of dc:subject be a URI representing a person?

Home - Syntaxes - Other

What are the intended cardinalities?
Disappearing angle brackets: <http://askdcmi.askvrd.org/index.asp?id=5239>
Can one specify a minimum length of 1?
Where can I find the xsd files that work together?
Can DC in XML have qualifiers?
Should we translate the tags into Marathi?

Home - Syntaxes - XML

Are the XML schemas "official" and stabile?
How can I dumb down Dc.creator.contact?

Date: Tue, 10 Feb 2004 10:55:04 +0100
From: Thomas Baker <thomas.baker@bi.fhg.de>
Subject: AskDCMI on the Bath agenda?

I see the questions building up on AskDCMI again and am feeling uncomfortable about the model here, so I'm thinking we should perhaps give this issue some time in Bath.

Some of what is making me uncomfortable:

- When questions come into my mailbox but not answers, I cannot know which ones have been answered without going to the Web, nor can I accumulate my own archive of answers, meaning I have to search the database on the Web to know whether a similar question has been answered.
- Not being able to get an overview of what has been written, I am uneasy with the notion of a growing set of overlapping answers to overlapping questions, and that some of these answers may in fact be controversial, or out-of-date, or at any rate need to be maintained.
- It is not clear to me whether the goal is to accumulate a body of best practice and use that corpus to refine and improve our collective sense of best practice over time.

If the goal is not to accumulate knowledge, then the AskDCMI work feels like a relentless servicing of user requests.

If the goal is to learn from the process, then it is not clear to me how we can capture that learning. For example, if the answers were being cited and summarized in a single, growing FAQ file that we could periodically download and keep on hand, then one could presumably answer a lot of the new questions simply by pointing to a specific section of the FAQ. This would also have the welcome side effect of improving the quality of <http://dublincore.org/resources/faq/>, which does indeed need to be revised.

- If the answers are not being captured or summarized in such a central document, it is not clear to me what longer-term responsibility is being implicitly assumed (and by whom) for reviewing and maintaining the many separate answers. In principle, does an answer have an expiration date?
- It is not clear to me how AskDCMI relates to DCMI's open mailing lists, where asking the same question might lead to a discussion instead of a straightforward (but possibly simplistic or misleading) answer.

I pose this concerns in a constructive spirit because I would very much like to see this service work. On the other hand, AskDCMI is not a service of the Usage Board, so I am uncertain how far this discussion should go. In Bath, we could perhaps consider the following:

- A printout (if such can be generated) of the entire corpus of answers and rough analysis of questions by type.
- A general discussion of current plans and future developments in light of the comments above.

Topic: Proposals for dc:rights-related terms
Modified: 2004-03-22 09:41, Monday
Maintainer: Tom Baker
Latest version: <http://dublincore.org/usage/meetings/2004/03/ISSUES/terms-rights/>
See also: <http://dublincore.org/usage/meetings/2004/03/ISSUES/>

Shepherd: Andrew Wilson

SUMMARY (Tom)

A proposal was submitted for two rights-related terms

<http://www.ukoln.ac.uk/metadata/dcmi/dc-rights/>

There has been considerable discussion on the list, which Andrew will summarize at the meeting.

One parallel development we should be aware of is an effort to create an Rights schema for use in OAI:

<http://www.openarchives.org/documents/OAIRightsWhitePaper.html>

This short white paper, which refers to dc:rights, will be included in the supplementary packet, though it may not be relevant enough to the approval of the current proposals to discuss in Bath.

Proposals for DC Rights-related Terms

Stuart Weibel
OCLC Office of Research

Andy Powell
UKOLN, University of Bath

Eric Miller
World Wide Web Consortium

February 11, 2004

Introduction and background Information

The DC Rights element was added to the Dublin Core following DC-3, in recognition of the importance of terms and conditions of use for discovered resources. To date, it has been little utilized, owing to the lack of standard practice concerning rights declarations on the Internet.

The recent emergence of the Creative Commons as a clearinghouse for rights declarations affords an opportunity to improve this situation, particularly for resources that have been developed with the intention of cost-free distribution, but whose creators wish to formally declare various rights.

Creative Commons has defined several licenses from which content rights holders may choose. Each of these licenses is unambiguously identified with a URI that is managed as unchanging and persistent by Creative Commons. Thus, this namespace comprises a controlled, enumerated vocabulary of license declarations, open for use by any party for whom their terms and conditions are judged useful. Providing a clear method for embedding of CC license information within the Dublin Core will reinforce the impact of both protocols. Both CC proponents and DC adopters will benefit by having a clear approach to formal rights declaration in a widely adopted metadata framework on the Internet. Further, the model for such declarations has been defined so that it is broadly useful for declaring licenses from other sources as well, providing a general-purpose mechanism for intellectual property declarations.

This proposal outlines functional requirements, discusses alternative representations, and proposes a standard of practice.

Statement of requirements

DCMI metadata currently supports the following functional requirements, through the use of the DC Rights property:

- provide a simple human-readable statement of who holds rights over a resource
- support simple (i.e. potentially ambiguous) searches of the form "find all resources where an entity that is named using a simple string is likely to be a rights holder"

By using appropriate conventions for the value string of dc:rights (e.g. "(c) Copyright University of Bath, 2002") it is possible to meet narrower functional requirements, such as "provide a simple human-readable statement of who holds copyright over a resource" and "support simple (i.e. potentially ambiguous) searches of the form 'find all resources where an entity that is named using a simple string is likely to be the copyright holder'". However, these narrower requirements can only be met using searches based on simple string comparisons (e.g. search for "'copyright" AND "University of Bath"'), which is not a very robust approach.

The two proposals for new DCMI properties below are intended to support the following additional functional requirements:

- Support unambiguous searches of the form "find all resources where an entity named using a simple string is a rights holder"
- Support unambiguous searches of the form "find all resources where an entity that is identified using a URI is a rights holder"
- Provide an unambiguous statement of the license under which the resource is made available, based on the URI associated with that license
- Support unambiguous searches of the form "find all resources which are made available under the terms of the license with the following URI"

Furthermore, there may be additional requirements related to specific kinds of rights (copyright, patent rights, database rights, etc.). For example:

- support unambiguous searches of the form "find all resources where an entity named using a simple string is the copyright holder"
- support unambiguous searches of the form "find all resources where an entity that is identified using a URI is the copyright holder"

These more specific requirements are not met by the two proposals below. However, they could be met through the proposal of narrower sub-properties of dcterms:rightsHolder, for example dcterms:copyrightHolder.

Proposed Element Refinements

There are two primary requirements for rights declaration addressed in this proposal:

1. identifying the license associated with a particular resource, and
2. identifying the person or organization holding the rights.

This proposal recommends the adoption of the following terms to meet these requirements:

license

rightsHolder

The specifics of each proposed term are elucidated in the Proposal Requirements Tables below.

Impact on the "dumb-down" principle

Anticipated values for the proposed elements remain useful when stripped of their qualifiers, however, as with all such "dumbed-down" metadata values, the results will not be interpretable with the same degree of confidence. This is particularly important in the treatment of rights metadata because of the potential legal implications. A "dumbed-down" rights statement may be incomplete, but should not mislead.

Implications for other license schemes

This proposal was motivated by the requirements for supporting declaration of Creative Commons licenses, but can be similarly applied to any set of licenses without future coordination with DCMI or changes to DCMI metadata terms. Any party desiring to specify and maintain licenses can take advantage of this infrastructure.

DCMI Decision Tree Supporting Information:

Clarity of semantics and expression

Terms proposed in this proposal are defined with a degree of specificity and constraint equal to, or greater than, other DCMI terms.

It is recommended that the value of *license* is denoted by a URI identifying an IPR license.

The *rightsHolder* term is defined in much the same manner as any of the agent elements of DC (creator, contributor, and publisher), with an additional constraint that the identified entity must be able to be associated with intellectual property rights (thereby ruling out instruments as valid values for this term).

Practicality

Use of Creative Commons licenses represents a formal opportunity for right holders to declare terms and conditions outside the framework of commercial Digital Rights Management (DRM) systems, and as such has the potential to have an important impact on the development of best practice in communities managing digital assets. In addition, the proposal is written such that licenses other than Creative Commons licenses can be declared without retrofitting these terms, and without requiring other organizations or initiatives to adopt namespaces from competitive initiatives.

It is expected that much commercially managed content will increasingly be packaged within DRM systems. The current proposal is based on the declaration of digital rights, rather than management, and is more suitable for organizations and individuals that want to make their content widely available, often without compensation, but without foregoing specified rights.

Specifying license URIs is straightforward and unambiguous, taking advantage of the basic Web infrastructure, and relying on the commitment of organizations to support such infrastructure over time.

Appropriate Placement within the DC Architecture

The proposed *license* term refines the Rights element, affording a degree of specificity and constraint that make it broadly useful for rights declaration applications. The proposed *rightsHolder* term is not a refinement of any existing DCMI terms. Declaring the new terms within the DCMI namespace will simplify their interpretation by metadata applications and provide sufficient generality to support any group that chooses to specify licenses. No coordination with DCMI would be necessary to expand the use of the terms by other organizations in the future, and DC will help to establish a consistent and useful deployment framework for the community at large.

An alternative to the proposed approach is to declare a Creative Commons encoding scheme and simply register it as such, leaving the semantics, structure, and syntax to the Creative Commons community. This would work, but is undesirable in that there would be little incentive for competing licensing schemes to use CC's encoding, possibly leading to divergence in the structure, encoding, and semantics of multiple rights declaration schemes.

Creative Commons is an organization that is focused on licenses, not on the structure and encoding of the metadata about those licenses. DCMI, in turn, has no expertise in licenses, but can facilitate rights declaration by promoting a consistent and flexible means for encoding declarations.

Existing implementations

Examples of organizations using CC licenses can be found at

<http://creativecommons.org/learn/collaborators>

Those participating include a variety of organizations that come from traditional DCMI constituent communities.

Decision Tree Table

1. While the specification of a Creative Commons encoding scheme would satisfy the immediate need for declaration of a Creative Commons license, such an approach suffers from two significant disadvantages outlined earlier: separation of organizational function: (a) Creative Commons is concerned with licenses, DCMI is concerned with maintaining metadata terms, and (b) such an approach will do nothing to promote consistent means for rights declaration in the community at large, and hence will not come into wide use by harvesters.
2. The use of an application profile for specification of rights declaration suffers from precisely the same problems as encoding schemes.
3. All valid values of the proposed *license* term will also be valid values of the existing DC Rights term - therefore this is proposed as an element refinement of DC Rights.
4. All valid values of the proposed *rightsHolder* term will not be valid values for any existing DCMI term - therefore this is proposed as a new element.

Proposal 1 - rightsHolder

Name

rightsHolder

Label

Rights Holder

Definition

A person or organization owning or managing rights over the resource.

Comment

Recommended best practice is to use the URI or name of the Rights Holder to indicate the entity.

Examples

Stuart Weibel

<http://w3.org/>

University of Bath

Type of term

DC term

Term qualified

none

Why needed

To support the identification of rights holders, either default copyright holders or a person or organization that is legally empowered to assign and transfer licenses to the relevant resource.

Working Group support

This proposal has been initiated within the DCMI Directorate in response to an identified opportunity for the improvement of intellectual property rights declaration for Internet accessible resources. The proposal has been developed in consultation among Stuart Weibel of the DCMI Directorate, Eric Miller of the W3C, technical advisor to the Creative Commons, and DCMI Advisory Board member, and Andy Powell, Chair of the DC-Architecture working group.

Proposed status

The term is proposed as Recommended.

Related DCMI terms

None

Related non-DCMI terms

None Identified

Impact on applications

Potentially improved consistency for digital rights declarations

About the proposers

Stuart Weibel OCLC Office of Research

Eric Miller W3C Semantic Web Activity Lead

Andy Powell UKOLN, DCMI Usage Board

Proposal 2 - license

Name

license

Label

License

Definition

A legal document giving official permission to do something with the resource.

Comment

Recommended best practice is to identify the license using a URI. Examples of such licenses can be found at: <http://creativecommons.org/licenses>

Examples

<http://creativecommons.org/licenses/by/1.0/>

Type of term

Element refinement

Term qualified

dc:rights

Why needed

To support the identification of formal licenses associated with resources.

Working Group support

This proposal has been initiated within the DCMI Directorate in response to an identified opportunity for the improvement of intellectual property rights declaration for Internet accessible resources. The proposal has been developed in consultation among Stuart Weibel of the DCMI

Directorate, Eric Miller of the W3C, technical advisor to the Creative Commons, and DCMI Advisory Board member, and Andy Powell, Chair of the DC-Architecture working group.

Proposed status

The term is proposed as Recommended.

Related DCMI terms

There are no existing or proposed qualifiers for the DC Rights element; the present proposal proposes the following term: license.

Related non-DCMI terms

None identified

Impact on applications

Potentially improved consistency for digital rights declarations

About the proposers

Stuart Weibel OCLC Office of Research

Eric Miller W3C Semantic Web Activity Lead

Andy Powell UKOLN, DCMI Usage Board

Topic: MARC Relator terms as sub-properties of dc:contributor
Modified: 2004-03-22 09:41, Monday
Maintainer: Tom Baker
Identifier: <http://dublincore.org/usage/meetings/2004/03/ISSUES/terms-relators/>
See also: <http://dublincore.org/usage/meetings/2004/03/ISSUES/>

Shepherd: Rebecca Guenther

SUMMARY (Tom)

This topic seems to have three threads:

- Ongoing discussion of what it really means when MARC Relator terms are declared to be semantically narrower than dc:contributor (see the rough-cut email excerpts below).
- Guidelines for using Agent Roles in Dublin Core -- a draft prepared by Diane and Rebecca and printed in the main packet:
<http://dublincore.org/usage/meetings/2004/03/Agent-Roles-Guidelines2.txt>.
- The mechanics of declaring machine-processably that all (or maybe just most!) Relator terms are subPropertyOf dc:contributor. The 13-page RDF schema, <http://www.loc.gov/marc/dc/marcrelcodes.rdf>, will be put into the supplementary packet for reference, though the nitty-gritty of the RDF encoding should be largely out of scope for our discussion in Bath.

Date: Wed, 24 Sep 2003 13:25:23 -0400
From: "Rebecca S. Guenther" <rgue@LOC.GOV>
Subject: MARC relators in RDF
To: DC-USAGE@JISCMAIL.AC.UK

I have put up the MARC relator code list in RDF at:
<http://www.loc.gov/marc/dc/marcrelcodes.rdf>

I read over the comments about equivalent terms and decided to do the following:

1. All relator terms have the following:
<rdfs:subPropertyOf rdf:resource="<http://purl.org/dc/terms/contributor>" />

Meaning that it is equivalent to dc:contributor.

[** Note: Andy suggested that Rebecca meant to say
"subPropertyOf dc:contributor" here. **]

2. marc:relators/cre (i.e. marc:creator) has the following statement:
<owl:equivalentProperty
rdf:resource="<http://purl.org/dc/elements/1.1/creator>" />

This is what Roland suggested. I felt that this was better than sameAs, since I understood this to be a weaker equivalence. Because marc:creator and dc:creator have different semantics, I thought this was safer.

3. I made no statement about equivalence between marc:publisher and dc:publisher, because the relator terms only are used when the entity functions as a publisher that makes contributions. dc:publisher, as has been pointed out, makes the resource available. This term indicates contributions to the resource in the context of also being a publisher. So marc:publisher just has the statement as above concerning its equivalence to dc:contributor.

We can discuss this further at the UB meeting in Seattle and any other issues about implementing these terms as refinements of dc:contributor.

FYI: the above URL will be changed at some point in the future when we set up a namespace for the relators.

Date: Mon, 7 Jul 2003 11:11:03 -0400
From: "Diane I. Hillmann" <dih1@CORNELL.EDU>
Subject: Re: Comments on Encoding Scheme registration
To: DC-USAGE@JISCMAIL.AC.UK

Yes, I think the important thing to remember is that we decided to include all roles on the LC relator list so that implementers could make the choice of what to use, rather than US having to anticipate their needs. I think when we get to the point of expressing our decision and how people ought to use these terms, the idea that the choices are theirs needs to be made.

Date: Mon, 7 Jul 2003 17:52:44 +0200
From: Roland Schwaenzl <Roland.Schwaenzl@MATHEMATIK.UNI-OSNABRUECK.DE>
Subject: Re: Comments on Encoding Scheme registration
To: DC-USAGE@JISCMAIL.AC.UK

The issue is NOT, whether they CAN be contributors in some cases, but whether they ARE contributors in all possible cases.

marc:publisher as you put it in NOT redundant to a dc:publisher. A dc:publisher is allowed simply to make a resource available as is and is not a priori supposed to

contribute to it's content.

> They will add other terms
> from the MARC relator list where necessary to bring out a particular role
> in relation to the resource. If they're using MARC they'll use
> marc:publisher (in the way it's used in MARC, which is as a value of a
> relator element associated with the name). My understanding is that we are
> adding these subProperty statements for machine readability, but I don't
> imagine people will get confused.

Information systems will DRAW AUTOMATIC conclusions from
subProperty relations. It is important to get subProperty
relations right.

Date: Mon, 16 Feb 2004 23:50:36 +0000
From: Andy Powell <a.powell@UKOLN.AC.UK>
Subject: Re: Guidelines for the use of Roles
To: DC-USAGE@JISCMAIL.AC.UK

On Mon, 16 Feb 2004, Diane Hillmann wrote:
> Rebecca and I have a draft to present for comment. It lacks examples,
> which our notes suggest Andy was willing to provide. Because we've gotten
> down to the wire (apologies), we decided to distribute the draft and see if
> we've covered the necessary ground, hoping that Andy will flog around some
> examples to be added later.

There remain issues with the use of MARC relator codes - and these have
recently surfaced on the DC Collection Description WG mailing list.

