

## **American West Project Baseline Metadata Requirements DRAFT: Last Updated 2005-02-04**

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This document outlines the basic requirements for OAI metadata harvested from partner institutions in the American West Project. It rationalizes metadata needs based on anticipated service requirements for the American West Project web portal, and is intended primarily to facilitate discussions between partner institutions and project staff at CDL. The goal in promulgating these baseline metadata requirements for the project is to improve metadata prior to harvesting based primarily on adjusting routines and processes by which partner institutions prepare their OAI-PMH sets (e.g., map metadata from the system(s) in which they manage their digital assets to OAI records, which are usually grouped into one or more sets to be exposed for harvesting by OAI service providers).

This document provides mappings of each of the generic data fields into unqualified Dublin Core (DC), but strongly supports the assertion that unqualified DC is not very useful for OAI-PMH service providers because it doesn't provide enough granularity of information about the metadata exposed to support analysis in support of building services for end users of the harvested metadata.<sup>1</sup> For the purposes of the harvesting activities undertaken for the American West Project, CDL would prefer that its American West partners expose for harvesting a richer metadata format, such as MODS. This document suggests appropriate mappings for several metadata schemas that might be exposed in addition to the OAI-PMH-required unqualified DC.

This document consists of two parts:

- Part 1. Object-level Metadata Requirements
- Part 2. Metadata Guidelines for Useful OAI-PMH Set Descriptions

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<sup>1</sup> See Tennant, Roy, *Bitter harvest: problems and suggested solutions for OAI-PMH data and service providers* (2004), available online at [http://www.cdlib.org/inside/projects/harvesting/bitter\\_harvest.html](http://www.cdlib.org/inside/projects/harvesting/bitter_harvest.html).

## ◆ Part 1. Object-level Metadata Requirements:

General preferences<sup>2</sup>:

- Map individually articulated fields into individual Dublin Core metadata fields; do not pack multiple element values into a single DC field. If value packing is the only option in mapping to oai\_dc, please use a semi-colon (;) consistently as a means of separating individual instances of that element so that we can unpack them consistently.

*Example:*

**Map**

650 0 Modern dance |zUnited States  
650 0 Choreographv |zUnited States

**To**

<dc:subject>Modern dance -- United States</dc:subject>  
<dc:subject>Choreography -- United States</dc:subject>

**Not**

<dc:subject>Modern dance – United States; Choreography – United States</dc:subject>

- When it is possible to provide them, encodings that preserve precoordinated topical and geographic coverage strings are preferred over those that don't explicitly preserve the authority for it and the coordination and order of the elements of the string.

*Example:*

*Unqualified DC*

**Prefer** <coverage>United States -- Colorado -- Denver</coverage>

**To** <coverage>United States</coverage>  
<coverage>Colorado</coverage>  
<coverage>Denver</coverage>

*MODS*

**Prefer** <subject authority="tgn">  
<hierarchicalGeographic>  
<continent>North and Central America</continent>  
<country>United States</country>  
<state>Utah</state>  
<area>Great Salt Lake</area>  
</hierarchicalGeographic>  
</subject>

**To** <subject>  
<geographic>North and Central America</geographic>  
<geographic>United States</geographic>  
<geographic>Utah</geographic>  
<geographic>Great Salt Lake</geographic>  
</subject>

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<sup>2</sup> The RLG *Descriptive metadata guidelines for RLG Cultural Materials* (2005), p. 8, provides excellent general metadata guidelines for those contributing content to consortial metadata efforts built around provision of services to end users. These guidelines are available online at [http://www.rlg.org/en/pdfs/RLG\\_desc\\_metadata.pdf](http://www.rlg.org/en/pdfs/RLG_desc_metadata.pdf).

