



Digital Library Federation / Aquifer Implementation Guidelines for Shareable MODS Records

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**Prepared by the
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Digital Library Federation / Aquifer Implementation Guidelines for Shareable MODS Records

Introduction

The primary goal of the Digital Library Federation's Aquifer Initiative is to enable distributed content to be used effectively by libraries and scholars for teaching, learning, and research. The provision of rich, shareable metadata for this distributed content is an important step towards this goal.

To this end, the Metadata Working Group of the DLF Aquifer Initiative has developed a set of implementation guidelines of the Metadata Object Description Schema¹ (MODS) specifically for use in describing digital cultural heritage and humanities-based scholarly resources that are to be shared within the Aquifer Initiative and beyond.

The authors of the implementation guidelines are aware that the requirements and recommendations set forth here are not currently met by most current and potential Aquifer participants. However, we developed these as a set of guidelines for creating rich, shareable metadata that is coherent and consistent, and, thus, useful to aggregators and end users. We do not intend these guidelines to dictate local metadata practices, but we do hope that these guidelines will help Aquifer participants share metadata among themselves and with other institutions.

The joint DLF and NSDL *Best Practices for Shareable Metadata*² document provides overall guidance on interoperability of metadata. We recommend that metadata authors be familiar with these best practices in addition to the implementation guidelines presented here.

Other guiding principles and conditions that have informed the DLF MODS Implementation Guidelines are:

- They are currently based on the MODS Schema version 3.2.
- The resources to be described are digital (either born digital or digitized from analog originals) cultural heritage and humanities-based materials in keeping with the Aquifer collection focus on American life and culture.
- Keeping in mind the needs of end users and aggregators, these guidelines seek to provide as simple a structure as possible for presenting metadata. They recommend that metadata about content and digital and analog carriers all appear in the main record. The guidelines try to make clear how an aggregator might use the metadata in services for end users and make recommendations for the inclusion or exclusion of information based on that use.
- The guidelines are specifically meant for metadata that will be shared with others (whether through the Open Archives Initiative Protocol for Metadata Harvesting

¹ <http://www.loc.gov/standards/mods/>

² <http://oai-best.comm.nsd.org/cgi-bin/wiki.pl?PublicTOC>

(OAI-PMH) or some other means), and, as such, is focused on how to derive metadata that will make sense and be useful outside of its local context.

- Because the first phase of the Aquifer Initiative is focused on using the OAI PMH to aggregate metadata, suggested mappings from MODS to simple Dublin Core have been provided. However, this is only to assist participants in meeting the simple Dublin Core requirement of the OAI protocol, and is not a recommendation to provide simple Dublin Core as the primary metadata format.

Included in these guidelines are a general overview of requirements and recommendations, advice concerning the attributes common to all MODS elements, discussions of each element in the MODS 3.2 Schema, and eight full examples of MODS records that meet these guidelines. Each element discussion includes:

- A list of the element's attributes and subelements, where applicable;
- A summary of the guidelines requirements;
- The element definition from the MODS User Guidelines³;
- A discussion of use, including requirements and recommendations, for the element, subelements, and attributes (except those that are common to all MODS elements);
- A discussion of how elements may be used by aggregators;
- Example(s) of the elements that illustrate, at minimum, usage required by the guidelines;
- Suggested mappings to simple Dublin Core⁴; and
- Reference to further discussion, if any, in the *DLF/NSDL Best Practices for Shareable Metadata* document.

These guidelines follow the language of RFC2119⁵ in expressing requirements and recommendations for MODS encoding practices. These are as follows:

- "REQUIRED" designates an item that is an absolute requirement of the guidelines.
- "REQUIRED IF APPLICABLE" designates an item that is an absolute requirement of the guidelines if it is applicable to the resource being described.
- "RECOMMENDED" designates an item that an implementer may ignore, but only if she has fully weighed the implications of doing so.
- "RECOMMENDED IF APPLICABLE" designates an item that is applicable to the resource being described and an implementer may ignore, but only if he has fully weighed the implications of doing so.
- "OPTIONAL" designates an item that an implementer may use at his own discretion.
- "NOT RECOMMENDED" designates an item that an implementer may use, but only after she has fully weighed the implications of doing so. This item is discouraged.

³ See <http://www.loc.gov/standards/mods/v3/mods-userguide.html>.