The CD WG need a property to indicate the owner of the resource (in this
case a collection). The use of marc:own was discussed. marc:own is
defined to be a refinement of dc:contributor. However, in this case, the
owner will not necessarily have made a contribution to the collection.
They may simply have bought the collection for example. Therefore, the WG
will have to find an alternative to marc:own.

So, two things...

1) The definition of marc:own at

<http://www.loc.gov/marc/dc/marcrelcodes.rdf>

needs to make it crystal clear that in this case, 'owner' is defined to be
an owner that has made contributions to the content of the resource.
I.e., the definition of marc:own should be changed to something like

The person or organization that currently owns and has made a

contribution to the content of the item or collection.

2) In many cases WGs and other groups will have to find alternatives to the MARC relator codes because the restrictive definitions (as having made a contribution) are not intuitive and are too narrow for many uses.

Date: Tue, 17 Feb 2004 11:37:39 -0000
From: Pete Johnston <p.johnston@UKOLN.AC.UK>
Subject: Re: Guidelines for the use of Roles

I was going to say I fully agree with Andy's comments below, especially the first point about the need to make it explicit in the textual definitions of these properties that they imply that the object of the property is an entity that contributes to the content of the resource.

But looking at the list of properties more closely, it seems to me that there are cases where saying that they are a sub-property of dc:contributor introduces an element of contradiction:

e.g. <http://www.loc.gov/marc/relators/dub>

Label = "Dubious author"

Comment = "A person or corporate body to which authorship has been dubiously or incorrectly ascribed."

So in making a statement using this sproperty, on the one hand you assert that authorship has been dubiously or incorrectly ascribed, but at the same time you say that they are "An entity responsible for making contributions to the content of the resource" (!)

Yes, I can just about see that you can assert that their claim to authorship is dubious, and also assert that they still made some other contribution to the content, without contradicting yourself.

But in practice this seems to limit the legitimate use of the property to the extent that it is almost useless in any practical sense.

I'm probably re-opening a can of worms, but I'll do it anyway: why is it necessary to declare all of these things as sub-properties of dc:contributor? It seems to me that many of them make perfectly useful properties without asserting any relationship to dc:contributor (and indeed asserting that relationship only serves to limit their usefulness).

Date: Tue, 17 Feb 2004 17:30:30 -0500
From: "Rebecca S. Guenther" <rgue@LOC.GOV>

I guess it's because there was the argument that if we use these roles with a DC element, that DC element being contributor, it has to refine the semantics of the element. So I was told we had to put that statement in for each of the role terms on our list (which didn't originally have anything of the sort). And I followed instructions, although we wouldn't be having these arguments about the use of the terms if they didn't make these assertions. So we have a list of stable, standardized terms for roles, but there seems to be this argument that we can't use them if they don't exactly fit in with the semantics of contributor. Maybe the way out is to consider the word "contributions" as broad and inclusive of indirect types of contributions. Maybe the problem is the choice of words we used for elements in the original DCMES. (I'm sure you'll all love that statement.)

Date: Tue, 17 Feb 2004 17:15:59 -0500
From: "Rebecca S. Guenther" <rgue@LOC.GOV>
Subject: Re: Guidelines for the use of Roles

On Mon, 16 Feb 2004, Andy Powell wrote:

> On Mon, 16 Feb 2004, Diane Hillmann wrote:
>
> > Rebecca and I have a draft to present for comment. It lacks examples,
> > which our notes suggest Andy was willing to provide. Because we've gotten
> > down to the wire (apologies), we decided to distribute the draft and see if
> > we've covered the necessary ground, hoping that Andy will flog around some
> > examples to be added later.
>
> There remain issues with the use of MARC relator codes - and these have
> recently surfaced on the DC Collection Description WG mailing list.
>
> The CD WG need a property to indicate the owner of the resource (in this
> case a collection). The use of marc:own was discussed. marc:own is
> defined to be a refinement of dc:contributor. However, in this case, the
> owner will not necessarily have made a contribution to the collection.
> They may simply have bought the collection for example. Therefore, the WG
> will have to find an alternative to marc:own.

marc:own says that it's a refinement of dc:contributor because we were told this had to be done to be able to use these terms.

All of these terms were initially included in the relators list because an institution thought they played a large enough role in connection with a resource to warrant having access to it by that entity's name. Thus, we

concluded that this is a form of contribution. In the case of owner, the relationship to the resource is that the named entity is an owner and this role is important to the given resource. So it is a very broad definition of "contributor". We don't actually call them contributors as such in MARC, which was what this list was defined for, but consider them making a contribution to the resource in an indirect way. So for any situation where "owner" is the role that an entity played in the resource, it would be the type of resource for which ownership is important (probably rare material that might not be identified any other way).

> So, two things...

>

> 1) The definition of marc:own at

>

> <http://www.loc.gov/marc/dc/marcrelcodes.rdf>

>

> needs to make it crystal clear that in this case, 'owner' is defined to be
> an owner that has made contributions to the content of the resource.

> I.e., the definition of marc:own should be changed to something like

>

> The person or organization that currently owns and has made a
> contribution to the content of the item or collection.

>

> 2) In many cases WGs and other groups will have to find alternatives to
> the MARC relator codes because the restrictive definitions (as having made
> a contribution) are not intuitive and are too narrow for many uses.

I'm not sure I understand this comment. The MARC definitions are not currently so narrow (as I described above). Adding something like what you suggest to the definition will make them narrower than they were intended. That could affect existing usage and invalidate existing records. So I don't think we will want to narrow these definitions in this way.

Date: Thu, 19 Feb 2004 11:49:20 +0000
From: Andy Powell <a.powell@UKOLN.AC.UK>
Subject: Re: Guidelines for the use of Roles
To: DC-USAGE@JISCMAIL.AC.UK

On Wed, 18 Feb 2004, Pete Johnston wrote:

> Right. So that narrowness is not present in the initial MARC relator
> definitions. I wasn't clear whether it was or not.

Good. I'm glad that we seem to have clarified this at last.

> But making the statement (as the declaration of the RDF properties do):

>
> marcrel:own rdfs:subPropertyOf dc:contributor .
>
> does effectively generate this narrowing, I think.

Yes, that's right. Declaring some of these relators as being sub-properties of dc:contributor does narrow their intended semantics.

> Well, strictly speaking, what it says is, every time I say:
>
> _x marcrel:own _y . (Resource x has-an-owner Entity y)
>
> I also imply:
>
> _x dc:contributor _y . (Resource x has-an-entity-that-made-a
> contribution-to-the content Entity y)
>
> Which I don't think you really want to say.

Agreed.

> I take your point that you can argue that the entities related to a
> resource by a MARC relator property do "make a contribution" to the
> resource in the very general sense you describe above. But (it seems to
> me) they do not necessarily do so in the specific sense of
> dc:contributor.

Agreed.

> Now we might well argue that's a problem with the definition of
> dc:contributor (as I think you suggest in your subsequent message). But
> working on the basis of the current definition of dc:contributor, it
> seems to me that stating the subproperty relation creates an undesirable
> result in many cases.

Agreed.

> So it seems to me the problem is with the constraint that:
>
> > marcrel:own says that it's a refinement of dc:contributor
> > because we were told this had to be done to be able to use
> > these terms.

Well, somewhere along the line, this whole process seems to have got very confused... which is all water under the bridge, so probably best forgotten?

The important thing to recognise is that the MARC properties can be used irrespective of whether or not they refine DC properties. And indeed, they become much more useful if they are not tied to DC properties in an

inappropriate way.

> It seems to me that it makes perfect sense to describe some of these
> relator terms as refinements of dc:contributor, but for others it does
> not. And that decision has to be taken on a case-by-case basis not on a
> one-rule-for-all. But even for those relator terms that are not
> refinements of dc:contributor, it's still useful for LoC to declare them
> as RDF properties so that applications can use them: they just have
> nothing to do with dc:contributor. That's OK, isn't it?

Yes. So... I think the best course of action is to go thru the current
LoC RDF schema declaration for these terms and do the following:

- remove rdfs:subPropertyOf assertions where it is not appropriate, e.g.
for marc:own
- add explicit owl:samePropertyAs assertions w.r.t. dc:creator,
dc:publisher and dc:contributor (there are one or two of these but I
suspect there could be more, e.g. marc:aut == dc:creator)

Then we'll have a much more useful set of new properties that don't make
wrong or confusing assertions about their relationship to existing DC
properties... and which then can be used by other initiatives like the DC
Collection Description WG.

Is there any reason not to change the RDFS in this way? I am happy to
have a stab at making the changes to the LoC RDFS, but probably better for
someone at LoC to do it.

Date: Thu, 19 Feb 2004 09:45:30 -0500
From: "Rebecca S. Guenther" <rgue@LOC.GOV>
Subject: Re: Guidelines for the use of Roles

So, to clarify, if you have a MARC relator term that is NOT a refinement
of Contributor, then you just use it without any relation to a DC term? We
don't have this problem with semantics in either MARC or MODS because the
element we use it with is called "name", which is much broader than DC
creator or contributor. In other words, DC has no element that is a name
associated with a resource, but those elements stipulate specific roles
related to the resource that are inherent in their semantics. I guess this
is really the problem. I haven't been following the collection description
work, but if there were a resource description and you wanted to include
the owner, you would use DC elements for everything except that and use
marc:own (or whatever we decide) for the owner's name?

I think what Andy suggests is appropriate. I could work with Andy to do
this. Andy, let's talk about how best to get this accomplished.

Date: Thu, 19 Feb 2004 15:11:33 +0100
From: Roland Schwaenzl <Roland.Schwaenzl@MATHEMATIK.UNI-OSNABRUECK.DE>
Subject: Re: Guidelines for the use of Roles

> Yes, that's right. Declaring some of these relators as being
> sub-properties of dc:contributor does narrow their intended semantics.

If the intended semantics is as aluded to above, the
declaration is counter productive and will yield unexpected
results in retrieval (narrow minded people would say "wrong
results").

I'm kind of surprised to read that the MARC relators have a
broader semantics. When we discussed the issue last time
concerns i had were dismissed on the basis, that narrower
semantics is understood, just not explicitly stated till now.

> > Well, strictly speaking, what it says is, every time I say:
> >
> > _x marcrel:own _y . (Resource x has-an-owner Entity y)
> >
> > I also imply:
> >
> > _x dc:contributor _y . (Resource x has-an-entity-that-made-a
> > contribution-to-the content Entity y)
> >
> > Which I don't think you really want to say.

The information given previously was exactly opposite.

> > Now we might well argue that's a problem with the definition of
> > dc:contributor (as I think you suggest in your subsequent message).

When you want to have a different semantics go ahead, provide a
definition for a new dc term and advertise it.

> Well, somewhere along the line, this whole process seems to have got very
> confused... which is all water under the bridge, so probably best
> forgotten?

Back to A ?

> The important thing to recognise is that the MARC properties can be used
> irrespective of whether or not they refine DC properties. And indeed,
> they become much more useful if they are not tied to DC properties in an
> inappropriate way.

We have to take care of the dc vocabulary. We can say,
we find the asserted relation inappropriate and suggest to delete it.

> > But even for those relator terms that are not
> > refinements of dc:contributor, it's still useful for LoC to declare them
> > as RDF properties so that applications can use them: they just have
> > nothing to do with dc:contributor.

Certainly it is useful to have well coined and structured vocabularies for use in RDF.

It's our bussiness to further promote DC vocabulary in this area.

> Yes. So... I think the best course of action is to go thru the current
> LoC RDF schema declaration for these terms and do the following:
>
> - remove rdfs:subPropertyOf assertions where it is not appropriate, e.g.
> for marc:own
> - add explicit owl:samePropertyAs assertions w.r.t. dc:creator,
> dc:publisher and dc:contributor (there are one or two of these but I
> suspect there could be more, e.g. marc:aut == dc:creator)

Not to use owl "sameAs" we decided previously.

Date: Fri, 20 Feb 2004 10:21:13 -0000
From: Pete Johnston <p.johnston@UKOLN.AC.UK>
Subject: Re: Guidelines for the use of Roles
To: DC-USAGE@JISCMAIL.AC.UK

The relevant paragraph is here

<http://www.w3.org/TR/2004/REC-owl-ref-20040210/#equivalentProperty-def>

NOTE: Property equivalence is not the same as property equality. Equivalent properties have the same "values" (i.e., the same property extension), but may have different intensional meaning (i.e., denote different concepts). Property equality should be expressed with the owl:sameAs construct. As this requires that properties are treated as individuals, such axioms are only allowed in OWL Full.

But I'm not at all sure I understand the distinction being made.

Roland, could you maybe explain the distinction with some examples of what it would mean if we used owl:equivalentProperty and what it would mean if we used owl:sameAs please?

Date: Mon, 16 Feb 2004 23:36:31 +0000
From: Andy Powell <a.powell@UKOLN.AC.UK>

Subject: Re: Guidelines for the use of Roles

To: DC-USAGE@JISCMAIL.AC.UK

On Mon, 16 Feb 2004, Diane Hillmann wrote:

> Rebecca and I have a draft to present for comment. It lacks examples,
> which our notes suggest Andy was willing to provide. Because we've gotten
> down to the wire (apologies), we decided to distribute the draft and see if
> we've covered the necessary ground, hoping that Andy will flog around some
> examples to be added later.

XHTML

<link rel="schema.DC" href="<http://purl.org/dc/elements/1.1/>" />
<link rel="schema.MARC" href="<http://www.loc.gov/marc/relators/>" />

<meta name="DC.title" content="Reichstag" />
<meta name="MARC.arc" content="Sir Norman Foster" />

XML

<?xml version="1.0"?>

<metadata
 xmlns:dc="<http://purl.org/dc/elements/1.1/>"
 xmlns:marc="<http://www.loc.gov/marc/relators/>">
 <dc:title>Reichstag</dc:title>
 <marc:arc>Sir Norman Foster</marc:arc>
</metadata>

RDF/XML

<?xml version="1.0"?>

<rdf:RDF
 xmlns:rdf="<http://www.w3.org/1999/02/22-rdf-syntax-ns#>"
 xmlns:dc="<http://purl.org/dc/elements/1.1/>"
 xmlns:marc="<http://www.loc.gov/marc/relators/>">
 <rdf:Description rdf:about="">
 <dc:title>Reichstag</dc:title>
 <marc:arc>Sir Norman Foster</marc:arc>
 </rdf:Description>
</rdf:RDF>

Guidelines for using Agent Roles in Dublin Core (Draft)

1/23/04, dih
2/12/04, rsg
2/16/04, dih
2/23/04, tb (converted to plain text only)

Function of roles and history of approval by DCMI

The need to express a role for the "Agent" elements (Creator, Contributor, and, to a lesser extent, Publisher) in the Dublin Core element Set has been expressed for many years and there have been a number of ideas for how to handle this. A role is a term that further refines the contribution of the agent to the resource described; an example is "illustrator" might be a role associated with the element Contributor when that person provided, for example, illustrations to the resource rather than being entirely responsible for all aspects of the intellectual content.

The DCMI Usage Board has discussed the issue several times and agreed that the role values are properly element refinements. At its meeting in Florence in Oct. 2002, the Board generally agreed that deprecating Creator and Publisher in favor of Contributor should be considered, since the role values Creator and Publisher could be used to refine Contributor if needed. Because of negative response to this sort of change in the Dublin Core element set, the DCMI Usage Board decided to recommend role refinements only to Contributor, but to leave Creator, Contributor and Publisher as separate elements.

Because a standardized, widely adopted list of roles already existed in the MARC Code List for Relators, it was recommended early in these discussions that DCMI not develop its own. In early 2000 a subset of the MARC relators list was circulated for approval to include 10 generally applicable roles out of the approximately 150 MARC relator terms. Because of the need to consider other aspects of the "Agent" issue, at that time the proposal was deferred. Discussion initially in the DC-Libraries Working Group (which prepared an application profile for use in libraries that included the relator terms) and later in the DCMI Usage Board revealed that consensus was that users not be constrained by a small list of elements and that the entire list of relator terms should be available given the difficulty of anticipating needs in various domains.

The Library of Congress has prepared an RDF expression of the MARC relator list, to be used in conjunction with the Dublin Core element Contributor. This is available at: <http://www.loc.gov/marc/dc/marcrelcodes.rdf> (note: this is not yet a persistent URI but Rebecca will provide one!).

The MARC Relator list, what it is and how it's structured

The MARC Code List for Relators was developed for use in MARC 21 bibliographic records to express the relationship between a name and a work. The list includes both role terms and three-character codes that represent those terms. The terms were only included on the list if the name and its associated role were considered important enough to include on a bibliographic record as a contributor. Thus, all terms

represent possible contributions to a resource. The Library of Congress is the maintenance agency for this list and regularly adds new ones when the need is expressed and documented.

The MARC Relator list includes three-character alphabetic codes to be used to identify roles. These are to be considered synonyms for the term they represent. In addition the list provides definitions for use of the term/code. In the RDF representation, the codes are tokens to be used for the term and are part of the URI. In some cases unused terms refer to used terms; these are included in the RDF representation as a note (dc:description). All terms are declared as refinements of dc:contributor.

Using Roles with Contributor

In order to minimize the possibility of confusion, the Usage Board has authorized the use of roles only with the element Contributor. Because Creator is in some sense a role elevated to a position at the level of element, the Board's position is that it makes no sense to provide yet another level of roles beneath that particular element.

Because Publisher and Creator each appears on the list of MARC Relator terms, and the entire list is available to be used as roles, it is acceptable to use the role of Publisher or Creator instead of the element within an implementation. If marc:creator is used instead of dc:creator, the two terms should probably not be used together in the same instance.

Because roles are to be used only with the Contributor element, appropriate "Dumb Down" of all agent refinements expressed as roles will be to Contributor. Given this, implementations may choose (preferably within the context of an application profile), to specify explicitly whether the MARC relator terms of publisher or creator may be used, based on the fact that the distinction could be retained in Simple Dublin Core if the Element level term is retained for those particular roles.