PART 1. OBJECT-LEVEL METADATA REQUIREMENTS				
INFORMATION NEEDED (GENERIC DATA FIELDS)	DISCUSSION OF REASONS NEEDED	CONTENT STANDARDS PREFERRED	UNQUALIFIED DC FIELD IF ONLY EXPOSING OAI_DC	POSSIBLE FIELDS FROM WHICH THIS COULD BE MAPPED OR DELIVERED IN OTHER DATA STRUCTURES
<b>Title</b>	<ul style="list-style-type: none"> <li>Required for formulating an on-the-fly citation for end users.</li> </ul> <p><i>Special notes:</i></p> <ul style="list-style-type: none"> <li>A title should be supplied using an available content standard (e.g., DACS or AACR2) when one is not available for transcription from the item.</li> </ul>	<ul style="list-style-type: none"> <li>AACR2</li> <li>DACS</li> <li>Graphic Materials</li> <li>CCO</li> </ul>	<title>	<ul style="list-style-type: none"> <li>MARC: 210, 222, 240, 242, 243, 245, 246, 247</li> <li>EAD: &lt;unittitle&gt;</li> <li>MODS: &lt;titleInfo&gt; &lt;title&gt;</li> </ul>
<b>Creator of the original material</b>	<ul style="list-style-type: none"> <li>Required, when known, in order to formulate an on-the-fly citation for end users.</li> </ul>	<ul style="list-style-type: none"> <li>AACR2</li> </ul>	<creator>	<ul style="list-style-type: none"> <li>MARC: 100, 110, 111 700, 710, 711, 720</li> <li>EAD: &lt;origination&gt; &lt;persname source=""&gt; &lt;famname source=""&gt; &lt;corpname source=""&gt; &lt;controlaccess&gt;<sup>3</sup> &lt;persname source=""&gt; &lt;famname source=""&gt; &lt;corpname source=""&gt;</li> <li>MODS: &lt;name type="" authority=""&gt; &lt;namePart&gt; &lt;role&gt;</li> </ul>

<sup>3</sup> In EAD, these <controlaccess> <...name> subelements should only be mapped to <dc:creator> when they do not include a role="subject" (e.g., <persname role="subject">) attribute indicating that their relationship to the resource is topical rather than as creator.

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<b>Date of creation of the original resource</b>	<ul style="list-style-type: none"> <li>Required to facilitate insertion of 4 era fields<sup>4</sup> to support a chronological browse.</li> <li>Required to facilitate a user-defined advanced search interface limit by date (or date range) of creation of original material.</li> <li>Required as a keyword searchable field.</li> <li>Required to facilitate on-the-fly citation construction for end users.</li> </ul> <p><i>Special notes:</i></p> <ul style="list-style-type: none"> <li><i>The date of creation of the digital file is not needed by the OAI service provider and, if included in the OAI record, should ideally be unambiguously identified in some way.</i></li> <li><i>If 2+ date fields are included in an OAI record, CDL will have to assume, for the purposes of metadata normalization, that the chronologically earliest date represents the date of creation of the original resource.</i></li> <li><i>OAI service providers will need to normalize dates in order to index them for searching. For the purposes of the American West Project, dates will likely only be normalized to the 4-digit year.</i></li> </ul>	<ul style="list-style-type: none"> <li>AACR2</li> <li>ISO 8601</li> </ul>	<p>&lt;date.created&gt; (qualified DC)</p> <p><i>Note: If unqualified Dublin Core (&lt;date&gt;) is the only option for delivering OAI data for harvest, it is preferable just to include the date of creation, and not the date of digitization of the object, or other dates not essential for the end user.</i></p>	<ul style="list-style-type: none"> <li>MARC: 245 \$f or 260 \$c or Control field 008 bytes 7-14 (note that mapping from field 008 will not capture the notion of uncertain dates (e.g., circa) in the unambiguous way that either of the other two choices above can.)</li> <li>EAD: &lt;unitdate normal="[ISO8601 version]"&gt;</li> <li>MODS &lt;originInfo&gt; &lt;dateCreated&gt;[textual expression of single date]&lt;/dateCreated&gt; &lt;dateCreated&gt; encoding="iso8601"&gt;[ISO8601 form of date] &lt;/dateCreated&gt;<sup>5</sup></li> </ul>

<sup>4</sup> Eras: -1800; 1801-1890; 1891-1940; 1941- , as proposed in Geneva Gano's analysis of the proposed American West collection in Oct., 2004.

<sup>5</sup> See MODS example for date encoding in Part 2 of this document for information on how to encode ISO8601 form of date ranges.