⁴ The starting point for Dublin Core mappings is the Library of Congress' *MODS to Dublin Core Metadata Element Set Mapping Version 3.0 (June 7, 2005)* available at <http://www.loc.gov/standards/mods/mods-dcsimple.html/>.

⁵ See <http://www.faqs.org/rfcs/rfc2119.html>.

Note that a requirement or recommendation for a subelement or attribute should be taken within the context of its parent element. For example, `<roleTerm>` is required only if its parent element `<role>` (itself a subelement of `<name>`) is used.

The current and former members of the Aquifer Metadata Working Group are:

- Sarah L. Shreeves (University of Illinois at Urbana-Champaign): 2005-2009; Chair, 2005-2007
- Jenn Riley (Indiana University): 2005-2009; Chair, 2007-2009
- Laura Akerman (Emory University): 2006-2009
- John Chapman (University of Minnesota): 2005-2008
- Melanie Feltner-Reichert (University of Tennessee): 2006-2008
- Kat Hagedorn (University of Michigan): 2007-2009; ASHO Core Team Liaison, 2006
- Bill Landis (California Digital Library/Yale University): 2005-2006, 2007-2009
- Tracy Meehleib (Library of Congress): 2006-2009
- Elizabeth Milewicz (Emory University): 2005-2006
- David Reynolds (Johns Hopkins University): 2005-2009
- Gary Shawver (New York University): 2005-2008

The Aquifer Metadata Working Group would like to thank the many individuals and groups who commented on the January 2006 draft of the Implementation Guidelines. These guidelines are much improved because of the many comments and questions we received.

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Summary of Requirements and Recommendations

Element	Element Requirement Level	Subelement(s)/Attributes required if element used	Subelement(s)/Attributes recommended or recommended if applicable	Repeat -able	Content Controlled
<titleInfo> (page 14)	Required	- <title>	- type attribute - authority attribute - <subTitle> - <partName> - <partNumber> - <nonSort>	Yes	Recommended authority attribute limits content
<name> (page 19)	Required if applicable	- <namePart>	- type attribute - authority attribute - <role><roleTerm>	Yes	Recommended authority attribute limits content
<typeOfResource> (page 25)	Required	None	- Collection attribute - manuscript attribute	Yes	Yes
<genre> (page 29)	Recommended	- authority attribute	N/A	Yes	Recommended authority attribute limits content
<originInfo> (page 31)	Required	- <placeTerm> and type attribute when <place> used - authority attribute when <placeTerm type="code"> used - At least one date subelement - At least one date subelement must have attribute keyDate="yes"	- <publisher> - encoding attribute for date - point attribute for date - qualifier attribute for date - <edition>	Yes	Recommended authority and encoding attribute limits content

Element	Element Requirement Level	Subelement(s)/Attributes required if element used	Subelement(s)/Attributes recommended or recommended if applicable	Repeat-able	Content Controlled
<language> (page 37)	Required, if language is primary to resource	- <languageTerm> - each type attribute - authority attribute when type="code"	N/A	Yes	Required authority attribute limits content
<physicalDescription> (page 41)	Required	- <digitalOrigin> - <internetMediaType>	- <form> and authority attribute - <extent> - <note>	No	Yes (see guidelines)
<abstract> (page 45)	Recommended	N/A	N/A	Yes	No
<tableOfContents> (page 47)	Recommended if applicable	none	- xlink attribute	Yes	No
<targetAudience> (page 49)	Recommended if applicable	none	- authority attribute	Yes	Recommended authority attribute limits content
<note> (page 51)	Recommended if applicable	none	none	Yes	No
<subject> (page 55)	Required if applicable	At least one subelement is required as <subject> is a wrapper element.	- authority attribute - <topic> - <geographic> - <temporal> with encoding, point attributes - <titleInfo> - <name> - <hierarchicalGeographic> - <geographicCode> with authority attribute	Yes	Recommended authority attribute limits content