Using Roles in XML and other Schemas

Because the maintenance of the MARC Relator list will remain with the Library of Congress, the namespace of the roles will be established by LC and will not be a DCMI namespace. Thus, schemas will need to include the MARC relator namespace in order to properly express role terms. See the document Guidelines for Implementing Dublin Core in XML <<http://dublincore.org/documents/dc-xml-guidelines/>> for specific information on using non-DCMI namespaces.

Terms not on the MARC Relators list

The MARC Relator list has been developed over many years to meet a wide variety of needs. New terms are added on the basis of need, and LC has expressed willingness to continue to expand the list upon request. Implementers also have the option to create and expose alternative vocabularies for the expression of other kinds of roles not reflected in the MARC Relator list.

Managing the Use of Role in an Implementation

The MARC Relator list is large, including approximately 150

separate terms for various roles. Some of the roles on the list were created for specific domains, and would be of little use in other communities. It might therefore be useful for implementations to declare a subset of the role vocabulary as relevant to their specific goals, preferably by way of a formal application profile.

```
<?xml version='1.0' ?>

<rdf:RDF xmlns:marcrel="http://www.loc.gov/marc.relators/"
  xmlns:dc="http://purl.org/dc/elements/1.1/"
  xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
  xmlns:owl="http://www.w3.org/2002/7/owl#"
  xmlns:dcterms="http://purl.org/dc/terms/"
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#">
  <rdf:Description rdf:about="http://www.loc.gov/marc.relators/">
    <dc:title xml:lang="en-US">MARC Relator Terms</dc:title>
    <dc:publisher xml:lang="en-US">Library of Congress</dc:publisher>
    <dc:description xml:lang="en-US">A list of relator terms and their associated
codes. The purpose of this list is to indicate the relationship between the resource
being described and a named person or corporate body.</dc:description>
    <dc:language xml:lang="en-US">English</dc:language>
    <dcterms:issued>2002-07-02</dcterms:issued>
    <dcterms:modified>2002-05-22</dcterms:modified>
    <dc:source rdf:resource="http://www.loc.gov/marc.relators/" />
  </rdf:Description>

  <rdf:Property rdf:about="http://www.loc.gov/marc.relators/act">
    <rdfs:label xml:lang="en-US">Actor</rdfs:label>
    <rdfs:comment xml:lang="en-US">A person who principally exhibits acting skills in
a musical or dramatic presentation or entertainment.</rdfs:comment>
    <dc:description xml:lang="en-US">Typically, the name of the Actor should be used
to indicate the person.</dc:description>
    <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
    <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc.relators/" />
    <dcterms:issued>2002-11-13</dcterms:issued>
  </rdf:Property>

  <rdf:Property rdf:about="http://www.loc.gov/marc.relators/adp">
    <rdfs:label xml:lang="en-US">Adapter</rdfs:label>
    <rdfs:comment xml:lang="en-US">A person who 1) reworks a musical composition,
usually for a different medium, or 2) rewrites novels or stories for motion pictures
or other audiovisual medium.</rdfs:comment>
    <dc:description xml:lang="en-US">Typically, the name of the Adapter should be
used to indicate the person.</dc:description>
    <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
    <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc.relators/" />
    <dcterms:issued>2002-11-13</dcterms:issued>
  </rdf:Property>

  <rdf:Property rdf:about="http://www.loc.gov/marc.relators/ann">
    <rdfs:label xml:lang="en-US">Annotator</rdfs:label>
    <rdfs:comment xml:lang="en-US">A person who writes manuscript annotations on a
printed item.</rdfs:comment>
    <dc:description xml:lang="en-US">Typically, the name of the Annotator should be
used to indicate the person.</dc:description>
    <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
    <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc.relators/" />
    <dcterms:issued>2002-11-13</dcterms:issued>
  </rdf:Property>
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<rdf:Property rdf:about="http://www.loc.gov/marc/relators/app">
  <rdfs:label xml:lang="en-US">Applicant</rdfs:label>
  <dc:description xml:lang="en-US">Typically, the name of the Applicant should be
used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/arc">
  <rdfs:label xml:lang="en-US">Architect</rdfs:label>
  <dc:description xml:lang="en-US">Typically, the name of the Architect should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor" />
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/arr">
  <rdfs:label xml:lang="en-US">Arranger</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person who transcribes a musical composition,
usually for a different medium from that of the original; in an arrangement the
musical substance remains essentially unchanged.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Arranger should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor" />
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/art">
  <rdfs:label xml:lang="en-US">Artist</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person (e.g., a painter) who conceives, and
perhaps also implements, an original graphic design or work of art, if specific codes
(e.g., [egr], [etr]) are not desired. For book illustrators, prefer Illustrator
[ill].</rdfs:comment>
  <dc:description xml:lang="en-US">Used for Graphic technician</dc:description>
  <dc:description xml:lang="en-US">Typically, the name of the Artist should be used
to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor" />
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/asg">
  <rdfs:label xml:lang="en-US">Assignee</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person or organization to whom a license for
printing or publishing has been transferred.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Assignee should be
used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
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<rdf:Property rdf:about="http://www.loc.gov/marc.relators/asn">
  <rdfs:label xml:lang="en-US">Associated name</rdfs:label>
  <rdfs:comment xml:lang="en-US">A general relator for a name associated with or
found in an item or collection, or which cannot be determined to be that of a Former
owner [fmo] or other designated relator indicative of provenance.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Associated name
should be used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc.relators/att">
  <rdfs:label xml:lang="en-US">Attributed name</rdfs:label>
  <rdfs:comment xml:lang="en-US">Relates an author, artist, etc. to a work for
which there is or once was substantial authority for designating that person as
author, creator, etc. of the work.</rdfs:comment>
  <dc:description xml:lang="en-US">Used for Supposed name</dc:description>
  <dc:description xml:lang="en-US">Typically, the name of the Attributed name
should be used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc.relators/auc">
  <rdfs:label xml:lang="en-US">Auctioneer</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person or corporate body in charge of the
estimation and public auctioning of goods, particularly books, artistic works,
etc.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Auctioneer should be
used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc.relators/aut">
  <rdfs:label xml:lang="en-US">Author</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person or corporate body chiefly responsible for
the intellectual or artistic content of a work, usually printed text. This term may
also be used when more than one person or body bears such
responsibility.</rdfs:comment>
  <dc:description xml:lang="en-US">Used for Joint author</dc:description>
  <dc:description xml:lang="en-US">Typically, the name of the Author should be used
to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor" />
  <owl:equivalentProperty rdf:resource="http://purl.org/dc/elements/1.1/creator" />
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc.relators/agt">
  <rdfs:label xml:lang="en-US">Author in quotations or text extracts</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person whose work is largely quoted or extracted
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in a works to which he or she did not contribute directly. Such quotations are found particularly in exhibition catalogs, collections of photographs, etc.</rdfs:comment>
<dc:description xml:lang="en-US">Typically, the name of the Author in quotations or text extracts should be used to indicate the person.</dc:description>
<rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
<dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/aft">
<rdfs:label xml:lang="en-US">Author of afterword, colophon, etc.</rdfs:label>
<rdfs:comment xml:lang="en-US">A person or corporate body responsible for an afterword, postface, colophon, etc. but who is not the chief author of a work.</rdfs:comment>
<dc:description xml:lang="en-US">Typically, the name of the Author of afterword, colophon, etc. should be used to indicate the person.</dc:description>
<rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
<dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/aud">
<rdfs:label xml:lang="en-US">Author of dialog</rdfs:label>
<rdfs:comment xml:lang="en-US">A person or corporate body responsible for the dialog or spoken commentary for a screenplay or sound recording.</rdfs:comment>
<dc:description xml:lang="en-US">Typically, the name of the Author of dialog should be used to indicate the person.</dc:description>
<rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
<dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/aui">
<rdfs:label xml:lang="en-US">Author of introduction, etc.</rdfs:label>
<rdfs:comment xml:lang="en-US">A person or corporate body responsible for an introduction, preface, foreword, or other critical introductory matter, but who is not the chief author.</rdfs:comment>
<dc:description xml:lang="en-US">Typically, the name of the Author of introduction, etc. should be used to indicate the person.</dc:description>
<rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
<dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/aus">
<rdfs:label xml:lang="en-US">Author of screenplay, etc.</rdfs:label>
<rdfs:comment xml:lang="en-US">A person or corporate body responsible for a motion picture screenplay, dialog, spoken commentary, etc.</rdfs:comment>
<dc:description xml:lang="en-US">Typically, the name of the Author of screenplay, etc. should be used to indicate the person.</dc:description>
<rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
<dcterms:issued>2002-11-13</dcterms:issued>

</rdf:Property>

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<rdf:Property rdf:about="http://www.loc.gov/marc/relators/ant">
  <rdfs:label xml:lang="en-US">Bibliographic antecedent</rdfs:label>
  <rdfs:comment xml:lang="en-US">The author responsible for a work upon which the
work represented by the catalog record is based. This may be appropriate for
adaptations, sequels, continuations, indexes, etc.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Bibliographic
antecedent should be used to indicate the person.</dc:description>
  <!-- AP Not sure about this one
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  -->
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
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<rdf:Property rdf:about="http://www.loc.gov/marc/relators/bnd">
  <rdfs:label xml:lang="en-US">Binder</rdfs:label>
  <dc:description xml:lang="en-US">Typically, the name of the Binder should be used
to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
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<rdf:Property rdf:about="http://www.loc.gov/marc/relators/bdd">
  <rdfs:label xml:lang="en-US">Binding designer</rdfs:label>
  <dc:description xml:lang="en-US">Used for Designer of binding</dc:description>
  <dc:description xml:lang="en-US">Typically, the name of the Binding designer
should be used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
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<rdf:Property rdf:about="http://www.loc.gov/marc/relators/bkd">
  <rdfs:label xml:lang="en-US">Book designer</rdfs:label>
  <rdfs:comment xml:lang="en-US">The person or firm responsible for the entire
graphic design of a book, including arrangement of type and illustration, choice of
materials, and process used.</rdfs:comment>
  <dc:description xml:lang="en-US">Used for Designer of book</dc:description>
  <dc:description xml:lang="en-US">Typically, the name of the Book designer should
be used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
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<rdf:Property rdf:about="http://www.loc.gov/marc/relators/bkp">
  <rdfs:label xml:lang="en-US">Book producer</rdfs:label>
  <rdfs:comment xml:lang="en-US">The person or firm responsible for the production
of books and other print media, if specific codes (e.g., [bkd], [egr], [tyd], [prt])
are not desired.</rdfs:comment>
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<dc:description xml:lang="en-US">Used for Producer of book</dc:description>
<dc:description xml:lang="en-US">Typically, the name of the Book producer should
be used to indicate the person.</dc:description>
<rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
<dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/bjd">
<rdfs:label xml:lang="en-US">Bookjacket designer</rdfs:label>
<dc:description xml:lang="en-US">Used for Designer of bookjacket</dc:description>
<dc:description xml:lang="en-US">Typically, the name of the Bookjacket designer
should be used to indicate the person.</dc:description>
<rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
<dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/bpd">
<rdfs:label xml:lang="en-US">Bookplate designer</rdfs:label>
<dc:description xml:lang="en-US">Used for Designer of bookplate</dc:description>
<dc:description xml:lang="en-US">Typically, the name of the Bookplate designer
should be used to indicate the person.</dc:description>
<rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
<dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/bsl">
<rdfs:label xml:lang="en-US">Bookseller</rdfs:label>
<dc:description xml:lang="en-US">Typically, the name of the Bookseller should be
used to indicate the person.</dc:description>
<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
<dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/cll">
<rdfs:label xml:lang="en-US">Calligrapher</rdfs:label>
<dc:description xml:lang="en-US">Typically, the name of the Calligrapher should
be used to indicate the person.</dc:description>
<rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
<dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/ctg">
<rdfs:label xml:lang="en-US">Cartographer</rdfs:label>
<dc:description xml:lang="en-US">Typically, the name of the Cartographer should
be used to indicate the person.</dc:description>
<rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
<dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
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<rdf:Property rdf:about="http://www.loc.gov/marc/relators/cns">
  <rdfs:label xml:lang="en-US">Censor</rdfs:label>
  <rdfs:comment xml:lang="en-US">A censor, bowdlerizer, expurgator, etc., official
or private.</rdfs:comment>
  <dc:description xml:lang="en-US">Used for Bowdlerizer</dc:description>
  <dc:description xml:lang="en-US">Used for Expurgator</dc:description>
  <dc:description xml:lang="en-US">Typically, the name of the Censor should be used
to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/chr">
  <rdfs:label xml:lang="en-US">Choreographer</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person who composes or arranges dances or other
movements (e.g., "master of swords") for a musical or dramatic presentation or
entertainment.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Choreographer should
be used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/cli">
  <rdfs:label xml:lang="en-US">Client</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person or organization for whom another person
or organization is acting.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Client should be used
to indicate the person.</dc:description>
  <!-- AP Not sure about this one.
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  -->
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/clb">
  <rdfs:label xml:lang="en-US">Collaborator</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person or corporate body that takes a limited
part in the elaboration of a work of another person or corporate body that brings
complements (e.g., appendices, notes) to the work.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Collaborator should
be used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/col">
  <rdfs:label xml:lang="en-US">Collector</rdfs:label>
```

```
<rdfs:comment xml:lang="en-US">A person who has brought together material from various sources, which has been arranged, described, and cataloged as a collection. The collector is neither the creator of the material nor the person to whom manuscripts in the collection may have been addressed.</rdfs:comment>
```

```
<dc:description xml:lang="en-US">Typically, the name of the Collector should be used to indicate the person.</dc:description>
```

```
<rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
<dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/clt">
  <rdfs:label xml:lang="en-US">Collotyper</rdfs:label>
  <dc:description xml:lang="en-US">Typically, the name of the Collotyper should be used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/cmm">
  <rdfs:label xml:lang="en-US">Commentator</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person who provides interpretation, analysis, or a discussion of the subject matter on a recording, motion picture, or other audiovisual medium.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Commentator should be used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/cwt">
  <rdfs:label xml:lang="en-US">Commentator for written text</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person or corporate body responsible for the commentary or explanatory notes about a text. For the writer of manuscript annotations in a printed book, use Annotator [ann].</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Commentator for written text should be used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/com">
  <rdfs:label xml:lang="en-US">Compiler</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person who produces a work or publication by selecting and putting together material from the works of various persons or bodies.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Compiler should be used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
```

```
<dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/cpl">
  <rdfs:label xml:lang="en-US">Complainant</rdfs:label>
  <rdfs:comment xml:lang="en-US">The party who applies to the courts for redress,
usually in an equity proceeding.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Complainant should be
used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/cpt">
  <rdfs:label xml:lang="en-US">Complainant-appellant</rdfs:label>
  <rdfs:comment xml:lang="en-US">A complainant who takes an appeal from one court
or jurisdiction to another to reverse the judgment, usually in an equity
proceeding.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Complainant-appellant
should be used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/cpe">
  <rdfs:label xml:lang="en-US">Complainant-appellee</rdfs:label>
  <rdfs:comment xml:lang="en-US">A complainant against whom an appeal is taken from
one court or jurisdiction to another to reverse the judgment, usually in an equity
proceeding.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Complainant-appellee
should be used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/cmp">
  <rdfs:label xml:lang="en-US">Composer</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person who creates a musical work, usually a
piece of music in manuscript or printed form.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Composer should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor" />
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/cmt">
  <rdfs:label xml:lang="en-US">Compositor</rdfs:label>
  <dc:description xml:lang="en-US">Used for Typesetter</dc:description>
  <dc:description xml:lang="en-US">Typically, the name of the Compositor should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor" />
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
```

```
<dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/ccp">
  <rdfs:label xml:lang="en-US">Conceptor</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person or corporate body responsible for the
original idea on which a work is based, this includes the scientific author of an
audio-visual item and the conceptor of an advertisement.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Conceptor should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/cnd">
  <rdfs:label xml:lang="en-US">Conductor</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person who directs a performing group
(orchestra, chorus, opera, etc.).</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Conductor should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/csl">
  <rdfs:label xml:lang="en-US">Consultant</rdfs:label>
  <rdfs:comment xml:lang="en-US">The person called upon for professional advice or
services in a specialized field of knowledge or training.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Consultant should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/csp">
  <rdfs:label xml:lang="en-US">Consultant to a project</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person or corporate body engaged specifically to
provide an intellectual overview of a strategic or operational task and by analysis,
specification, or instruction, to create or propose a cost-effective course of action
or solution.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Consultant to a
project should be used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/cos">
  <rdfs:label xml:lang="en-US">Contestant</rdfs:label>
  <rdfs:comment xml:lang="en-US">The party who opposes, resists, or disputes, in a
```

```
court of law, a claim, decision, result, etc.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Contestant should be
used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/cot">
  <rdfs:label xml:lang="en-US">Contestant-appellant</rdfs:label>
  <rdfs:comment xml:lang="en-US">A contestant who takes an appeal from one court of
law or jurisdiction to another to reverse the judgment.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Contestant-appellant
should be used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/coe">
  <rdfs:label xml:lang="en-US">Contestant-appellee</rdfs:label>
  <rdfs:comment xml:lang="en-US">A contestant against whom an appeal is taken from
one court of law or jurisdiction to another to reverse the judgment.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Contestant-appellee
should be used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/cts">
  <rdfs:label xml:lang="en-US">Contestee</rdfs:label>
  <rdfs:comment xml:lang="en-US">The party defending a claim, decision, result,
etc. being opposed, resisted, or disputed in a court of law.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Contestee should be
used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/ctt">
  <rdfs:label xml:lang="en-US">Contestee-appellant</rdfs:label>
  <rdfs:comment xml:lang="en-US">A contestee who takes an appeal from one court or
jurisdiction to another to reverse the judgment.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Contestee-appellant
should be used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/cte">
  <rdfs:label xml:lang="en-US">Contestee-appellee</rdfs:label>
  <rdfs:comment xml:lang="en-US">A contestee against whom an appeal is taken from
one court or jurisdiction to another to reverse the judgment.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Contestee-appellee
should be used to indicate the person.</dc:description>
```

```
<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
<dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/ctr">
  <rdfs:label xml:lang="en-US">Contractor</rdfs:label>
  <rdfs:comment xml:lang="en-US">The person or corporate body who enters into a
contract with another person or corporate body to perform a specific
task.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Contractor should be
used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/ctb">
  <rdfs:label xml:lang="en-US">Contributor</rdfs:label>
  <rdfs:comment xml:lang="en-US">one whose work has been contributed to a larger
work, such as an anthology, serial publication, or other compilation of individual
works. Do not use for someone whose sole function in relation to a work is as author,
editor, compiler or translator.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Contributor should be
used to indicate the person.</dc:description>
  <owl:equivalentProperty
rdf:resource="http://purl.org/dc/elements/1.1/contributor" />
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/cpc">
  <rdfs:label xml:lang="en-US">Copyright claimant</rdfs:label>
  <rdfs:comment xml:lang="en-US">The person listed as a copyright owner at the time
of registration. Copyright can be granted or later transferred to another person or
agent, at which time the claimant becomes the copyright holder.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Copyright claimant
should be used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/cph">
  <rdfs:label xml:lang="en-US">Copyright holder</rdfs:label>
  <dc:description xml:lang="en-US">Typically, the name of the Copyright holder
should be used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/crr">
  <rdfs:label xml:lang="en-US">Corrector</rdfs:label>
  <rdfs:comment xml:lang="en-US">A corrector of manuscripts, such as the
scriptorium official who corrected the work of a scribe. For printed matter, use
Proofreader [pfr].</rdfs:comment>
```

```
<dc:description xml:lang="en-US">Typically, the name of the Corrector should be
used to indicate the person.</dc:description>
<rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
<dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/crp">
  <rdfs:label xml:lang="en-US">Correspondent</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person or organization who was either the writer
or recipient of a letter or other communication.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Correspondent should
be used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/cst">
  <rdfs:label xml:lang="en-US">Costume designer</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person who designs or makes costumes, fixes
hair, etc., for a musical or dramatic presentation or entertainment.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Costume designer
should be used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/cov">
  <rdfs:label xml:lang="en-US">Cover designer</rdfs:label>
  <rdfs:comment xml:lang="en-US">The person responsible for the graphic design of a
book cover, album cover, slipcase, box, container, etc. For the person responsible
for the graphic design of an entire book, use Book designer; for book jackets, use
Bookjacket designer.</rdfs:comment>
  <dc:description xml:lang="en-US">Used for Designer of cover</dc:description>
  <dc:description xml:lang="en-US">Typically, the name of the Cover designer should
be used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/cre">
  <rdfs:label xml:lang="en-US">Creator</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person or corporate body responsible for the
intellectual or artistic content of a work.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Creator should be
used to indicate the person.</dc:description>
  <owl:equivalentProperty rdf:resource="http://purl.org/dc/elements/1.1/creator"/>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
```