PART I. OBJECT-LEVEL METADATA REQUIREMENTS				
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<b>Repository name</b>	<ul style="list-style-type: none"> <li>Required in order to formulate an on-the-fly citation for end users.</li> </ul>	<ul style="list-style-type: none"> <li>AACR2</li> </ul>	<publisher>	<ul style="list-style-type: none"> <li>MARC: 852</li> <li>EAD: &lt;repository&gt;</li> <li>MODS: &lt;location&gt; &lt;physicalLocation&gt;</li> </ul>
<b>Format or genre of the original material</b>	<ul style="list-style-type: none"> <li>Required to support a browse by genre of material via pull-down menus.</li> <li>Required to support an advanced search interface limit via a pull-down menu.</li> <li>Required as a keyword-searchable field.</li> </ul>	<ul style="list-style-type: none"> <li>DCMI Type Vocabulary<sup>6</sup></li> <li>AAT</li> <li>TGM II</li> </ul>	<type> <sup>7</sup>	<ul style="list-style-type: none"> <li>MARC: 655 field 300 field (a bit less desirable since it can have so much more than just format/genre information crammed into it.)</li> <li>EAD: &lt;controlaccess&gt; &lt;genreform source=""&gt;</li> <li>MODS: &lt;genre authority=""&gt; &lt;physicalDescription&gt; &lt;form&gt;</li> </ul>

<sup>6</sup> <http://dublincore.org/documents/dcmi-type-vocabulary/>

<sup>7</sup> From a cursory analysis of the 379,913 records test harvested for American West by CDL, it looks like <type> is the field most universally used to record whatever kind of format/genre information there is about the original resource. <format> is frequently not used at all, as in records in several of the LC collections.

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<b>Geographical locations</b>	<ul style="list-style-type: none"> <li>Required to support a geographical browse, possibly via pull-down menus and/or a map-based graphical interface.</li> <li>Required to support an advanced search interface limit via a pull-down menu.</li> <li>Required as a keyword-searchable field.</li> </ul> <p><i>Special note:</i></p> <ul style="list-style-type: none"> <li><i>This includes only geographical location information that is the subject of the content of the object.</i></li> <li><i>Do not map geographical location information about where the object was produced here, unless it is an object that is not readily described topically (e.g., artifacts of everyday life, like Native American baskets)</i></li> </ul>	<ul style="list-style-type: none"> <li>TGN</li> <li>LCSH</li> </ul>	<coverage> If <i>qualified</i> DC can be exposed, map to <coverage.spatial>	<ul style="list-style-type: none"> <li>MARC: 043 field 651 field (either the entire 651 heading or just the \$a subfield.) 752 field</li> <li>EAD: &lt;controlaccess&gt; &lt;geogname&gt;</li> <li>MODS: &lt;subject authority=""&gt; &lt;geographic&gt; &lt;/subject&gt;, or &lt;subject authority=""&gt; &lt;hierarchicalGeographic&gt; &lt;/subject&gt;</li> </ul>

PART I. OBJECT-LEVEL METADATA REQUIREMENTS				
INFORMATION NEEDED (GENERIC DATA FIELDS)	DISCUSSION OF REASONS NEEDED	CONTENT STANDARDS PREFERRED	UNQUALIFIED DC FIELD IF ONLY EXPOSING OAI_DC	POSSIBLE FIELDS FROM WHICH THIS COULD BE MAPPED OR DELIVERED IN OTHER DATA STRUCTURES
<b>Subjects (Topics, people)</b>	<ul style="list-style-type: none"> <li>Required to support indirectly a topical browse based on an AmWest hierarchical taxonomy; partner-supplied topical terms would greatly assist the AmWest team at CDL in topical decomposition (clustering) activities on harvested metadata.</li> <li>Required as a keyword-searchable field.</li> </ul> <p><i>Special note:</i></p> <ul style="list-style-type: none"> <li><i>This does not include places used as subjects, for mapping of that type of information, see "Geographical locations".</i></li> </ul>	<ul style="list-style-type: none"> <li>LCSH</li> </ul>	<subject>	<ul style="list-style-type: none"> <li>MARC: 650 field</li> <li>EAD: &lt;controlaccess&gt; &lt;subject&gt; or &lt;...name role="subject"&gt;<sup>8</sup></li> <li>MODS: &lt;subject authority=""&gt; &lt;name type="" authority=""&gt; &lt;namePart&gt; &lt;/name&gt; &lt;/subject&gt; &lt;subject authority=""&gt; &lt;topic&gt; &lt;/subject&gt;</li> </ul>

<sup>8</sup> This could be <persname>, <famname>, or <corpname>, but only when these are specifically flagged as topics using the ROLE attribute with a value of "subject". When not so flagged, the assumption should be that these elements are being used to indicate the act of creation of a resource, rather than the topic of a resource. Do not map EAD's <geogname> element to dc:subject, but rather to dc:coverage.