Element	Requirement Level	Subelement(s)/Attributes required if element used	Subelement(s)/Attributes recommended / recommended if applicable	Repeat -able	Content Controlled
<classification> (page 65)	Optional	- authority attribute	- edition attribute	Yes	Required authority attribute limits content
<relatedItem> (page 67)	Recommended if applicable	- type attribute	- xlink attribute	Yes	In some cases (see guidelines)
<identifier> (page 73)	Recommended	- type attribute	- invalid attribute	Yes	Required type attribute limits content
<location> (page 77)	Required	- <url> - one and only one instance of <location> <url> contains usage="primary display"	- authority attribute with <physicalLocation> subelement - access attribute with <url> subelement	Yes	Recommended authority attribute limits content
<accessCondition> (page 83)	Required	- At least one attribute type="use and reproduction"	None	Yes	No
<part> (page 87)	Recommended if applicable (see guidelines)	none	- <detail> with type attribute - <extent> with unit attribute - <start>, <end>, <total>, <list> subelements - <date> with encoding, point, qualifier attributes - <text>	Yes	No
<extension> (page 93)	Optional	N/A	N/A	N/A	N/A
<recordInfo> (page 95)	Required	- <languageOfCataloging> - <languageTerm> - authority attribute	- <recordContentSource> with authority attribute - <recordOrigin>	No	Required authority attribute limits content in some subelements

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<titleInfo>

MODS Element	Attributes	Subelements
<titleInfo>	type authority displayLabel	<title> <subTitle> <partNumber> <partName> <nonSort>

SUMMARY OF REQUIREMENTS

The *DLF/Aquifer Implementation Guidelines for Shareable MODS Records* require the use in all records of at least one <titleInfo> element with one <title> subelement. Other subelements of <titleInfo> are recommended when they apply. This element is repeatable.

DEFINITION FROM MODS USER GUIDELINES

A word, phrase, character, or group of characters, normally appearing in a resource, that names it or the work contained in it.

DISCUSSION OF USE

Titles are an extremely important access point for digital library resources, and are frequently used in brief record displays to assist end users in deciding whether to investigate a resource further. As such, at least one <titleInfo><title> element is required by these guidelines. Additional <titleInfo> elements should be used to indicate other titles for the resource. Do not include punctuation intended to delineate parts of titles separated into subelements of <titleInfo>.

Choice and format of titles should be governed by a content standard such as the *Anglo-American Cataloging Rules, 2nd edition (AACR2)*, *Cataloguing Cultural Objects (CCO)*, or *Describing Archives: A Content Standard (DACS)*. Details such as capitalization, choosing among the forms of titles presented on an item, and use of abbreviations should be determined based on the rules in a content standard. One standard should be chosen and used consistently for all records in an OAI set.

When no title appears on the item being described, a title should be supplied. The guidelines recommend against the use of brackets or other punctuation to indicate the title has been supplied rather than appearing on the item; the *displayLabel* attribute, however, may be used to indicate that the title is supplied. In supplying a title, consider expectations of end users for naming of resources. Follow the rules of the chosen content standard for the construction of the supplied title.

Repeat this element as necessary.

Attributes:

All attributes are applied to the <titleInfo> element; none are used on any subelements.

type [RECOMMENDED IF APPLICABLE]

For the primary title of the resource, do not use the type attribute. For all additional titles, the guidelines recommend using this attribute to indicate the type of the title being recorded. Allowed values are:

- abbreviated
- translated
- alternative
- uniform

authority [RECOMMENDED IF APPLICABLE]

The authority attribute is used to indicate that the title given is controlled by a record in an authority file. The guidelines recommend the use of authoritative titles and the authority attribute whenever the type attribute is set to "uniform" and/or "abbreviated". Values for "uniform" should be taken from the *Source Codes for Name and Title Authority Files*⁶ maintained by the Library of Congress. Values for "abbreviated" should be taken from the code list for MARC field 210 in the *MARC Code Lists for Relators, Sources, Description Conventions*⁷, also maintained by the Library of Congress. The authority attribute should not be used with titles having a type attribute of "translated" or "alternative" since these title types would not be represented in an authority file.

displayLabel [OPTIONAL]

The displayLabel attribute may be used whenever appropriate to indicate the preferred labeling when displayed by a metadata aggregator. Appropriate cases include titles other than the primary title or subtitle. Include the text preferred and capitalization, but do not include delimiters such as colons. Metadata aggregators may choose to ignore this attribute.

Sub-elements:

<title> [REQUIRED]

The <title> element contains the core title of the resource. At least one <titleInfo><title> is required by these guidelines. This element includes all parts of a title not covered by other sub-elements of <titleInfo>.

<subTitle> [RECOMMENDED IF APPLICABLE]

The <subTitle> element is used to record a part of a title deemed secondary to the core portion. The guidelines recommend the use of this element when a subtitle is present,

⁶ <http://www.loc.gov/marc/sourcecode/authorityfile/authorityfilesources.html>

⁷ <http://www.loc.gov/marc/relators/relaothr.html#rela210b>

rather than including the subtitle in the text of the <title> element. When using the <subTitle> element, do not include punctuation at the end of the <title> element intended to delineate the title from the subtitle.