</rdf:Property>

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/cur">
  <rdfs:label xml:lang="en-US">Curator of an exhibition</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person who is responsible for conceiving and
organizing an exhibition.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Curator of an
exhibition should be used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/dnc">
  <rdfs:label xml:lang="en-US">Dancer</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person who principally exhibits dancing skills
in a musical or dramatic presentation or entertainment.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Dancer should be used
to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/dte">
  <rdfs:label xml:lang="en-US">Dedicatee</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person or organization to whom a book,
manuscript, etc., is dedicated (not the recipient of a gift).</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Dedicatee should be
used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/dto">
  <rdfs:label xml:lang="en-US">Dedicator</rdfs:label>
  <rdfs:comment xml:lang="en-US">The author of a dedication, which may be a formal
statement or in epistolary or verse form.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Dedicator should be
used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/dfd">
  <rdfs:label xml:lang="en-US">Defendant</rdfs:label>
  <rdfs:comment xml:lang="en-US">The party defending or denying allegations made in
a suit and against whom relief or recovery is sought in the courts, usually in a
legal action.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Defendant should be
used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
```


</rdf:Property>

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/dft">
  <rdfs:label xml:lang="en-US">Defendant-appellant</rdfs:label>
  <rdfs:comment xml:lang="en-US">A defendant who takes an appeal from one court or
jurisdiction to another to reverse the judgment, usually in a legal
action.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Defendant-appellant
should be used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/dfe">
  <rdfs:label xml:lang="en-US">Defendant-appellee</rdfs:label>
  <rdfs:comment xml:lang="en-US">A defendant against whom an appeal is taken from
one court or jurisdiction to another to reverse the judgment, usually in a legal
action.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Defendant-appellee
should be used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/dgg">
  <rdfs:label xml:lang="en-US">Degree grantor</rdfs:label>
  <rdfs:comment xml:lang="en-US">The corporate body granting a degree for which the
thesis or dissertation described was presented.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Degree grantor should
be used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/dln">
  <rdfs:label xml:lang="en-US">Delineator</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person or organization executing technical
drawings from others' designs.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Delineator should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor" />
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/dpc">
  <rdfs:label xml:lang="en-US">Depicted</rdfs:label>
  <rdfs:comment xml:lang="en-US">The person or group depicted or portrayed in a
work, particularly in a work of art.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Depicted should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/subject" />
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
```

```
<dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/dpt">
  <rdfs:label xml:lang="en-US">Depositor</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person or organization placing material in the
physical custody of a library or repository without transferring the legal
title.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Depositor should be
used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/dsr">
  <rdfs:label xml:lang="en-US">Designer</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person or organization responsible for design if
specific codes (e.g., [bkdl], [tydl]) are not desired.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Designer should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor" />
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/drt">
  <rdfs:label xml:lang="en-US">Director</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person who is responsible for the general
management of a work or who supervises the production of a performance for stage,
screen, or sound recording.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Director should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor" />
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/dis">
  <rdfs:label xml:lang="en-US">Dissertant</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person who presents a thesis for a university or
higher-level educational degree.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Dissertant should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor" />
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/dst">
  <rdfs:label xml:lang="en-US">Distributor</rdfs:label>
  <rdfs:comment xml:lang="en-US">An agent or agency that has exclusive or shared
marketing rights for an item.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Distributor should be
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used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/dnr">
  <rdfs:label xml:lang="en-US">Donor</rdfs:label>
  <rdfs:comment xml:lang="en-US">The donor of a book, manuscript, etc., to its
present owner. Donors to previous owners are designated as Former owner [fmo] or
Inscriber [ins].</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Donor should be used
to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/drm">
  <rdfs:label xml:lang="en-US">Draftsman</rdfs:label>
  <rdfs:comment xml:lang="en-US">The person who prepares artistic or technical
drawings.</rdfs:comment>
  <dc:description xml:lang="en-US">Used for Technical draftsman</dc:description>
  <dc:description xml:lang="en-US">Typically, the name of the Draftsman should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor" />
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/dub">
  <rdfs:label xml:lang="en-US">Dubious author</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person or corporate body to which authorship has
been dubiously or incorrectly ascribed.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Dubious author should
be used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/edt">
  <rdfs:label xml:lang="en-US">Editor</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person who prepares for publication a work not
primarily his/her own, such as by elucidating text, adding introductory or other
critical matter, or technically directing an editorial staff.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Editor should be used
to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor" />
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/elt">
  <rdfs:label xml:lang="en-US">Electrotypewriter</rdfs:label>
  <dc:description xml:lang="en-US">Typically, the name of the Electrotypewriter should
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be used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/eng">
  <rdfs:label xml:lang="en-US">Engineer</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person or organization that is responsible for
technical planning and design, particularly with construction.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Engineer should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/egr">
  <rdfs:label xml:lang="en-US">Engraver</rdfs:label>
  <dc:description xml:lang="en-US">Typically, the name of the Engraver should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/etr">
  <rdfs:label xml:lang="en-US">Etcher</rdfs:label>
  <dc:description xml:lang="en-US">Typically, the name of the Etcher should be used
to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/exp">
  <rdfs:label xml:lang="en-US">Expert</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person in charge of the description and
appraisal of the value of goods, particularly rare items, works of art,
etc.</rdfs:comment>
  <dc:description xml:lang="en-US">Used for Appraiser</dc:description>
  <dc:description xml:lang="en-US">Typically, the name of the Expert should be used
to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/fac">
  <rdfs:label xml:lang="en-US">Facsimilist</rdfs:label>
  <rdfs:comment xml:lang="en-US">The person or body that executed the
facsimile.</rdfs:comment>
  <dc:description xml:lang="en-US">Used for Copier</dc:description>
  <dc:description xml:lang="en-US">Typically, the name of the Facsimilist should be
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used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/flm">
  <rdfs:label xml:lang="en-US">Film editor</rdfs:label>
  <rdfs:comment xml:lang="en-US">An editor of a motion picture film. This term is
used regardless of the medium upon which the motion picture is produced or
manufactured (e.g., acetate film, video tape).</rdfs:comment>
  <dc:description xml:lang="en-US">Used for Motion picture editor</dc:description>
  <dc:description xml:lang="en-US">Typically, the name of the Film editor should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/frg">
  <rdfs:label xml:lang="en-US">Forger</rdfs:label>
  <dc:description xml:lang="en-US">Used for Copier</dc:description>
  <dc:description xml:lang="en-US">Used for Counterfeiter</dc:description>
  <dc:description xml:lang="en-US">Typically, the name of the Forger should be used
to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/fmo">
  <rdfs:label xml:lang="en-US">Former owner</rdfs:label>
  <rdfs:comment xml:lang="en-US">The person or organization who owned an item at
any time in the past. Includes those to whom the material was once presented. The
person or organization giving the item to the present owner is designated as Donor
[dnr]</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Former owner should
be used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/fnd">
  <rdfs:label xml:lang="en-US">Funder</rdfs:label>
  <rdfs:comment xml:lang="en-US">The person or agency that furnished financial
support for the production of the work.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Funder should be used
to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<!-- AP Not sure what's heppened here - something missing!
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc.relators/">
  <rdfs:label xml:lang="en-US"></rdfs:label>
  <dc:description xml:lang="en-US">Used for Artist</dc:description>
  <dc:description xml:lang="en-US">Typically, the name of the should be used to
indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc.relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
-->
<rdf:Property rdf:about="http://www.loc.gov/marc.relators/hnr">

  <rdfs:label xml:lang="en-US">Honoree</rdfs:label>
  <rdfs:comment xml:lang="en-US">The person in memory or honor of whom a book,
manuscript, etc. is donated.</rdfs:comment>
  <dc:description xml:lang="en-US">Used for Memorial</dc:description>
  <dc:description xml:lang="en-US">Typically, the name of the Honoree should be
used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc.relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
<rdf:Property rdf:about="http://www.loc.gov/marc.relators/hst">
  <rdfs:label xml:lang="en-US">Host</rdfs:label>
  <rdfs:comment xml:lang="en-US">The person who is invited or regularly leads a
program (often broadcast) that includes other guests, performers, etc. (e.g., talk
show host).</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Host should be used
to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc.relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc.relators/ilu">
  <rdfs:label xml:lang="en-US">Illuminator</rdfs:label>
  <dc:description xml:lang="en-US">Typically, the name of the Illuminator should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc.relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc.relators/ill">
  <rdfs:label xml:lang="en-US">Illustrator</rdfs:label>
  <rdfs:comment xml:lang="en-US">The person who conceives, and perhaps also
implements, a design or illustration, usually to accompany a written
text.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Illustrator should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc.relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/ins">
  <rdfs:label xml:lang="en-US">Inscriber</rdfs:label>
  <rdfs:comment xml:lang="en-US">The person who signs a presentation
statement.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Inscriber should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/itr">
  <rdfs:label xml:lang="en-US">Instrumentalist</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person who principally plays an instrument in a
musical or dramatic presentation or entertainment.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Instrumentalist
should be used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/ive">
  <rdfs:label xml:lang="en-US">Interviewee</rdfs:label>
  <dc:description xml:lang="en-US">Typically, the name of the Interviewee should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/ivr">
  <rdfs:label xml:lang="en-US">Interviewer</rdfs:label>
  <dc:description xml:lang="en-US">Typically, the name of the Interviewer should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/inv">
  <rdfs:label xml:lang="en-US">Inventor</rdfs:label>
  <dc:description xml:lang="en-US">Typically, the name of the Inventor should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/lsa">
  <rdfs:label xml:lang="en-US">Landscape architect</rdfs:label>
  <rdfs:comment xml:lang="en-US">The person or organization whose work involves
```

coordinating the arrangement of existing and proposed land features and structures.</rdfs:comment>

<dc:description xml:lang="en-US">Typically, the name of the Landscape architect should be used to indicate the person.</dc:description>

<rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>

<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">

<dcterms:issued>2002-11-13</dcterms:issued>

</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/len">

<rdfs:label xml:lang="en-US">Lender</rdfs:label>

<rdfs:comment xml:lang="en-US">A person or organization permitting the temporary use of a book, manuscript, etc., such as for photocopying or microfilming.</rdfs:comment>

<dc:description xml:lang="en-US">Typically, the name of the Lender should be used to indicate the person.</dc:description>

<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">

<dcterms:issued>2002-11-13</dcterms:issued>

</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/lil">

<rdfs:label xml:lang="en-US">Libelant</rdfs:label>

<rdfs:comment xml:lang="en-US">The party who files a libel in an ecclesiastical or admiralty case.</rdfs:comment>

<dc:description xml:lang="en-US">Typically, the name of the Libelant should be used to indicate the person.</dc:description>

<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">

<dcterms:issued>2002-11-13</dcterms:issued>

</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/lit">

<rdfs:label xml:lang="en-US">Libelant-appellant</rdfs:label>

<rdfs:comment xml:lang="en-US">A libelant who takes an appeal from one ecclesiastical court or admiralty to another to reverse the judgment.</rdfs:comment>

<dc:description xml:lang="en-US">Typically, the name of the Libelant-appellant should be used to indicate the person.</dc:description>

<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">

<dcterms:issued>2002-11-13</dcterms:issued>

</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/lie">

<rdfs:label xml:lang="en-US">Libelant-appellee</rdfs:label>

<rdfs:comment xml:lang="en-US">A libelant against whom an appeal is taken from one ecclesiastical court or admiralty to another to reverse the judgment.</rdfs:comment>

<dc:description xml:lang="en-US">Typically, the name of the Libelant-appellee should be used to indicate the person.</dc:description>