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<b>Identifier</b>	<ul style="list-style-type: none"> <li>Required in order to formulate and on-the-fly citation for end users.</li> <li>Required in order to direct the end user from the harvested service-provider metadata to the content file(s) for the resource.</li> </ul> <p><i>Special notes:</i></p> <ul style="list-style-type: none"> <li><i>Minimum requirement for OAI service providers is a single actionable URL, preferably persistent, where the contributing institution would like the end user directed in order to retrieve the resource's content files. This ideally will <u>not</u> lead directly to the resource file (e.g., .jpg, .gif), but rather to the resource embedded in its metadata and institutional context so that the end user, directed from an OAI service provider, can access additional information about the resource and/or the owning institution.</i></li> <li><i>If an additional item identifier is provided, it should not be in the form of an actionable URL, so that OAI service providers can distinguish between them.</i></li> </ul>		<identifier>	<ul style="list-style-type: none"> <li>MARC: 856</li> <li>EAD: <i>for actionable URL:</i> N/A <i>for other item identifiers:</i> &lt;unitid&gt;</li> <li>MODS: <i>for actionable URL:</i> &lt;location&gt; &lt;url&gt; <i>for other item identifiers:</i> &lt;identifier type=""&gt;</li> </ul>
<b>Rights information</b>	<ul style="list-style-type: none"> <li>Required in order to alert user to any known use restrictions.</li> <li>In the absence of a rights information statement or URL to such a statement supplied by the data provider as part of the OAI-PMH set or object, CDL will supply a link to a web-based generic rights information statement, which will be stored in the METS wrapper and not as part of the &lt;dmdSec&gt;.</li> </ul>		<rights>	<ul style="list-style-type: none"> <li>MARC: 540</li> <li>EAD: &lt;userrestrict&gt;</li> <li>MODS: &lt;accessCondition type="useAndReproduction" xlink:href="[URL]"&gt;</li> </ul>

- Rights/Copyright statement – As a result of discussion at CDL, we propose that any textual rights information statement, or an actionable URL link to same, supplied by the data provider, either harvested or discovered on the repository's web site by a CDL

collection analyst/curator, will be stored as part of the MODS <dmdSec> in our METS objects. A URL to a generic CDL rights information page (e.g., the one developed for the Luna Insight project, available at <http://www.cdlib.org/inside/projects/image/termsofuse.html>), to be used when a no rights information is harvested or discoverable from the data provider, will be stored as part of each METS object, but in the wrapper and not as part of the <dmdSec>.

## ◆ Part 2. Metadata Guidelines for Useful OAI-PMH Set Descriptions:

- Robust set descriptions are extremely useful to OAI service providers selecting and analyzing sets for harvesting consideration.
- These guidelines for Set Descriptions are based on the exemplary set descriptions provided by the Library of Congress at [http://memory.loc.gov/cgi-bin/oai2\\_0?verb=ListSets](http://memory.loc.gov/cgi-bin/oai2_0?verb=ListSets). They are provided to encourage American West Project partners and the OAI community more broadly to supply more extensive metadata concerning sets available for harvest, which will make identification of relevant sets for harvest by OAI service providers much more straightforward.
- Most OAI Set Descriptions (<ListSets> verb responses) do not supply the <setDescription> element at all, as the OAI-PMH does not require anything beyond a <setSpec> and <setName>. CDL offers the following guidelines to its American West Project partners as a means of encouraging them to consider providing the optional, fuller <setDescription>s.
- Metadata wrapper for Set Description in OAI <ListSets> query:

```
<OAI-PMH xsi:schemaLocation="http://www.openarchives.org/OAI/2.0/http://www.openarchives.org/OAI/2.0/OAI-PMH.xsd">
  <responseDate></responseDate>
  <request verb="ListSets"></request>
  <ListSets>
    <set>
      <setSpec>[XX]</setSpec>
      <setName>[XX]</setName>
      <setDescription>
        [set description here]
      </setDescription>
    </set>
  </ListSets>
</OAI-PMH>
```