<partNumber> [RECOMMENDED IF APPLICABLE]

The <partNumber> element is used for a part or section number of a title. <partNumber> may describe the section of the digital object (for example, an episode number or an audio or video clip). <partNumber> may follow <title> or <subTitle> as appropriate. The guidelines recommend the use of this subelement when a part number is present, rather than including the part number in the text of the <title> element. When using the <partNumber> element, do not include punctuation at the end of the preceding element intended to delineate the part number from previous parts of the title.

Multiple parts of an item should appear in separate MODS records or <relatedItem> elements.

<partName> [RECOMMENDED IF APPLICABLE]

The <partName> element is used for a part or section name of a title. Use <partName> to describe the section or division titles of the digital object (for example, a chapter title, episode name, or an audio or video clip). Multiple <partName> elements may be nested in a single <titleInfo> to describe a single part with multiple hierarchical levels (see the Bible example below); multiple parts, however, should be separated into multiple <titleInfo> elements. The guidelines recommend the use of this subelement when a part name is present, rather than including the part name in the text of the <title> element. When using the <partName> element, do not include punctuation at the end of the preceding element intended to delineate the part name from previous parts of the title.

Multiple parts of an item should appear in separate MODS records or <relatedItem> elements.

<nonSort> [RECOMMENDED IF APPLICABLE]

The <nonSort> element contains characters, including initial articles, punctuation, and spaces that appear at the beginning of a title that should be ignored for indexing of titles. It should precede the <title> element when used. The guidelines strongly recommend the use of this element when non-sorting characters are present, rather than including them in the text of the <title> element.

If a space is intended between the <nonSort> string and the remainder of the <title>, it should be explicitly included in the <nonSort> string, to distinguish it from cases where a space is not intended.

EXAMPLES OF <titleInfo> USE

```
<titleInfo>
  <nonSort>The </nonSort>
  <title>Olympics</title>
```



```
<subTitle>a history</subTitle>
<partNumber>Part 1</partNumber>
<partName>Ancient</partName>
</titleInfo>

<titleInfo displayLabel="Supplied title">
  <title>Genealogical information concerning several early families
  of Upper Indiana Presbyterian Church</title>
</titleInfo>

<titleInfo>
  <title>Life Mask of Stephen A. Douglas</title>
</titleInfo>

<titleInfo type="uniform" authority="naf">
  <title>Bible</title>
  <partName>O.T.</partName>
  <partName>Exodus</partName>
</titleInfo>

<titleInfo>
  <nonSort>The </nonSort>
  <title>Trial</title>
</titleInfo>

<titleInfo>
  <nonSort>L' </nonSort>
  <title>Enfant</title>
</titleInfo>
```

USE BY AGGREGATORS

<titleInfo> is the primary descriptive element used for identification and display for many digital objects. Most aggregators index <titleInfo> and will use it in a brief display.

MAPPING TO DUBLIN CORE

The *MODS to Dublin Core Metadata Element Set Mapping Version 3.0 (June 7, 2005)* recommends mapping the <titleInfo> element and all subelements to the <dc:title> element in simple Dublin Core. Since prescribed punctuation separating elements of the title is not included in MODS records prepared according to these guidelines, they would need to be inserted at the point of transformation.

MODS examples above expressed in Dublin Core:

```
<dc:title>The Olympics: a history. Part 1: Ancient</title>

<dc:title>Genealogical information concerning several early
families of Upper Indiana Presbyterian Church</title>

<dc:title>Life Mask of Stephen A. Douglas</title>

<dc:title>Bible. O.T. Exodus</title>
```

RELATIONSHIP TO DLF/NSDL BEST PRACTICES FOR SHAREABLE METADATA

The Title Practices section in the DLF/NSDL *Best Practices for Shareable Metadata* discusses the use of titles.⁸ These guidelines are more prescriptive than the DLF/NSDL *Best Practices*, requiring at least one title be present in every record.

⁸ <http://oai-best.comm.nsd.org/cgi-bin/wiki.pl?TitlePractices>

<name>

MODS Element	Attributes	Subelements
<name>	type authority	<namePart> <displayForm> <affiliation> <role> <roleTerm> <description>

SUMMARY OF REQUIREMENTS

The *DLF/Aquifer Implementation Guidelines for Shareable MODS Records* requires the use of at least one <name> element to describe the creator of the intellectual content of the resource, if available. The guidelines recommend the use of the type attribute with all <name> elements whenever possible for greater control and interoperability. In addition, they require the use of <namePart> as a subelement of <name>. This element is repeatable.