<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">

<dcterms:issued>2002-11-13</dcterms:issued>

</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/lle">

<rdfs:label xml:lang="en-US">Libelee</rdfs:label>


```
<rdfs:comment xml:lang="en-US">The party against whom a libel has been filed in
an ecclesiastical court or admiralty.</rdfs:comment>
<dc:description xml:lang="en-US">Typically, the name of the Libelee should be
used to indicate the person.</dc:description>
<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
<dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/let">
  <rdfs:label xml:lang="en-US">Libelee-appellant</rdfs:label>
  <rdfs:comment xml:lang="en-US">A libelee who takes an appeal from one
ecclesiastical court or admiralty to another to reverse the judgment.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Libelee-appellant
should be used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/lee">
  <rdfs:label xml:lang="en-US">Libelee-appellee</rdfs:label>
  <rdfs:comment xml:lang="en-US">A libelee against whom an appeal is taken from one
ecclesiastical court or admiralty to another to reverse the judgment.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Libelee-appellee
should be used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/lbt">
  <rdfs:label xml:lang="en-US">Librettist</rdfs:label>
  <rdfs:comment xml:lang="en-US">The writer of the text of an opera, oratorio,
etc.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Librettist should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor" />
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/lse">
  <rdfs:label xml:lang="en-US">Licensee</rdfs:label>
  <rdfs:comment xml:lang="en-US">The original recipient of the right to print or
publish.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Licensee should be
used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/lso">
  <rdfs:label xml:lang="en-US">Licensor</rdfs:label>
  <rdfs:comment xml:lang="en-US">The signer of the license, imprimatur,
etc.</rdfs:comment>
```

```
<dc:description xml:lang="en-US">Used for Imprimatur</dc:description>
<dc:description xml:lang="en-US">Typically, the name of the Licensor should be
used to indicate the person.</dc:description>
<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
<dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/litg">
  <rdfs:label xml:lang="en-US">Lithographer</rdfs:label>
  <rdfs:comment xml:lang="en-US">The person who prepares the stone or plate for
lithographic printing, including a graphic artist creating a design directly on the
surface from which printing will be done.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Lithographer should
be used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor" />
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/lyr">
  <rdfs:label xml:lang="en-US">Lyricist</rdfs:label>
  <rdfs:comment xml:lang="en-US">The writer of the text of a song.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Lyricist should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor" />
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/mrk">
  <rdfs:label xml:lang="en-US">Markup editor</rdfs:label>
  <rdfs:comment xml:lang="en-US">The person or organization performing the coding
of SGML, HTML, or XML markup of metadata, text, etc..</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Markup editor should
be used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor" />
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/mdc">
  <rdfs:label xml:lang="en-US">Metadata contact</rdfs:label>
  <rdfs:comment xml:lang="en-US">The person or organization primarily responsible
for compiling and maintaining the original description of a metadata set (e.g.,
geospatial metadata set).</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Metadata contact
should be used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor" />
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/mte">
```

```
<rdfs:label xml:lang="en-US">Metal-engraver</rdfs:label>
<dc:description xml:lang="en-US">Typically, the name of the Metal-engraver should
be used to indicate the person.</dc:description>
<rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
<dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/mod">
  <rdfs:label xml:lang="en-US">Moderator</rdfs:label>
  <rdfs:comment xml:lang="en-US">The person who leads a program (often broadcast)
where topics are discussed, usually with participation of experts in fields related
to the discussion.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Moderator should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/mon">
  <rdfs:label xml:lang="en-US">Monitor</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person or organization that supervises
compliance with the contract and is responsible for the report and controls its
distribution. Sometimes referred to as the grantee, or controlling
agency.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Monitor should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/mus">
  <rdfs:label xml:lang="en-US">Musician</rdfs:label>
  <rdfs:comment xml:lang="en-US">The person who performs music or contributes to
the musical content of a work when it is not possible or desirable to identify the
function more precisely.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Musician should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/nrt">
  <rdfs:label xml:lang="en-US">Narrator</rdfs:label>
  <rdfs:comment xml:lang="en-US">The speaker who relates the particulars of an act,
occurrence, or course of events.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Narrator should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
```

```
<dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/opn">
  <rdfs:label xml:lang="en-US">Opponent</rdfs:label>
  <rdfs:comment xml:lang="en-US">The person or corporate body responsible for
opposing a thesis or dissertation.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Opponent should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/orm">
  <rdfs:label xml:lang="en-US">Organizer of meeting</rdfs:label>
  <rdfs:comment xml:lang="en-US">The person or corporate body responsible for
organizing a meeting for which an item is the report or proceedings.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Organizer of meeting
should be used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/org">
  <rdfs:label xml:lang="en-US">Originator</rdfs:label>
  <rdfs:comment xml:lang="en-US">The author or agency performing the work, i.e.,
the name of a person or organization associated with the intellectual content of the
work. This category does not include the publisher or personal affiliation, or
sponsor except where it is also the corporate author. Includes a person designated in
the work as investigator or principal investigator.</rdfs:comment>
  <dc:description xml:lang="en-US">Used for Principal investigator</dc:description>
  <dc:description xml:lang="en-US">Typically, the name of the Originator should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<!-- AP I don't think this belongs in this list - it doesn't make much sense
      to me
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/oth">
  <rdfs:label xml:lang="en-US">Other</rdfs:label>
  <rdfs:comment xml:lang="en-US">relator codes from other lists which have no
equivalent in the MARC list or for terms which have not been assigned a
code.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Other should be used
to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

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```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/own">
  <rdfs:label xml:lang="en-US">Owner</rdfs:label>
  <rdfs:comment xml:lang="en-US">The person or organization that currently owns an
item or collection.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Owner should be used
to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/ppm">
  <rdfs:label xml:lang="en-US">Papermaker</rdfs:label>
  <dc:description xml:lang="en-US">Typically, the name of the Papermaker should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor" />
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/pta">
  <rdfs:label xml:lang="en-US">Patent applicant</rdfs:label>
  <rdfs:comment xml:lang="en-US">The person or corporate body that applied for a
patent.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Patent applicant
should be used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/pth">
  <rdfs:label xml:lang="en-US">Patent holder</rdfs:label>
  <dc:description xml:lang="en-US">Used for Patentee</dc:description>
  <dc:description xml:lang="en-US">Typically, the name of the Patent holder should
be used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/pat">
  <rdfs:label xml:lang="en-US">Patron</rdfs:label>
  <rdfs:comment xml:lang="en-US">The person responsible for commissioning a work.
Usually a patron uses his or her means or influence to support the work of artists,
writers, etc. This includes those who commission and pay for individual
works.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Patron should be used
to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor" />
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/prf">
  <rdfs:label xml:lang="en-US">Performer</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person who exhibits musical or acting skills i a
musical or dramatic presentation or entertainment, if specific codes for those
functions ([act], [dnc], [itr], [voc], etc.) are not used. If specific codes are
used, [prf] is used for a person whose principal skill is not known or
specified.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Performer should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/pht">
  <rdfs:label xml:lang="en-US">Photographer</rdfs:label>
  <rdfs:comment xml:lang="en-US">The person or organization responsible for taking
photographs, whether they are used in their original form or as
reproductions.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Photographer should
be used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/ptf">
  <rdfs:label xml:lang="en-US">Plaintiff</rdfs:label>
  <rdfs:comment xml:lang="en-US">The party who complains or sues in court in a
personal action, usually in a legal proceeding.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Plaintiff should be
used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/ptt">
  <rdfs:label xml:lang="en-US">Plaintiff-appellant</rdfs:label>
  <rdfs:comment xml:lang="en-US">A plaintiff who takes an appeal from one court or
jurisdiction to another to reverse the judgment, usually in a legal
proceeding.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Plaintiff-appellant
should be used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/pte">
  <rdfs:label xml:lang="en-US">Plaintiff-appellee</rdfs:label>
  <rdfs:comment xml:lang="en-US">A plaintiff against whom an appeal is taken from
one court or jurisdiction to another to reverse the judgment, usually in a legal
proceeding.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Plaintiff-appellee
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should be used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/plt">
  <rdfs:label xml:lang="en-US">Platemaker</rdfs:label>
  <dc:description xml:lang="en-US">Typically, the name of the Platemaker should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/prt">
  <rdfs:label xml:lang="en-US">Printer</rdfs:label>
  <rdfs:comment xml:lang="en-US">The person or organization who prints texts,
whether from type or plates.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Printer should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/pop">
  <rdfs:label xml:lang="en-US">Printer of plates</rdfs:label>
  <rdfs:comment xml:lang="en-US">The person or organization who prints
illustrations from plates.</rdfs:comment>
  <dc:description xml:lang="en-US">Used for Plates, Printer of</dc:description>
  <dc:description xml:lang="en-US">Typically, the name of the Printer of plates
should be used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/prm">
  <rdfs:label xml:lang="en-US">Printmaker</rdfs:label>
  <rdfs:comment xml:lang="en-US">The person who makes a relief, intaglio, or
planographic printing surface..</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Printmaker should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/prc">
  <rdfs:label xml:lang="en-US">Process contact</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person or organization primarily responsible for
performing or initiating a process, such as is done with the collection of metadata
sets.</rdfs:comment>
```

```
<dc:description xml:lang="en-US">Typically, the name of the Process contact
should be used to indicate the person.</dc:description>
<rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
<dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/pro">
  <rdfs:label xml:lang="en-US">Producer</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person who is responsible for the making of a
motion picture, including business aspects, management of the productions, and the
commercial success of the work.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Producer should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/prd">
  <rdfs:label xml:lang="en-US">Production personnel</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person who is associated with the production
(props, lighting, special effects, etc.) of a musical or dramatic presentation or
entertainment.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Production personnel
should be used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/prg">
  <rdfs:label xml:lang="en-US">Programmer</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person or corporate body responsible for the
creation and/or maintenance of computer program design documents, source code, and
machine-executable digital files and supporting documentation.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Programmer should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/pfr">
  <rdfs:label xml:lang="en-US">Proofreader</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person who corrects printed matter. For
manuscripts, use Corrector [crr].</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Proofreader should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```



```
<rdf:Property rdf:about="http://www.loc.gov/marc.relators/pbl">
  <rdfs:label xml:lang="en-US">Publisher</rdfs:label>
  <dc:description xml:lang="en-US">Typically, the name of the Publisher should be
used to indicate the person.</dc:description>
  <owl:equivalentProperty
rdf:resource="http://purl.org/dc/elements/1.1/publisher"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc.relators/pbd">
  <rdfs:label xml:lang="en-US">Publishing director</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person who presides over the elaboration of a
collective work to ensure its coherence or continuity. This includes editors-in-
chief, literary editors, editors of series, etc.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Publishing director
should be used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc.relators/rcp">
  <rdfs:label xml:lang="en-US">Recipient</rdfs:label>
  <rdfs:comment xml:lang="en-US">The person to whom correspondence is
addressed.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Recipient should be
used to indicate the person.</dc:description>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc.relators/rce">
  <rdfs:label xml:lang="en-US">Recording engineer</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person who supervises the technical aspects of a
sound or video recording session.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Recording engineer
should be used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc.relators/red">
  <rdfs:label xml:lang="en-US">Redactor</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person who writes or develops the framework for
an item without being intellectually responsible for its content.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Redactor should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
```

</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/ren">

<rdfs:label xml:lang="en-US">Renderer</rdfs:label>

<rdfs:comment xml:lang="en-US">The draftsman who prepares drawings of architectural designs (i.e., renderings) in accurate, representational perspective to show what the project will look like when completed.</rdfs:comment>

<dc:description xml:lang="en-US">Typically, the name of the Renderer should be used to indicate the person.</dc:description>

<rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>

<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">

<dcterms:issued>2002-11-13</dcterms:issued>

</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/rpt">

<rdfs:label xml:lang="en-US">Reporter</rdfs:label>

<rdfs:comment xml:lang="en-US">A person who writes or presents reports of news or current events on air or in print.</rdfs:comment>

<dc:description xml:lang="en-US">Typically, the name of the Reporter should be used to indicate the person.</dc:description>

<rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>

<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">

<dcterms:issued>2002-11-13</dcterms:issued>

</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/rth">

<rdfs:label xml:lang="en-US">Research team head</rdfs:label>

<rdfs:comment xml:lang="en-US">The person or corporate body that directed or managed a research project.</rdfs:comment>

<dc:description xml:lang="en-US">Typically, the name of the Research team head should be used to indicate the person.</dc:description>

<rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>

<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">

<dcterms:issued>2002-11-13</dcterms:issued>

</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/rtm">

<rdfs:label xml:lang="en-US">Research team member</rdfs:label>

<rdfs:comment xml:lang="en-US">The person or corporate body that participated in a research project but whose role did not involve direction or management of it.</rdfs:comment>

<dc:description xml:lang="en-US">Typically, the name of the Research team member should be used to indicate the person.</dc:description>

<rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>

<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">

<dcterms:issued>2002-11-13</dcterms:issued>

</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/res">

<rdfs:label xml:lang="en-US">Researcher</rdfs:label>

<rdfs:comment xml:lang="en-US">The person or corporate body responsible for performing research.</rdfs:comment>

<dc:description xml:lang="en-US">Used for Performer of research</dc:description>

```
<dc:description xml:lang="en-US">Typically, the name of the Researcher should be
used to indicate the person.</dc:description>
<rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
<dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/rsp">
<rdfs:label xml:lang="en-US">Respondent</rdfs:label>
<rdfs:comment xml:lang="en-US">The party who makes an answer to the courts
pursuant to an application for redress, usually in an equity
proceeding.</rdfs:comment>
<dc:description xml:lang="en-US">Typically, the name of the Respondent should be
used to indicate the person.</dc:description>
<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
<dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/rst">
<rdfs:label xml:lang="en-US">Respondent-appellant</rdfs:label>
<rdfs:comment xml:lang="en-US">A respondent who takes an appeal from one court or
jurisdiction to another to reverse the judgment, usually in an equity
proceeding.</rdfs:comment>
<dc:description xml:lang="en-US">Typically, the name of the Respondent-appellant
should be used to indicate the person.</dc:description>
<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
<dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/rse">
<rdfs:label xml:lang="en-US">Respondent-appellee</rdfs:label>
<rdfs:comment xml:lang="en-US">A respondent against whom an appeal is taken from
one court or jurisdiction to another to reverse the judgment, usually in an equity
proceeding.</rdfs:comment>
<dc:description xml:lang="en-US">Typically, the name of the Respondent-appellee
should be used to indicate the person.</dc:description>
<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
<dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/rev">
<rdfs:label xml:lang="en-US">Reviewer</rdfs:label>
<rdfs:comment xml:lang="en-US">A person or corporate body responsible for the
review of book, motion picture, performance, etc.</rdfs:comment>
<dc:description xml:lang="en-US">Typically, the name of the Reviewer should be
used to indicate the person.</dc:description>
<rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
<dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/rbr">
<rdfs:label xml:lang="en-US">Rubricator</rdfs:label>
```

```
<dc:description xml:lang="en-US">Typically, the name of the Rubricator should be
used to indicate the person.</dc:description>
<rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
<dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/sce">
  <rdfs:label xml:lang="en-US">Scenarist</rdfs:label>
  <rdfs:comment xml:lang="en-US">The author of a motion picture
screenplay.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Scenarist should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/sad">
  <rdfs:label xml:lang="en-US">Scientific advisor</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person who brings scientific, pedagogical, or
historical competence to the conception and realization on a work, particularly in
the case of audio-visual items.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Scientific advisor
should be used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/scr">
  <rdfs:label xml:lang="en-US">Scribe</rdfs:label>
  <rdfs:comment xml:lang="en-US">An amanuensis and for a writer of manuscripts
proper. For a person who makes pen-facsimiles, use Facsimilist [fac].</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Scribe should be used
to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/scl">
  <rdfs:label xml:lang="en-US">Sculptor</rdfs:label>
  <rdfs:comment xml:lang="en-US"> the more general term Artist [art] is not
desired.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Sculptor should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/sec">
```

```
<rdfs:label xml:lang="en-US">Secretary</rdfs:label>
<rdfs:comment xml:lang="en-US">A recorder, redactor, or other person responsible
for expressing the views of a corporate body.</rdfs:comment>
<dc:description xml:lang="en-US">Typically, the name of the Secretary should be
used to indicate the person.</dc:description>
<rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
<dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/sgn">
<rdfs:label xml:lang="en-US">Signer</rdfs:label>
<rdfs:comment xml:lang="en-US">The person whose signature appears without a
presentation or other statement indicative of provenance. When there is a
presentation statement, use Inscriber [ins].</rdfs:comment>
<dc:description xml:lang="en-US">Typically, the name of the Signer should be used
to indicate the person.</dc:description>
<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
<dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/sng">
<rdfs:label xml:lang="en-US">Singer</rdfs:label>
<rdfs:comment xml:lang="en-US">A person who uses his or her voice with or without
instrumental accompaniment to produce music. A singer's performance may or may not
include actual words.</rdfs:comment>
<dc:description xml:lang="en-US">Typically, the name of the Singer should be used
to indicate the person.</dc:description>
<rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
<dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/spk">
<rdfs:label xml:lang="en-US">Speaker</rdfs:label>
<rdfs:comment xml:lang="en-US">A person who participates in a program (often
broadcast) and makes a formalized contribution or presentation generally prepared in
advance.</rdfs:comment>
<dc:description xml:lang="en-US">Typically, the name of the Speaker should be
used to indicate the person.</dc:description>
<rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
<dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/spn">
<rdfs:label xml:lang="en-US">Sponsor</rdfs:label>
<rdfs:comment xml:lang="en-US">The person or agency that issued a contract or
under the auspices of which a work has been written, printed, published,
etc.</rdfs:comment>
<dc:description xml:lang="en-US">Typically, the name of the Sponsor should be
used to indicate the person.</dc:description>
<rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
```

```
<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
<dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/stn">
  <rdfs:label xml:lang="en-US">Standards body</rdfs:label>
  <rdfs:comment xml:lang="en-US">A corporate body or agency responsible for the
development or enforcement of a standard.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Standards body should
be used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/str">
  <rdfs:label xml:lang="en-US">Stereotyper</rdfs:label>
  <dc:description xml:lang="en-US">Typically, the name of the Stereotyper should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/stl">
  <rdfs:label xml:lang="en-US">Storyteller</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person relaying a story with creative and/or
theatrical interpretation.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Storyteller should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/srv">
  <rdfs:label xml:lang="en-US">Surveyor</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person or organization who does measurements of
tracts of land, etc. to determine location, forms, and boundaries.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Surveyor should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/tha">
  <rdfs:label xml:lang="en-US">Thesis advisor</rdfs:label>
  <rdfs:comment xml:lang="en-US">The person under whose supervision a degree
candidate develops and presents a thesis, meacute;moire, or text of a
dissertation.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Thesis advisor should
be used to indicate the person.</dc:description>
```

```
<rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
<dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/trc">
  <rdfs:label xml:lang="en-US">Transcriber</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person who prepares a handwritten or typewritten
copy from original material, including from dictated or orally recorded material. For
makers of pen-facsimiles, use Facsimilist [fac].</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Transcriber should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/trl">
  <rdfs:label xml:lang="en-US">Translator</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person who renders a text from one language into
another, or from an older form of a language into the modern form.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Translator should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/tyd">
  <rdfs:label xml:lang="en-US">Type designer</rdfs:label>
  <rdfs:comment xml:lang="en-US">The person who designed the type face used in a
particular item.</rdfs:comment>
  <dc:description xml:lang="en-US">Used for Designer of type</dc:description>
  <dc:description xml:lang="en-US">Typically, the name of the Type designer should
be used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/tyg">
  <rdfs:label xml:lang="en-US">Typographer</rdfs:label>
  <rdfs:comment xml:lang="en-US">The person primarily responsible for choice and
arrangement of type used in an item. If the typographer is also responsible for other
aspects of the graphic design of a book (e.g., Book designer [bkd]), codes for both
functions may be needed.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Typographer should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/" />
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>
```

```
<rdf:Property rdf:about="http://www.loc.gov/marc/relators/voc">
  <rdfs:label xml:lang="en-US">Vocalist</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person who principally exhibits singing skills
in a musical or dramatic presentation or entertainment.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Vocalist should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/wit">
  <rdfs:label xml:lang="en-US">Witness</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person who verifies the truthfulness of an event
or action.</rdfs:comment>
  <dc:description xml:lang="en-US">Used for Deponent</dc:description>
  <dc:description xml:lang="en-US">Used for Eyewitness</dc:description>
  <dc:description xml:lang="en-US">Used for Observer</dc:description>
  <dc:description xml:lang="en-US">Used for Onlooker</dc:description>
  <dc:description xml:lang="en-US">Used for Testifier</dc:description>
  <dc:description xml:lang="en-US">Typically, the name of the Witness should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/wde">
  <rdfs:label xml:lang="en-US">Wood-engraver</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person who makes prints by cutting the image in
relief on the end-grain of a wood block.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Wood-engraver should
be used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/wdc">
  <rdfs:label xml:lang="en-US">Woodcutter</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person who makes prints by cutting the image in
relief on the plank side of a wood block.</rdfs:comment>
  <dc:description xml:lang="en-US">Typically, the name of the Woodcutter should be
used to indicate the person.</dc:description>
  <rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>
  <rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">
  <dcterms:issued>2002-11-13</dcterms:issued>
</rdf:Property>