PART 2. METADATA GUIDELINES FOR USEFUL OAI-PMH SET DESCRIPTIONS					
INFORMATION NEEDED BY OAI SERVICE PROVIDERS	RLG GUIDELINES <sup>9</sup>	DC <sup>10</sup>	MODS <sup>11</sup>	RSLP <sup>12</sup>	EAD <sup>13</sup>
<b>Title of set</b>	Collection title	<title>	<titleInfo> <title>	<dc:title>	<unittitle>

<sup>9</sup> See RLG, *Descriptive metadata guidelines for RLG Cultural Materials* (2005), p. 16-21, available online at:

[http://www.rlg.org/en/pdfs/RLG\\_desc\\_metadata.pdf](http://www.rlg.org/en/pdfs/RLG_desc_metadata.pdf). These guidelines, which were vetted broadly for review by the cultural materials digitization community, are used as a point of comparison and validation for these Set Description baseline requirements. OAI set descriptions as used by many OAI-PMH data providers parallel either physical or virtual collections, so the RLG guidelines seem like a valid comparative framework.

<sup>10</sup> An unqualified Dublin Core mapping is offered here, since it is the lowest common denominator required by the OAI-PMH protocol. However, unqualified DC is less than ideal from the perspective of OAI service providers due to its lack of granularity, and we recommend that OAI data providers consider expressing their <setDescription>s in a more granular metadata encoding format.

<sup>11</sup> A MODS option for set descriptions is not offered by the OAI-PMH *Guidelines for Repository Implementers*, section 4.2 (see <http://www.openarchives.org/OAI/2.0/guidelines-repository.htm#setDescription>), probably because the availability of MODS for trial use in June 2002 coincided exactly with the current version date on the OAI-PMH repository implementer guidelines. A mapping to MODS is offered here since it represents an excellent option for encoding OAI set descriptions.

<sup>12</sup> The Research Support Libraries Programme (RSLP) Collection Description schema originated in the United Kingdom. Information is available online at: <http://www.ukoln.ac.uk/metadata/rsrp/>. Its intention is to provide guidelines and a composite schema to facilitate descriptions of collections, their locations, and actors associated with them in a "consistent and machine readable way." The RSLP collection description schema is an RDF framework composite of elements from Dublin Core (dc:), Qualified Dublin Core (dcq:), the MIMAS Collection Level Description XML DTD (cld:), available at <http://metadata.mimas.ac.uk/ITAM/mimascoll.html>, and the vCard Electronic Business Card profile (vcard:), available at <http://www.w3.org/TR/vcard-rdf>.

<sup>13</sup> Collection-level descriptions in Encoded Archival Description (EAD) are usually the first descriptive subset within the <archdesc> element. Well-encoded EAD finding aids will explicitly note the level of description using the LEVEL attribute, i.e., <archdesc level="collection">. Descriptive elements at this highest EAD level will all come prior to the opening <dsc> (Description of Subordinate Components) element in the encoded file. Further information about EAD can be found at <http://www.loc.gov/ead/>.

PART 2. METADATA GUIDELINES FOR USEFUL OAI-PMH SET DESCRIPTIONS					
INFORMATION NEEDED BY OAI SERVICE PROVIDERS	RLG GUIDELINES	DC	MODS	RSLP	EAD
<b>Institution exposing set for OAI harvesting</b>	Collection contributor	<publisher> <sup>14</sup>	<sup>15</sup> <name type="corporate" authority=""> <namePart>[name of institution] </namePart> <role> <roleTerm type="code" authority="marcrelator">ctb </roleTerm> <roleTerm type="text" authority="marcrelator">contributor </roleTerm> </role>	<cld:hasLocation> <sup>16</sup>	<publicationstmt> <publisher>

<sup>14</sup> CDL's recommendation for this element departs significantly from the set description practice of the Library of Congress, on which these guidelines are modeled. We argue that exposing OAI sets for harvesting by service providers is more akin to publishing (dc:publisher), which the DCMI element set reference description ties to "making the resource (i.e., the set) available," than it is to the act of contributing (dc:contributor), which the reference description ties to content contributions. While one might argue that the "content" of an OAI set is the digital files and metadata describing them, it seems to us that the role of an OAI data provider is much more clearly characterized by the dc:publisher element.