DEFINITION FROM MODS USER GUIDELINES

The name of a person, organization, or event (conference, meeting, etc.) associated in some way with the resource.

DISCUSSION OF USE

Include as many <name> elements for contributors as are readily available.⁹ For textual materials, include the names of all known authors, translators, and/or editors. For images, include the name of the creator of the original intellectual content (photographer, painter, architect, etc.) and the name of anyone capturing that content in a new medium (for a photograph of a building, include both the architect and the photographer). If the creator is unknown or anonymous, do *not* include "unknown," "anonymous," or a similar indication in the MODS records for aggregation.

In addition to describing creators, <name> is used as a subelement of <subject>. For names used as subjects, see the <subject> section of the guidelines (see page 55).

Repeat this element as necessary.

Attributes:

type [RECOMMENDED]

The type attribute can take the following values:

⁹ Do not be constrained by the *Anglo-American Cataloging Rules*, 2nd edition (AACR2) practice of limiting authors or contributors to three or fewer names.

personal
corporate
conference

authority [RECOMMENDED]

Use the form of a name taken from the authority file most appropriate to the resource and intended audience. The value for the authority attribute should come from the *Source Codes for Name and Title Authority Files*¹⁰ maintained by the Library of Congress. Use the value `local` if a locally-developed name authority file is in use. If there is no name authority file in use, the `authority` attribute should not be used.

Subelements:

<namePart> [REQUIRED]

The name itself is always wrapped in a `<namePart>` element. MODS allows for either breaking up parts of the name (given and family, for example) in different `<namePart>` elements or enclosing the entire name in one element. Use of the former method affords more control in sorting and display and should be used if the data is readily available. Either method is acceptable in these guidelines.¹¹

Attribute of <namePart>

type [RECOMMENDED IF APPLICABLE]

When breaking a `<name>` element into constituent `<namePart>` elements, the `type` attribute should be used whenever applicable. This attribute takes the following values:

date
family
given
termsOfAddress

<displayForm> [OPTIONAL]

The `<displayForm>` element makes it possible to display personal names in direct order rather than reversed. The element may be used if desired.

<affiliation> [OPTIONAL]

This subelement contains the name, address, etc. of an organization with which the `<name>` entity was associated when the resource was created. If the information is readily available, it may be included.

<role> [RECOMMENDED]

¹⁰ <http://www.loc.gov/marc/sourcecode/authorityfile/authorityfilesources.html>

¹¹ For greater interoperability, name elements should appear in the same order as those of their authorized form. If not authority is used, last name or family name should appear first, followed by a comma, followed by first or given names.

Use the <role> element as a wrapper element to contain coded and/or textual description of the role of the named entity. The guidelines recommend using this element primarily with personal names. Repeat <role> for each new role. These guidelines leave it up to the institution whether or not to generate "creator" as a <roleTerm>.

Subelement for <role>

<roleTerm> [REQUIRED]

Use this subelement to actually contain the coded or textual description. Both the coded and textual forms of the same role can be recorded in separate elements within a single <role> wrapper.

Attributes for <roleTerm>

type [RECOMMENDED]

This attribute has two possible values.

text - This value is used to express the role in a textual form

code- This value is used to express the role in a coded form. The authority attribute should be used to indicate the source of the code.

These guidelines recommend that, if <role> is used, that at least a textual version of the role is given using type="text".

authority [RECOMMENDED IF APPLICABLE]

Use this attribute to indicate the source if type="code". Use the values for code authorities from the *Source Codes for Relators and Roles*¹² maintained by the Library of Congress. At the time these guidelines are published there is only one: the MARC Value List for Relators and Roles¹³.

<description> [NOT RECOMMENDED]

Use this element to record a textual description of a name. Use of this subelement is not recommended in these guidelines.