<rdf:Property rdf:about="http://www.loc.gov/marc/relators/wam">
  <rdfs:label xml:lang="en-US">Writer of accompanying material</rdfs:label>
  <rdfs:comment xml:lang="en-US">A person who writes significant material which
accompanies a sound recording or other audiovisual material.</rdfs:comment>
```



```
<dc:description xml:lang="en-US">Typically, the name of the Writer of  
accompanying material should be used to indicate the person.</dc:description>  
<rdfs:subPropertyOf rdf:resource="http://purl.org/dc/elements/1.1/contributor"/>  
<rdfs:isDefinedBy rdf:resource="http://www.loc.gov/marc/relators/">  
<dcterms:issued>2002-11-13</dcterms:issued>  
</rdf:Property>  
</rdf:RDF>
```

Date: Tue, 9 Mar 2004 16:40:05 -0500 (EST)
From: Rebecca S. Guenther <rgue@loc.gov>
To: Andy Powell <a.powell@ukoln.ac.uk>
Cc: dihl@cornell.edu
Subject: IMPORTANT: Roles

Here are my comments on your markup and where I do and don't agree. We've had some previous email on the question of the narrowness of semantics in dc:contributor. Your answer concerning the value of core vs. some of these more specific roles that are outside core is well taken. But I still argue that what is a contributor is in the mind of the beholder; i.e. it depends upon what sort of resource you are describing. If in the legal field, the plaintiff may be a contributor if it is a transcript of the proceedings. I could argue that for almost everything on the list. Also, I didn't think you were consistent in your assessment (not that it was an easy job!). So here are those that I don't entirely agree with:

Applicant: if the resource were an application for something, this would certainly be a contributor.

Attributed name: "Use to relate an author, artist, etc. to a work for which there is or once was substantial authority for designating that person as author, creator, etc. of the work."
This says it is possibly a contributor, although it is not certain, so should be a refinement of contributor.

Auctioneer: what if the resource is a list of items to be auctioned; the auctioneer would have contributed.

Bibliographic antecedent: "Use for the author responsible for a work upon which the work represented by the catalog record is based. This may be appropriate for adaptations, sequels, continuations, indexes, etc."
The only reason I could see for you not considering this as contributor is the 1:1 principle, but I don't think you can control how people are describing these works. We already know that there is lots of controversy about that. Certainly the "bibliographic antecedent" played a role in the creation of the resource.

Client: "a person or organization for whom another person or organization is acting"
This is what is used e.g. for the owner of a house that an architect designed. I would certainly think the client would have input in that design so would consider a contributor.

Complainant: "Use for the party who applies to the courts for redress, usually in an equity proceeding."
I won't list all of the legal terms that are in this document, but for any of them, if the resource is the proceeding itself, I would consider them contributors to the content of the resource. You have excluded all of the legal terms (and there are lots of them).

Contractor: Often the contractor does all the intellectual work.

Copyright claimant: if the resource is a copyright registration, then this and copyright holder would be contributors.

Dedicator: Use for the author of a dedication, which may be a formal statement or in epistolary or verse form.
If some famous person wrote the dedication, I would bet you would want to consider him a contributor-- it is part of the intellectual content,

although perhaps a small part.

Degree grantor: wouldn't that institution have provided much that contributed to the intellectual content? Can you imagine all these theses and dissertation projects not being able to call the institution a contributor??

Distributor: should this be a subProperty of publisher? (or maybe we're not making these associations)

Expert: "Use for a person in charge of the description and appraisal of the value of goods, particularly rare items, works of art, etc. "
What if an art catalog of some sort?

Under funder: The part highlighted as being incomplete I can remove-- it was part of a reference that should not be there.

Monitor: "Use for a person or organization that supervises compliance with the contract and is responsible for the report and controls its distribution. Sometimes referred to as the grantee, or controlling agency."

This you indicated was refinement of contributor, but why this and not others that don't have a direct contribution?

Opponent: "Use for the person or corporate body responsible for opposing a thesis or dissertation."
You have this one as contributor, but not, e.g. degree grantor.

Other: this is our extension mechanism. I can understand why you wouldn't want it to be included.

This does bring up to me how we will maintain this document if we start removing terms. But I guess that's our problem.

Patent applicant and patent holder: same as copyright; what if the resource is a description of the patent?

Patron: why this and not client? Seem to be similar roles.

Publisher: should this be a subProperty of Contributor, since creator is?

Witness: you've included this one as contributor, but none of the other legal terms (which I would argue should all be included).

This exercise brings up the question:

Are we creating a "core" list of roles? Previous discussion said no, we don't want to do that. Application profiles can do that.
or

Are we just saying that the term does or does not refine contributor? But then you have to think broadly what the possible resource could be which is being described.

This exercise again says to me that maybe it isn't best to decide for others what they want to consider as contributors, since it depends on what they're describing.

So where do we go from here? If you want to comment on those above, I'll just accept it and update the document. My argument for some not mentioned above was the need for access to the resource from the name whose role is the term from this list. You answered that by saying use the term as one from the marc namespace. I'll accept that, although I still question whether we should be doing this. It also means that for any new roles that we propose adding to our MARC list, we will have to bring it to the UB to

see if it refines contributor, rather than just automatically adding? This will make maintenance a bit of a headache.

Sorry for the length of this message and being such a pain. Copied to Diane so that she can comment. If we can come to some conclusion right away I can revise on Wed.-- leaving Thurs. night (I'll be in the office for most of Thurs.).

Rebecca

On Mon, 23 Feb 2004, Andy Powell wrote:

> On Thu, 19 Feb 2004, Rebecca S. Guenther wrote:
>
> > If you do the first, will you also attempt to evaluate whether the given
> > term is a refinement of dc:contributor? That seems to me what will take
> > the most time. That approach is fine with me if that's what you meant. I
> > would then see if I agree. In the meantime I might look at the list and
> > independently try to assess which should be contributor and which not.
>
> My first attempt is at
>
> <http://www.ukoln.ac.uk/metadata/dcmi/marcrel/codes.xml>
>
> Note that in addition to removing subproperty of dc:contributor in quite a
> few cases, I have also done the following
>
> - marcrel:cre --equivalentproperty--> dc:creator
> - marcrel:aut --equivalentproperty--> dc:creator
> - marcrel:pbl --equivalentproperty--> dc:publisher
> - marcrel:dpc --subpropertyof-----> dc:subject
>
> And I've corrected the URL for dc:contributor throughout! :-)
>
> I've checked this file still validates.
>
> Andy.
>

Date: Wed, 10 Mar 2004 21:28:46 -0000
From: Pete Johnston <p.johnston@UKOLN.AC.UK>
Subject: Re: IMPORTANT: Roles (fwd)
To: DC-USAGE@JISCMail.AC.UK

Rebecca,

> Here are my comments on your markup and where I do and don't
> agree. We've had some previous email on the question of the
> narrowness of semantics in dc:contributor. Your answer
> concerning the value of core vs. some of these more specific
> roles that are outside core is well taken. But I still argue
> that what is a contributor is in the mind of the beholder;
> i.e. it depends upon what sort of resource you are
> describing. If in the legal field, the plaintiff may be a
> contributor if it is a transcript of the proceedings. I could
> argue that for almost everything on the list. Also, I didn't
> think you were consistent in your assessment (not that it was
> an easy job!). So here are those that I don't entirely agree with:

[snip]

> This exercise again says to me that maybe it isn't best to
> decide for others what they want to consider as contributors,
> since it depends on what they're describing.

Just to clarify.... by declaring a property `example:role` a sub-property of `dc:contributor`, we are saying that:

If you state

`_x example:role _y`

then (in all cases) I can infer that

`_x dc:contributor _y`

so we should only make the sub-property assertion where that rule holds in all cases.

Now, if `example:role` is `_not_` declared as a sub-property of `dc:contributor` I can't draw the conclusion above. `_However_`, it doesn't stop you saying (where appropriate) that both

`_x example:role _y`

and

`_x dc:contributor _y`

i.e. it doesn't mean an agent who is a plaintiff can't also be a contributor; it just means I can't infer that all plaintiffs are contributors. Which is what we want, I think?

(I think maybe it's a bit confusing to think of these properties as "roles": they describe relationships between a resource and an entity/agent, just as the `dc:contributor` property does.)

Topic: Dublin Core and OAI
Modified: 2004-03-22 09:41, Monday
Maintainer: Tom Baker
Latest version: <http://dublincore.org/usage/meetings/2004/03/ISSUES/oai/>
See also: <http://dublincore.org/usage/meetings/2004/03/ISSUES/>

Shepherd: Tom Baker

SUMMARY

We should discuss

- the use of OAI-PMH to exchange metadata about "complex objects" (such as MPEG21 DIDLs), as the argument is sometimes made that it is inappropriate to use simple metadata when the objects are complex;
- whether the Usage Board might play a useful role in clarifying some of the issues identified below;
- more specifically, whether the Usage Board would even consider evaluating proposals for extensions to the DCMI Type Vocabulary, such as (hypothetically) "Person".

BACKGROUND

Report on breakout session: "The relationship between OAI-PMH and Dublin Core: Required, recommended or other?" [1]

OAI3 workshop, CERN, Geneva, 13 February 2004

Background to this session was a discussion last summer on the OAI mailing list (see [2], appended in plain text below, and the ensuing discussion thread).

The breakout session broke the problem down into several separate issues: 1) the inappropriateness or misuse of DC to describe non-document-like objects, 2) the low quality of many harvested metadata records in DC, 3) the question of whether DC elements were too non-specific to be useful, and 4) the observation that the effort of supplying DC for OAI-PMH compliance has -- rightly or wrongly -- discouraged some data providers from supplying richer metadata as well.

OAI-PMH already supports the harvesting of richer metadata in addition to the mandatory DC, so the issue was only whether the DC records should be made optional. In retrospect, it seemed like we were able in the allotted two hours to cover the main issues fairly well, though it would perhaps have been helpful to spend more time on the issue of Qualified as opposed to Simple Dublin Core.

Taking the issues in order:

1. Using DC in inappropriate ways. Some data providers have tried to use the fifteen elements to describe entities such as "people" and "places". I suggested that for each

major type of information described in the OAI context, guidelines be formulated to specify which elements should most appropriately be used in which ways. For example, a "person" might have a Type ("person") and an Identifier, and nothing else. Everyone seemed to agree that knowing that a resource was a "person" as opposed to a "physical object" or an "event" would be helpful -- or at any rate better than nothing! -- in assessing the utility of a resource.

2. Quality of metadata content. Junky records make junky indexes, and in many contexts (such as NSDL), the quality of metadata varies. Two points were made in response. Firstly, it was pointed out that the problem of bad metadata is not inherent to Dublin Core, but more general. As always, addressing the problem implies better tools and interfaces, partitioned workflows for metadata creation and quality control, and better guidelines for the use of DC in specific communities. Secondly, it was pointed out that DC is used not just for indexing and searching, but for listing result sets for browsing. Given the difficulty of extracting even basic information such as Titles and Authors on the fly from a broad diversity of metadata structures, dispensing with Dublin Core would mean that useful basic information about resources could often not be displayed at all.
3. Non-specific metadata semantics. In response to the complaint that DC elements are too imprecise to be useful, it was pointed out that is a problem inherent to the limitations of Simple DC (uncontextualized string values) as opposed to Qualified DC. It would seem that harvesters are particularly concerned about `dc:identifier` and `dc:subject`, where they are currently often reduced to crudely guessing the context of a subject heading or identifier. For `dc:identifier` in particular, it was suggested that this be addressed through more strongly encouraging the use of URIs. Beyond that, it was suggested that DC be constrained in usage guidelines for OAI as a whole -- i.e., in an OAI application profile of Dublin Core. However, it was pointed out in response that attempts to make the use of elements more specific in order to solve the problem for some inevitably seem to create problems for others -- a "classic" dilemma of interoperability.
4. Using DC instead of richer formats. In the OAI community, it has been observed that data providers focus on meeting the Dublin Core requirement only -- instead of also providing richer metadata (such as IEEE/LOM, MARC, Academic Metadata Format, OLAC, and RDF combinations of multiple metadata vocabularies). This apparently happens even when the provider already has richer metadata which it could export in parallel to DC -- something which OAI-PMH currently supports. In other words, people with richer metadata are dumbing down to DC, while people with no metadata create DC records and then stop, even if DC is not ideal.

In response, it was suggested that OAI proceed on two fronts:

- by actively promoting the use (or re-use) of richer metadata alongside DC;
- that future versions of the protocol support the indication of a preference for the richer formats -- for example, by pointing to preferred metadata from the "about" container of the required DC metadata.

Summary of the group mood:

- Keep Dublin Core mandatory
- Encourage the use of richer formats parallel to DC
- Support the indication of "preferred" formats
- Constrain insufficiently specific elements with usage recommendations ("use a URI with dc:identifier")
- Explain how to use DC with non-document-like resources ("for people, just use Identifier and Type")

Open issues:

- One important constraint is that no solution (e.g., changing future versions of OAI-PMH) may invalidate current implementations of OAI-PMH
- There should be some clarification of the role of empty DC records which are (in fact) compliant.

REFERENCES

- [1] <http://www.openarchives.org/pipermail/oai-implementers/2003-August/000945.html>
- [2] <http://info.web.cern.ch/info/OAIP/Breakout.html#group2>

Date: Mon, 4 Aug 2003 15:49:17 -0400
From: "Carl Lagoze" <lagoze@cs.cornell.edu>
To: <oai-implementers@oaisrv.nsd.cornell.edu>

Dublin Core has been the mandated metadata format in OAI-PMH since the initial release of the protocol. The purpose of this requirement was to promote interoperability among data providers. It was the subject of considerable discussion in the formulation of both the 1.0 and 2.0 specifications and we think that it is time to reexamine this requirement in light of two factors:

1. There is increasing interest in using the protocol for applications other than sharing metadata to promote resource discovery [1][2]. Dublin Core is targeted mainly as metadata for resource discovery and is, therefore, inappropriate for these other applications. It might make sense to loosen the Dublin Core requirement to a recommendation, and thus reduce any barrier to these broader applications.
2. The linkage between Dublin Core and OAI-PMH has been over-emphasized at the expense of the utility of OAI-PMH for dissemination of richer, and perhaps more useful, structured data. In some cases data providers with richer metadata (e.g., MARC, IEEE LOM) have been forced by the requirement to dumb-down rich metadata to Dublin Core and have then failed to provide the original metadata. As a result, the community

looses the benefits of rich data and is left with the reduced semantics of Dublin Core.

We need to choose between the competing goals of protocol stability and generalization. Although removing the Dublin Core requirement would not negatively impact existing or future data providers, it may impact service providers whose applications depend on the existence of a uniform metadata format.

We would like to open this subject for community discussion. While the technical aspects of this change are minimal it does have considerable political impact. Please give your feedback on the following proposal:

1. Change the Dublin Core requirement to a recommendation.
2. Leave oai_dc as a reserved metadataPrefix
3. Move the oai_dc part of protocol document to Implementation Guidelines

We invite members of this list to contribute their thoughts on this.

[1] <http://www.dlib.org/dlib/july03/young/07young.html>

[2] <http://agenda.cern.ch/askArchive.php?base=agenda&categ=a02333&id=a02333s5t5/transparencies>

Carl Lagoze
Michael Nelson
Herbert Van de Sompel
Simeon Warner

Date: Tue, 17 Feb 2004 18:48:16 +0100
From: Roland Schwaenzl <Roland.Schwaenzl@MATHEMATIK.UNI-OSNABRUECK.DE>

I'm a bit lunified about the criticism concerning DC.

In my view the problem described is an artefact of XML Schema binding - in the way it is quite often done. [...and to my understanding is done by OAI as well].

Not at all we should accept the criticism in
DC15/plainLiteralValue metadata.

Low effort seldom results in sustained big gain.

DCMI since years is developing more expressive
properties.

The problem is, that explicit listing of all properties (and classes) allowed in an XML (!) Schema does not scale well in this respect - additionally one still has the problem of relating XML Elements defined in an XML Schema with invariant URI's.

At Seattle my core assertion the need to develop the typed object aspect of metadata further within DCMI.

In Math-Net since several years we use typed objects along with DC (of course we created classes for persons, organizations and ...) By far we are not the only initiative which did so in the meantime.

I don't know how often i pointed to the problem of records, which use DC15/plainLiteralValue syntactically but in reality put codes from classification schemes into the subject field.

Of course the receiving application will judge such metadata as low quality.

Topic: Old business - etc
Modified: 2004-03-22 09:41, Monday
Maintainer: Tom Baker
Latest version: <http://dublincore.org/usage/meetings/2004/03/ISSUES/etc-old/>
See also: <http://dublincore.org/usage/meetings/2004/03/ISSUES/>

ITHACA/SEATTLE ACTION (Directorate)

Talk with ISO and NISO re posting copies of standards on DCMI website.

We need to check with NISO and ISO what the rules are that they have for 'Maintenance Agencies'

-- do we get the right to post the final text of these standards on our Web site?

-- how can we make changes and feed them back into the standard (e.g. can we fast-track the capitalization issue)?

ITHACA ACTION (Stuart)

The UB process document be amended to clarify that change requests from Working Groups should not combine a number of unrelated proposals.