<sup>15</sup> This adopts the recommended collection record baseline MODS 3.0 encoding from the RLG's *Descriptive metadata guidelines for RLG Cultural Materials* (2005), p. 17. It should be noted that both MODS and MARC are very much grounded in the world of printed material, so the MARC relator term notion of "contributor" here is most definitely not parallel to the Dublin Core notion of contributor ("contribution to the contents of the resource") for online resources.

<sup>16</sup> RSLP's assumption that the physical location of the collection will always be equal to the contributor of the collection (e.g., the institution making the collection available digitally) seems problematic.

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INFORMATION NEEDED BY OAI SERVICE PROVIDERS	RLG GUIDELINES	DC	MODS	RSLP	EAD
<b>Date range<sup>17</sup> of original objects represented in set</b>	Collection date range	<date>	<originInfo> <dateCreated>[textual expression of date range]</dateCreated> <dateCreated encoding="iso8601" point="start">[start date for range]</dateCreated> <dateCreated encoding="iso8601" point="end">[end date for range]</dateCreated>	<cld:contentsDateRange>	<unitdate normal="[ISO8601 date range]">[textual expression of date range]
<b>Narrative description of set</b>	Collection narrative description	<description>	<abstract>	<dc:description>	<scopecontent> <p>
<b>Genre(s) of materials represented in set</b>	Collection work type(s)	<type>	<genre authority="">	<dc:format>	<controlaccess> <genreform source="">

<sup>17</sup> We suggest that for OAI service provider needs (who after all are the intended consumers of OAI set descriptions), in most cases, expressing set-level dates in terms of range of years only (e.g., 1876-1890) is good enough.

PART 2. METADATA GUIDELINES FOR USEFUL OAI-PMH SET DESCRIPTIONS					
INFORMATION NEEDED BY OAI SERVICE PROVIDERS	RLG GUIDELINES	DC	MODS	RSLP	EAD
<b>Subject(s) (topics, people) of materials represented in set</b>	Collection subjects (topics, people)	<subject>	<subject authority=""> <topic> </subject> <subject authority=""> <name type="" authority=""> <namePart> </name> </subject>	<dc:subject> <cdl:agentName> <sup>18</sup> (for personal or corporate names used as subjects)	<controlaccess> <subject source=""> <persname role="subject" source=""> <corpname role="subject" source="">
<b>Geographical locations that are depicted by, are subjects of, or indicate place of creation and use of (e.g., Native American artifacts) materials represented in set</b>	Collection subjects (places)	<coverage>	<subject authority=""> <geographic> </subject> <subject authority=""> <hierarchicalGeographic> </subject>	<dcq:spatial>	<controlaccess> <geogname role="coverage" source="">
<b>Publicly accessible web portal in which all or a substantial part of the set may be accessed, if available</b>	Not a base-line field in RLG guidelines (based on assumptions of the function of RLG's Cultural Materials web portal)	<relation>	<relatedItem type="host"> <titleInfo> <title></title> </titleInfo> <identifier type="uri">[URL] </identifier>	<cld:hasLocation>	<otherfindaid> <p>[For textual information about the site]</p> <extptr href="[URL]">

<sup>18</sup> One potentially fatal weakness of many data structure standards, illustrated quite well by the RSLP definition for this element, is the failure of the standard to provide a means of articulating in the encoding the type of association between an personal or corporate name and the thing being described, i.e., is the association one of creation or is it topical. This information is critical if OAI service providers are to build services on top of OAI-harvested metadata that are actually useful to end users.

PART 2. METADATA GUIDELINES FOR USEFUL OAI-PMH SET DESCRIPTIONS					
INFORMATION NEEDED BY OAI SERVICE PROVIDERS	RLG GUIDELINES	DC	MODS	RSLP	EAD
<b>Rights information for objects comprising set</b>	Not a base-line field in RLG guidelines (based on assumptions of the function of RLG's Cultural Materials web portal)	<rights>	<accessCondition type="useAndReproduction"> [For textual rights information] </accessCondition> <accessCondition type="useAndReproduction" xlink:href="[URL]"> [If also referencing a web page containing rights information] </accessCondition>	<cld:legalStatus>	<userrestrict> <p>[For textual rights information] <extptr href="[URL]">[if referencing a web page containing rights information for the set] </p>