ITHACA ACTION (Diane and Stuart)

Work on the DCMI Type vocabulary to move examples in definitions into a comment field.

SEATTLE Action Item 7: Diane to remove references in "Using DC" to using a label within relation if a refinement is not being used.

ITHACA ACTION ITEM Andy + Andrew: Revise DCSV Specification and various DCSV scheme specifications after approval of abstract model recommendation.

Topic: Usage Board issues
Modified: 2004-03-22 09:41, Monday
Maintainer: Tom Baker
Latest version: <http://dublincore.org/usage/meetings/2004/03/ISSUES/usageboard/>
See also: <http://dublincore.org/usage/meetings/2004/03/ISSUES/>

Shepherd: Tom Baker

SUMMARY

1. Voting in the Usage Board

The DCMI Directorate has been working with the Board of Trustees on a set of by-laws for DCMI. One aspect of the draft -- on the request of the trustees -- will be to formulate a coherent approach to voting that cross-cuts different types of committees, including the Usage Board. Tom will circulate copies of the section of the bylaws dealing with the Usage Board for discussion and feedback.

2. Recruitment

Tom will circulate an excerpt from the draft bylaws in which "liaisons" are defined (based on the proposal by Diane and Rebecca).

3. Next meeting in Shanghai

<http://dublincore.org/usage/meetings/2004/03/DC-2004-call.txt>

October 2004

Su	Mo	Tu	We	Th	Fr	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

CALL FOR PAPERS

DC-2004

International Conference on Dublin Core
and Metadata Applications

11-14 October 2004

Shanghai, China

<http://dc2004.library.sh.cn/>

Host: Shanghai Library
- <http://www.library.sh.cn/new-eng/>
Sponsors: Library of Chinese Academy of Sciences
- <http://www.las.ac.cn/>
National Science and Technology Library of China
- <http://www.nstl.gov.cn/>
Dublin Core Metadata Initiative
- <http://dublincore.org/>

Metadata based on standards such as Dublin Core is a key component of information environments from scientific repositories to corporate intranets and from business and publishing to education and e-government.

DC-2004 -- the fourth in a series of conferences previously held in Tokyo, Florence, and Seattle -- will examine a broad range of metadata applications, especially with a view towards improving interoperability across boundaries of language, culture, and communities of practice. Tutorials will provide an introduction to metadata for non-experts.

In conjunction with DC-2004, the Dublin Core Metadata Initiative will hold technical working-group meetings and Shanghai Library will host the 2004 Shanghai International Library Forum (<http://www.libnet.sh.cn/silf2004/>).

The Conference track of DC-2004 invites submissions of papers in the following areas:

- Conceptual models for metadata
- Interoperability among metadata systems and standards
- Enterprise metadata
- Globalization, localization, and multilinguality of metadata
- Metadata for education, e-Government, and geospatial applications
- Institutional Repositories and metadata harvesting
- Search engines and metadata
- Systems and tools for metadata applications
- Metadata for cultural heritage and long-term preservation
- Surveys, case studies, and novel activities based on metadata
- Metadata registries and registry services
- Metadata standardization
- Ontologies and Semantic Web
- Knowledge management

Paper Categories

Regular Papers (8 to 10 pages) describe original work in detail.

Short papers (2 to 4 pages) and posters describe a specific model, application, or activity in a concise format.

Author guidelines and submission details can be found at

<http://dc2004.library.sh.cn/papers/>.

All submissions will be peer-reviewed by the program committee and published both in print and electronically in the conference proceedings.

All accepted papers must be presented at the conference by at least one of their authors.

Deadlines

Paper submission	1 May 2004
Poster submission	15 May 2004
Acceptance notification	1 June 2004
Camera-ready copy due	1 July 2004

Previous Dublin Core conferences

DC-2001, Tokyo	http://www.nii.ac.jp/dc2001/
DC-2002, Florence	http://www.bncf.net/dc2002/
DC-2003, Seattle	http://dc2003.ischool.washington.edu/

Organization and chairs

Program Co-chairs	Liu Wei (Shanghai Library) Thomas Baker (Fraunhofer, Germany)
Workshop Chair	Makx Dekkers (DCMI)

Title: Use of metadata at <http://dublincore.org> - a proposal
Identifier: <http://dublincore.org/usage/meetings/2004/03/ISSUES/dublincore-org/>
Date: 2004-03-10
Author: Tom Baker

The DCMI Web site currently has metadata records for more than 700 individual items -- many of which are long-obsolete working drafts. As a result, users searching the DCMI site are presented with many irrelevant hits, and the genuinely useful resources are hard to find. Moreover, the DCMI Web site is not well integrated into the OAI world. I propose we remedy this situation by doing the following:

- 1) We create a list 50 to 100 "key" resources for which DCMI can commit to maintaining excellent metadata (see Appendix A below). DCMI would keep the short-list up-to-date and use it for periodically checking the freshness of metadata. The records for these 50 to 100 key resources would have good and exhaustive keywords, accurate dates, and abstract-length descriptions.
- 2) We delete the metadata for all other resources (or at any rate rename the *.rdf metadata files so they will not be captured in the search index).
- 3) It would seem that Web sites (like DCMI's) with small numbers of documents to expose can now do this as an "OAI Static Repository" (see Appendix B below) -- perhaps by converting the RDF metadata into the XML schema "oai_dc", concatenating the schemas in one big XML file, and making that file available to OAI Static Repository harvesters.
- 4) If we get this far and the approach works well, we should not neglect to describe this method in a small document to be posted on the DCMI Web site.

APPENDIX A: Best candidates for metadata

<http://dublincore.org/>
<http://dublincore.org/about/>
<http://dublincore.org/about/bylaws/> - doesn't exist yet
<http://dublincore.org/about/copyright/> -- no metadata yet
<http://dublincore.org/banners/>
<http://dublincore.org/dcregistry/> -- no metadata yet
<http://dublincore.org/documents/>
<http://dublincore.org/documents/dc-xml-guidelines/>
<http://dublincore.org/documents/dces/>

<http://dublincore.org/documents/dcmes-xml/>
<http://dublincore.org/documents/dcml-box/>
<http://dublincore.org/documents/dcml-dcsv/>
<http://dublincore.org/documents/dcml-ieee-mou/>
<http://dublincore.org/documents/dcml-namespace/>
<http://dublincore.org/documents/dcml-period/>
<http://dublincore.org/documents/dcml-point/>
<http://dublincore.org/documents/dcml-terms/>
<http://dublincore.org/documents/dcml-type-vocabulary/>
<http://dublincore.org/documents/dcql-html/>
<http://dublincore.org/documents/dcql-rdf-xml/>
<http://dublincore.org/documents/library-application-profile/>
<http://dublincore.org/documents/usageguide/>
<http://dublincore.org/documents/usageguide/glossary.shtml> -- separate metadata??
<http://dublincore.org/documents/usageguide/qualifiers.shtml> -- separate metadata??
<http://dublincore.org/documents/wgguidelines/>
<http://dublincore.org/groups/>
<http://dublincore.org/groups/access/>
<http://dublincore.org/groups/agents/>
<http://dublincore.org/groups/architecture/>
<http://dublincore.org/groups/citation/>
<http://dublincore.org/groups/collections/>
<http://dublincore.org/groups/corporate/>
<http://dublincore.org/groups/corporate/Seattle/>
<http://dublincore.org/groups/date/>
<http://dublincore.org/groups/education/>
<http://dublincore.org/groups/environ/>
<http://dublincore.org/groups/government/>
<http://dublincore.org/groups/guide/>
<http://dublincore.org/groups/kernel/>
<http://dublincore.org/groups/languages/>
<http://dublincore.org/groups/libraries/>
<http://dublincore.org/groups/maillinglists.shtml>
<http://dublincore.org/groups/pid/>
<http://dublincore.org/groups/preservation/>
<http://dublincore.org/groups/registry/>
<http://dublincore.org/groups/standards/>
<http://dublincore.org/groups/tools/>
<http://dublincore.org/groups/type/>
<http://dublincore.org/links/>
<http://dublincore.org/news/>
<http://dublincore.org/news/adoption/>
<http://dublincore.org/news/communications/>
<http://dublincore.org/news/communications/deliverables.shtml>
<http://dublincore.org/news/documents.shtml>

<http://dublincore.org/projects/>
<http://dublincore.org/resources/>
<http://dublincore.org/resources/faq/>
<http://dublincore.org/resources/translations/>
<http://dublincore.org/schemas/>
<http://dublincore.org/sitemap.shtml>
<http://dublincore.org/sponsors/>
<http://dublincore.org/tools/>
<http://dublincore.org/usage/>
<http://dublincore.org/usage/decisions/>
<http://dublincore.org/usage/documents/>
<http://dublincore.org/usage/documents/abstract-model/> - address does not exist yet
<http://dublincore.org/usage/documents/approval/>
<http://dublincore.org/usage/documents/criteria/>
<http://dublincore.org/usage/documents/mission/>
<http://dublincore.org/usage/documents/overview/>
<http://dublincore.org/usage/documents/principles/>
<http://dublincore.org/usage/documents/process/>
<http://dublincore.org/usage/documents/profiles/>
<http://dublincore.org/usage/documents/publications/>
<http://dublincore.org/usage/documents/vocabulary-guidelines/>
<http://dublincore.org/usage/meetings/>
<http://dublincore.org/usage/terms/>
<http://dublincore.org/usage/terms/history/>
<http://dublincore.org/workshops/>

APPENDIX B: Support for OAI Static Repositories

According to <http://www.openarchives.org/news/oaistaticrepo0301010.html>, the OAI protocol now provides:

a simple approach for exposing relatively static and small collections of metadata records through the OAI-PMH. The Static Repository approach is targeted at organizations that:

- Have metadata collections ranging in size between 1 and 5000 records;
- Can make static content available through a network-accessible Web server;
- Need a technically simpler implementation strategy compared to acting as an OAI-PMH Repository, which requires processing OAI-PMH requests.

A Static Repository is an XML file that is made accessible at a persistent URL. The XML file contains metadata

records and repository information.

A Static Repository becomes accessible via OAI-PMH through the intermediation of one Static Repository Gateway.

A Static Repository Gateway uses the metadata records and repository information, provided via XML in the Static Repository, to process the six OAI-PMH requests for access to that information.

DCMI Usage Board Meeting -- Decisions
2003-09-27/28, Seattle, Washington

Participants:

Andy Powell	Rebecca Guenther (Sunday)	Traugott Koch
Diane Hillmann	Roland Schwaenzl	Andrew Wilson
Stuart Sutton	Haruki Nagata	

Tom Baker participated for part of the meeting by telephone.
Stu Weibel participated as a guest on Sunday.

TOPIC 1. Unfinished business from Ithaca (Tom) - Saturday

General points

2 meetings a year about 6 months apart seems appropriate for UB.

Tom will consolidate unfinished business from Ithaca
and new action items from Seattle into one document for
UB actions.

Ithaca Topic 03: Documentation

Action Item 1: Makx to finalise Directorate document re
explanation and rationale for case change and post to
DCMI email lists.

Action Item 2: Tom to report back to Directorate to request
them to give the issue of case change documentation a higher
priority.

Action Item 3: Tom to ask Makx to suggest that UB take over
documentation of the case change and assign a shepherd look
after the matter.

Ithaca Topic 12: DCMI Type Working Group

Decision: Type vocabulary not to be expanded, and
implementers encouraged to develop more granular
vocabularies and expose them for others to use. This
wording to appear in:

1. Decision
2. Announcement
3. Introduction to DCMI Type Vocabulary document

Action Item 4: Tom to add to the set of term attributes
proposed definitions for "broader term" and "narrower
term". Tom will use NISO standard Z39.19 (ISO 2788)
as a source for definitions.

Action Item 5: Diane will wordsmith document for reissue
on UB list.

TOPIC 02. Abstract Model (Andy) -- Saturday

Readings

Abstract Model

-- <http://www.ukoln.ac.uk/metadata/dcmi/abstract-model/>
DCMI Grammatical Principles
-- <http://dublincore.org/usage/documents/principles/>

Action Item 6: Andy to rewrite abstract model after Architecture WG meeting at Seattle to be more generic (e.g., not specifically mention DCMI properties). Will include generic description of "dumb down", statement about relationship between "dumb down" and "simple DC". Andy will gauge feeling of WG with regard to changing simple DC to consist of 16 elements.

Issue: Notion of "core" elements to be articulated somewhere.

Issue: The meeting was unable to reach consensus about whether "dumb-down" problems with audience necessitated a change to the concept of simple DC consisting of only 15 elements. The issue needs to be articulated somewhere. A final decision depends to some extent on the degree of consensus evident in the Architecture WG meeting.

Action Item 7: Diane to remove references in "Using DC" to using a label within relation if a refinement is not being used.

Action Item 8: Andy to draft some thoughts about consequences of decision that DCSV "stretches" the DC abstract model.

Action Item 9: Tom to draft statement about differences between application profile and DCMI application profile.

Decision: General feeling of the meeting was that Abstract Model, Application Profiles document, Simple DC document, and the Grammar document should be kept separate.

TOPIC 03. DCMICite and other DCSV proposals (Andy) - Sunday

DCMICite proposal was withdrawn before the meeting. DCSV was discussed in the context of the Abstract Model.

TOPIC 04. CEN "Guidelines for DC Application Profiles" (Tom) - Saturday

Action Item 10: Tom to investigate issue of URIs and URI references further.

Issue: How to handle qualified names and the potential for confusion with XML qualified names, and deal with any other restrictions that are applied to how element and term names are documented.

Issue: Purpose of application profile will tend to drive how legacy practices are documented. Guidelines need to say that legacy practices should be described as they were implemented but commented that they are no longer in use.

Action Item 11: UB to refer issue of whether CEN should assume responsibility for DCMI document (AP Guidelines) to the Advisory Board for a decision.

UB Position: UB as noted above has some issues with the

content, however UB is concerned about the principles of ownership, maintenance and process. UB suggests it might be wise to make the document more generic rather than specifically DC based.

UB needs to consider how similar situations are dealt with in the future. In general UB agrees that there is a good opportunity here to increase contacts and cooperation with other organizations. The ramifications of such relationships have yet to be teased out more completely. The UB sees the need for a general DCMI policy about how the UB relates to external maintainers of DC documents.

TOPIC 05. "Using Dublin Core" (Diane) - Saturday

Reading:

- <http://dublincore.org/documents/2003/08/26/usageguide/>
- <http://dublincore.org/documents/2003/08/26/usageguide/glossary.shtml>

Action Item 12: Diane to change document at first paragraph after heading 1.2 by eliminating parenthetical that starts with "also", and adding something about encoding schemes.

TOPIC 06. Registration of Encoding Schemes (Traugott and Stu, as guest) - Sunday

Required reading:

- Guidelines for Vocabulary and Encoding Scheme Qualifiers,
<http://dublincore.org/usage/documents/vocabulary-guidelines/>

Note: all action items on this topic from Ithaca remain to be completed.

Decision: UB agrees that it must proceed with this proposal. In the first instance registration will be on the initiative of scheme owners (Andy's closed model). This requires that the owner does the registering using either their own URI or a DCMI assigned URI. However, where schemes have existing URIs such schemes could be registered at the request of implementers. UB will consider adopting IETF's InfoURI if and when this is finalised. UB to aim for implementation of the registry by 1 January 2004.

Action Item 13: Traugott to draft document setting out guidelines for the creation of URIs for encoding schemes.

Action Item 14: Tom to remind Stu to seek advice from OCLC lawyers regarding legal issues surrounding encoding scheme registration.

Action Item 15: Questions to be posed to Harry, as part of request for updates and changes, regarding authentication and whether existing authentication facility is robust enough.

TOPIC 07. Libraries profile (Rebecca) - Sunday

A brief report should identify any further actions that

may need to be undertaken by Usage Board in support of the Library Application Profile. In particular, the ISO8601 and AAT decisions from Ithaca need to be finalized. Rebecca can perhaps bring enough copies of the latest text of ISO8601 and AAT to pass around.

In addition, we should perhaps consider, in light of the CEN Guidelines, how we might go about formally reviewing the Libraries profile -- possibly even at the next meeting. I have not included a copy of the Libraries profile in the packet because of its length; the text was included in the supplementary packet for Ithaca.

Vote: UB approves SICI conditionally. If the IETF InfoURI proposal is accepted SICI will be encoded as a URI and UB approval for SICI as an encoding scheme is unnecessary. If this is the case the vote becomes redundant

Ayes: 8
Noes: -
(Unanimous)

Vote: UB approves DOI conditionally. If the IETF InfoURI proposal is accepted DOI will be encoded as a URI and UB approval for DOI as an encoding scheme is unnecessary. If this is the case the vote becomes redundant

Ayes: 8
Noes: -
(Unanimous)

Decision: Rebecca will consult with Andy as to proper URI identification of the Marc GAC and MARC Country Codes schemes. They will both live in a LC namespace.

TOPIC 08. MARC Relator Terms as Refinements for Contributor (Rebecca) - Sunday

Required reading:

- Assignment of URIs to metadata terms of MARC 21 - Action plan
<http://dublincore.org/usage/meetings/2003/06/MARC-URIs.pdf>
- Excerpts from the RDF schema declaring the MARC Relator terms
<http://dublincore.org/usage/meetings/2003/06/Relator-excerpts-rdfxml.html>

Action Item 16: Rebecca and Diane to prepare stand-alone document describing how MARC relator terms can be used in DC metadata descriptions. Andy will review the draft for technical correctness. Diane to use this as the basis for adding text to "Using Dublin Core" describing how to use MARC relator terms.

TOPIC 09. AskDCMI (Stuart and Diane) - Saturday

Required viewing:

- <http://askdcmi.askvrd.org/>

Required reading:

- <http://dublincore.org/usage/meetings/2003/06/AskDCMI.html>
- http://askdcmi.askvrd.org/services/askdcmi/expert_tips.asp

Action Item 17: Diane to seek to enrol other people as AskDCMI experts. Other UB members are encouraged to do the same.

TOPIC 10. Proposal from DCMI Type Working Group for "Image" (Diane)

Dealt with under Topic 1.

TOPIC 11. Creative Commons proposal (Andrew and Stu, as guest) -- Sunday

Stu has been working with Eric Miller and with Andy on a proposal for handling references to Creative Commons licenses with dc:rights. Prior to the meeting he will circulate a text. The UB will not be in a position to vote on this, as it will not have been out for comment for the required four weeks, but we should be able to provide some useful feedback, especially in light of the Abstract Model discussion.

Andrew, who will shepherd this proposal at the next meeting, will report on Creative Commons' own attempts to encode basic rights information, as well as efforts underway in the METS context.

TOPIC 12. Usage Board recruitment (Stu)

Action Item 18: Diane to draft document setting out relationship and reciprocal expectations between Affiliates and UB.

OTHER BUSINESS

Other Business: Case in DCMI namespace and term declarations

Action Item 19: Andy to shepherd the case change proposal through UB for eventual issue as a DCMI recommendation.

Next Meeting of UB: proposed that UKOLN host next meeting in Bath in March 2004.

Action Item 20: Andy to check that this will be acceptable to UKOLN and advise Tom.

Action Item 21: Tom to negotiate date for meeting with UB members. Agreed that meeting be held either Friday + Saturday or Sunday + Monday.

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Title:

DCMI Usage Board (UB) Administrative Processes

Creator: Diane I. Hillmann, dih1@cornell.edu
Stuart A. Sutton, sasutton@u.washington.edu**Date Issued:** 2003-02-07**Identifier:** <http://dublincore.org/usage/documents/2003/02/07/process/>**Replaces:** <http://dublincore.org/usage/documents/2002/10/04/process/>**Is Replaced By:** Not Applicable**Latest version:** <http://www.dublincore.org/usage/documents/process/>**Description of document:** This document describes the process by which the DCMI Usage Board reaches decisions on terms and application profiles, as well as its process for managing the registration of encoding schemes.

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Part 1–Usage Board: Overview, Meetings, Documentation

1. Usage Board Membership [\[top\]](#)

- 1.1.**The UB will consist of at least seven and no more than eleven people (nine is ideal) appointed by the DCMI Directorate.
- 1.2.**Usage Board member terms shall be for two years, renewable once. Initial appointments will be made so as to stagger terms.
- 1.3.**Members should be selected based on the following criteria:
 - 1.3.1.**Knowledgeable concerning the development history and purpose of the DC element set and its relationship to the metadata world at large;
 - 1.3.2.**Related to a metadata community relevant to DCMI;
 - 1.3.3.**Willing and able to commit time and energy to the functions of the UB;
 - 1.3.4.**Able to communicate verbally and in writing in English well enough to prepare documents and discuss complex issues in a group setting;
 - 1.3.5.**Geographic and domain distribution of members is relevant but will not override other criteria.
- 1.4.**The UB Chair will be appointed from one of the membership by the DCMI Directorate. The term of the chair shall be for two years, renewable once.
- 1.5.**For internal communication the UB uses the closed mailing list dc-usage@jiscmail.ac.uk. The messages are archived and publicly available at <http://www.jiscmail.ac.uk/lists/dc-usage.html>.

2. Meetings [\[top\]](#)

2.1.Scheduling

- 2.1.1.**Meetings should be held at least twice a year.
 - 2.1.1.1.**One meeting should be scheduled during the annual DC general workshop/conference.
 - 2.1.1.2.**The second should be scheduled at a different time of the year, preferably close to other conferences, so as to make attendance convenient for as many members as possible.
 - 2.1.1.3.**Scheduling should be done far enough in advance so that as many members as possible may be present.

2.2.Funding for meetings should be supported as much as possible by DCMI.

2.3.Meeting agenda

- 2.3.1.**The UB Chair maintains the agenda, which cites links to relevant supporting documentation, including JISCMAIL postings.
- 2.3.2.**All materials pointed to in the agenda are archived at <http://dublincore.org/usage/meetings/> after the final pre-meeting version of the agenda has been distributed. After the meeting, the archive version of the agenda is edited to point to these archive copies.

2.4. Attendance by members

2.4.1.Members must attend at least one meeting in a given year to maintain membership in good standing.

2.4.2.Members who miss two meetings in succession may be replaced by the DC Directorate.

2.5.Attendance by others

2.5.1.Attendance at UB meetings by other than the UB is by invitation.

2.5.1.1.People interested in attending should request an invitation via the UB Chair or the Managing Director.

2.5.2.Participation in discussion of proposals by any interested parties is encouraged.

2.6.Agenda preparation and distribution

2.6.1.The UB chair is responsible for preparing the meeting agendas and assigning shepherds to proposals.

2.6.2.Agenda items shall include the name and email address of the UB member responsible for shepherding the proposal through the UB process.

2.6.3.Agendas shall be available at <http://www.dublincore.org/usage/meetings/> a few weeks before the meeting.

2.7.Important decisions will be assigned a number for citation purposes and documented on the DCMI website.

3. Categories of Usage Board Decisions [\[top\]](#)

3.1.*Recommended*:Elements, Element Refinements, and DCMI-maintained Vocabulary Terms (e.g., member terms of the DCMI Type Vocabulary) useful for resource discovery across domains.

3.2.*Conforming*:Elements, Element Refinements and Application Profiles may be assigned a status of conforming. Elements and Element Refinements assigned a status of conforming are those for which an implementation community has a demonstrated need and which conform to the grammar of Elements and Element Refinements, though without necessarily meeting the stricter criteria of usefulness across domains or usefulness for resource discovery.

3.3.*Obsolete*:For Elements and Element Refinements that have been superseded, deprecated, or rendered obsolete. Such terms will remain in the registry for use in interpreting legacy metadata.

3.4.*Registered*:Used for Vocabulary Encoding Schemes and language translations for which the DCMI provides information but not necessarily a specific recommendation.

Part 2—Proposals: Form and Process

4. Proposals for Terms [\[top\]](#)

4.1.Sources of proposals

4.1.1.DCMI working groups**4.1.1.1.Existing working groups****4.1.1.2.Working groups established for the purpose of developing proposals****4.1.2.Metadata implementers****4.1.3.UB itself****4.2.Requirements for proposals for "Recommended" and "Conforming" status****4.2.1.To be supplied by the proposers (see table below):*****Proposal Requirements Table***

Name	A suggested unique token for use in encodings
Label	A suggested human-readable label for the proposed term
Definition	The definition of the term
Comment	Information concerning the possible application of the proposed term
Examples	Examples of use of the proposed term, making clear what type of literal values are expected
Type of term	Is the proposed term an "element," or an "element refinement" (as defined in http://dublincore.org/usage/documents/principles) [NOTE: Encoding schemes are registered using a separate process]
Term qualified	If the proposed term is an element refinement, which term does it qualify?
Why needed	A justification of the need for the proposed term
Working Group support	Demonstration and documentation that the proposed new term has substantial support of Working Group members. Evidence of such support can include votes held on mailing lists or in face-to-face meetings or positive endorsements from members of the DC-GENERAL mailing list.
Proposed status	Is the term proposed as Recommended or Conforming?
Related DCMI terms	A discussion of possible overlap with existing terms
Related non-DCMI terms	An annotated listing of related terms in non-DCMI metadata vocabularies
Impact on applications	An annotated listing of existing applications that could be affected by recognition of this term

About the proposers	A pointer to a description, in standard form (to be specified) of the working group or organization putting forward the proposal: its scope, aims, a brief history, current status, and a pointer to archives
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4.2.2.To be supplied by the UB shepherd:**4.2.2.1.** A summary history of the post-announcement discussion

4.3.Guidelines: The following criteria are offered as guidelines for developing a proposal -- they reflect criteria that the Usage Board will use in its decision-making. They do not constitute further requirements for the formal documentation of a proposal.

4.3.1.Criteria for evaluating a term proposal**4.3.1.1.**Clarity**4.3.1.1.1.**Can the term be clearly defined?**4.3.1.1.2.**Can the semantics of the proposed element or element refinement be expressed precisely, unambiguously, and briefly?**4.3.1.2.**Practicality**4.3.1.2.1.**Is the term practical?**4.3.1.2.2.**How difficult would it be for people creating metadata to comprehend the semantics of the proposed element or element refinement and to apply it reasonably in the description of resources?**4.3.1.3.**Placement**4.3.1.3.1.**Does the term refine an existing element?**4.3.1.3.2.**If the proposed term is an element, can it reasonably be handled as effectively as an element refinement or encoding scheme for an existing element?**4.3.1.3.3.**Are there alternative ways of implementing the term? Within the conceptual framework of the Dublin Core Element Set (i.e., element/element refinements and encoding schemes), are there alternative ways to achieve the ends sought?**4.3.1.4.**Needs**4.3.1.4.1.**Is there a clear requirement in existing implementations for the term in support of resource discovery?**4.3.1.4.2.**Is there a demonstrated need for the proposed element or element refinement?**4.3.1.4.3.**Are there existing implementations or encoding schemes, etc., which use the term?**4.3.1.5.**Fits with other DCMI-maintained terms**4.3.1.5.1.**Follows existing principles of refinement**4.3.1.5.2.**Is well-formed**4.3.1.5.3.**Does not conflict with or create ambiguity with regard to existing DCMI-maintained terms**4.3.1.5.4.**Does not create problems for existing legacy implementations if

those implementations have followed recommended practice

4.4. Decision tree for assessing the need for a new term

Decision Tree Table

Condition 1:	Can the need be solved with a vocabulary encoding scheme for an existing DCMI Element or Element Refinement?	If so, do that; else ...
Condition 2:	Can the need be solved through an application profile that references an element or element refinement from an existing and recognized non-DCMI namespace?	If so, do that; else ...
Condition 3:	Can the need be solved with a new refinement for an existing DCMI element?	If so, do that; else ...
Condition 4:	Create a new DCMI Element (and, if necessary, Element and Vocabulary Encoding Scheme) to meet the need.	

4.5. Process for Moving Proposals

4.5.1. Pre-announcement process

4.5.1.1. Proposal is received by DCMI Managing Director or UB Chair.

4.5.1.2. Proposal is given preliminary review for completeness by DCMI Managing Director and UB Chair.

4.5.1.3. If complete and no revisions needed, proposal is circulated to UB members and announced for public comment by the Managing Director. A period of two weeks will be allowed between the date of the decision on completeness and the public announcement of the proposal to provide time for preparation of the supporting materials for public dissemination.

4.5.1.4. If incomplete or revisions needed, proposal is returned to originator, with request for revision or additional information.

4.5.2. Announcements

4.5.2.1. Announcements of comment period for proposals to be discussed by the UB shall be made on the DC-General list and other relevant lists.

4.5.2.2. Announcements of proposals shall be made by the DCMI Managing Director.

4.5.2.3. Announcements will include:

4.5.2.3.1. Links to relevant information to be considered with the proposal

4.5.2.3.2. Relevant deadlines for comments

4.5.2.3.3. Addresses for comment submission

4.5.2.3.4. Information about UB meeting at which the proposal will be

discussed, including place, time, and how to request an invitation to participate

4.5.2.3.5. Name and contact information for the assigned shepherd

4.5.3. Communication Responsibility Table

Communication Responsibility Table

What	Where	Who	Comment
Proposal draft posted	WG list, DC-General	WG Chair	
Proposal added to UB agenda	UB Website, UB list	UB Chair	
Proposal announced for public comment	DC-General	DCMI Managing Director	
Usage Board Outcome	DC-General	DCMI Managing Director	

4.5.4. Shepherds

4.5.4.1. Each proposal shall be assigned a shepherd by the UB chair from among the UB membership.

4.5.4.2. Shepherds should have knowledge of the proposal issues or be connected to the WG originating the proposal.

4.5.4.3. Responsibilities

4.5.4.3.1. Monitor discussion on relevant lists (shepherds should be members of the relevant DC WG list during the time of consideration of a proposal).

4.5.4.3.2. Summarize the comment period discussion and points of contention of the proposal for the UB, either verbally at the meeting or in writing prior to the meeting (preferred).

4.5.4.3.3. Serve as liaison to the relevant WG or community during the time the proposal is under discussion and after a decision has been made.

4.5.4.3.4. Verify registration information for the DCMI Web Team.

4.5.4.3.5. Prepare draft of UB official decision on the proposal for review and approval by the UB.

4.5.5. Comment period

4.5.5.1. Comment period on proposals should be managed on the DC-General list.

4.5.5.2. Comment periods should be at least one month in length and commence at least six weeks before the UB meeting at which action is to be taken.

4.5.5.3. Public discussions of UB related issues during public comment periods should take place on DC-General or other working group mailing lists as specified in the announcement. The public discussion must start at least six weeks before the

UB meeting at which the issues will be discussed.

4.5.6.Voting

4.5.6.1.Voting shall be limited to scheduled meetings and conference calls.

4.5.6.2.Voting shall be limited to UB members present at the meeting or conference call and able to participate in the discussion.

4.5.6.3.UB members who cannot be present may present their arguments for or against a proposal in writing prior to a meeting (this shall not constitute a vote).

4.5.6.4.UB members who cannot be present may explore other options with the chair, if they cannot be present for an important vote. In all cases, a vote may not be cast by a member who is not present, either physically or virtually, for the relevant discussion.

4.5.6.5.A proposal is approved if no more than one UB member objects to a proposal.

4.6.Decisions of the UB are forwarded to the DCMI Directorate for endorsement and approval.

4.7.Registration of UB Decisions on Proposals

4.7.1.A document explaining the UB decision regarding a proposal will be written in a timely fashion by the shepherd and approved by the UB.

4.7.1.1.The decision will include brief statements of recommendations being issued and detailed explanations of UB decisions not to issue recommendations.

4.7.1.2.UB decisions will be in a form determined by the UB and numbered consecutively for the purpose of citation.

4.7.1.3.The DCMI Web Team will publish UB decisions in the Documents section of the DCMI Web site in a category named DCMI Usage Board Decisions.

4.7.2.Recommended terms will be put into the official DCMI documentation by the UB Chair.

5. Proposals for Registration of Encoding Schemes [\[top\]](#)

5.1.Submissions of new encoding schemes will be received on the UB list via a Web form

5.2.UB members will "claim" responsibility to shepherd submissions based on:

5.2.1.Their knowledge of a particular scheme

5.2.2.Their knowledge of the language used in the scheme

5.2.3.Their interest or knowledge of a particular subject or topical area covered by the scheme

5.2.4.The time they have available for such tasks

5.3. Submissions unclaimed after one week will be assigned to a UB member by the chair.

5.4.The UB chair will not shepherd individual submissions, but will keep track of submissions and ensure that all are resolved in some manner.

5.5.The shepherd will be responsible for verifying the submitted information:

5.5.1.Name of the scheme

5.5.2.Availability and maintenance status

5.5.3.Appropriateness of the maintenance agency

5.5.4.Uniqueness and appropriateness of the proposed token**5.5.5.**Possible use with elements not specified in the proposal

5.6.If necessary, the shepherd will initiate contact with the maintenance agency in the case of questions or concerns about the status of the scheme, the proposed token, or to clarify the submission.

5.7.The shepherd will edit the submission and complete the registration process by submitting the information to the DCMI Web Team.

5.8.The DCMI Web Team will report to the UB list when registration has been completed.

5.9.The UB chair will prepare a monthly report of all new schemes.

5.10.Communication Responsibility Table*Communication Responsibility Table*

What	Where	Who	Comment
Scheme submission	UB List	Shepherd Submission Tool	
Scheme registration	UB List	Sheperd Submission Tool	Shepherd may announce to relevant list
Digest of scheme registrations	DC-General	UB-Chair	To be automated by DCMI Web Team

6. Proposals for Registration of Application Profiles [\[top\]](#)**6.1.**Sources of proposals**6.1.1.**DCMI working groups**6.1.1.1.**Existing working groups**6.1.1.2.**Working groups established for the purpose of developing proposals**6.1.2.**Metadata implementers**6.1.3.**UB itself**6.2.** For the purposes of review by the Usage Board:

6.2.1.The Usage Board is interested in reviewing application profiles that make substantial use of Dublin Core elements. The review of application profiles by the Usage Board serves to:

6.2.1.1.analyze the usage of Dublin Core within significant implementations;

6.2.1.2.assign a DCMI stamp of approval;

6.2.1.3.promote the sharing of application profiles between communities; and

6.2.1.4.identify new terms as candidates for inclusion in DCMI namespaces.

6.2.2.Application profiles must provide, for each term, an identifier of the element set where it is defined, ideally in the form of URIs for individual terms.

6.2.3. If the terms in an application profile describe anything other than generic "resources" (the typical domain of Dublin Core), the application profile must make this clear. This is particularly important if an application profile is based on a data model that describes multiple classes of resources, such as agents or collections.

6.2.4. It is recommended that application profiles be prepared using previously reviewed application profiles as models for their layout, appearance, and content. Aside from the required term and element set identifiers, there are no particular constraints on the types of documentation -- local definitions, comments, constraints, or technical notes -- that may be associated with a term.

6.2.5. Each application profile must provide, or point to, a short text that describes:

6.2.5.1. The context and purposes in which the application profile is used or is likely to be used.

6.2.5.2. The organizations or individuals involved in its development and a capsule history thereof.

6.2.5.3. Any arrangements, policies, or intentions regarding the future development and maintenance of the application profile.

6.3. Review of Application Profiles by the Usage Board

6.3.1. An application profile is "well-formed" if it is presented in accordance with the broad and flexible requirements outlined above. These presentation requirements may become more specific as "good practice" emerges over time.

6.3.2. Usage Board review focuses on the use of terms related to Dublin Core terms and on any data models that provide a context for those terms. The Usage Board is agnostic about the use of terms not directly related to Dublin Core; strictly speaking such terms are outside the scope of Usage Board review.

6.3.3. The use of terms related to Dublin Core (such as refinements of Dublin Core elements, or Dublin Core elements that have been constrained for particular contexts) will be evaluated from the standpoint of semantic conformance, grammatical principle (eg, "dumb-down"), clarity, and good practice.

6.4. Publication and use of Usage Board Reviews

6.4.1. An application profiles that "pass" review will be assigned the status of 'conforming'.

6.4.2. For application profiles that "pass" review, the Usage Board will publish a Review on a Web page for application profiles.

6.4.3. Each Review will include, at a minimum:

6.4.3.1. Any comments from the Usage Board on the application profile.

6.4.3.2. Pointers to locally archived copies of the application profile as originally submitted and (if necessary) as subsequently amended in light of Usage Board comments.

6.4.3.3. A pointer to the "latest version" of an application profile held by its maintainers.

6.5. Review represents a form of recognition, and its URL will be persistent for purposes of citation.