EXAMPLES OF <name> USE

```
<name>
  <namePart>Whitman, Walt</namePart>
  <namePart type="date">1819-1892</namePart>
</name>

<name authority="naf" type="personal">
```

¹² <http://www.loc.gov/marc/sourcecode/relator/relatorsource.html>

¹³ <http://www.loc.gov/marc/sourcecode/relator/relatorlist.html>

```
<namePart>Evans, Walker, 1903-1975</namePart>
<role>
  <roleTerm type="code"
    authority="marcrelator">pht</roleTerm>
  <roleTerm type="text" authority="marcrelator">Photographer
  </roleTerm>
</role>
</name>

<name authority="naf" type="personal">
  <namePart type="family">Faulkner</namePart>
  <namePart type="given">William</namePart>
  <namePart type="date">1897-1962</namePart>
</name>

<name authority="naf" type="personal">
  <namePart type="family">Mattox</namePart>
  <namePart type="given">Douglas E.</namePart>
  <namePart type="given">(Douglas Ernest)</namePart>
  <namePart type="date">1947-</namePart>
</name>

<name type="corporate">
  <namePart>Digital Library Federation</namePart>
</name>
```

USE BY AGGREGATORS

Aggregators commonly use the <name> field as a target for author or subject searching. Even the simplest interfaces offer an author/creator search. In cases of unknown or anonymous creators of resources, aggregators generally remove values indicating this and rely on institutions' local records to convey this information if necessary.

MAPPING TO DUBLIN CORE

The *MODS to Dublin Core Metadata Element Set Mapping Version 3.0 (June 7, 2005)* recommend mapping <name><namePart> to either <dc:creator> or <dc:contributor> in Dublin Core. The guidelines recommend mapping <name> elements to <dc:contributor> as the default, but <dc:creator> may be used if you have source data that clearly identifies the name as creator.

MODS examples above expressed in Dublin Core:

```
<dc:creator>Evans, Walker, 1903-1975</dc:creator>

<dc:creator>Faulkner, William, 1897-1962</dc:creator>

<dc:contributor>Mattox, Douglas E. (Douglas Ernest), 1947-
</dc:contributor>

<dc:contributor>Digital Library Federation</dc:contributor>
```

RELATIONSHIP TO DLF/NSDL BEST PRACTICES FOR SHAREABLE METADATA

The Name Practices section in the DLF/NSDL *Best Practices for Shareable Metadata* discusses the use of names.¹⁴

¹⁴ <http://oai-best.comm.nsd.org/cgi-bin/wiki.pl?NamePractices>

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<typeOfResource>

MODS Element	Attributes	Subelements
<typeOfResource>	collection manuscript	None

SUMMARY OF REQUIREMENTS

The *DLF/Aquifer Implementation Guidelines for Shareable MODS Records* require the use in all records of at least one <typeOfResource> element using the required enumerated values. This element is repeatable.

DEFINITION FROM MODS USER GUIDELINES

A term that specifies the characteristics and general type of content of the resource.

DISCUSSION OF USE

For the purposes of records created according to these guidelines, information in <typeOfResource> is about the original item. For example, in the case of a digitized photograph, <typeOfResource> would apply to the analog original; in born-digital materials, it would apply to the original digital format.

The <typeOfResource> element is required by these guidelines and is used to categorize the resource at a fairly high level. <typeOfResource> has no subelements, but does require the use of an enumerated list of values. There are two possible attributes in addition to the common attributes described at the end of these guidelines [see page 101].

Repeat this element as necessary.

Attributes:

collection [RECOMMENDED IF APPLICABLE]

Use this attribute (collection="yes") to indicate whether the resource described is a collection. A collection is defined as a multi-part group of resources. If there are multiple resource types within the collection, these should be enumerated in separate <typeOfResource> elements.

manuscript [RECOMMENDED IF APPLICABLE]

Use this attribute (manuscript="yes") to indicate whether the resource described is handwritten or typescript.

Values:

The values for `<typeOfResource>` are restricted to those in the following list. These should be used in accordance with the guidelines offered in the *MODS User Guidelines*.¹⁵

- text
- cartographic
- notated music
- sound recording [if not possible to specify "musical" or "nonmusical"]
- sound recording-musical
- sound recording-nonmusical
- still image
- moving image
- three dimensional object
- software, multimedia
- mixed material

EXAMPLES OF `<typeOfResource>` USE

```
<typeOfResource>text</typeOfResource>
<typeOfResource>still image</typeOfResource>

<typeOfResource>cartographic</typeOfResource>

<typeOfResource collection="yes">text</typeOfResource>
<typeOfResource manuscript="yes">text</typeOfResource>
```

USE BY AGGREGATORS

Due to its utility for determining research value (for example, a researcher looking specifically for cartographic material), aggregators may choose to include this field in a brief display to end users, and may also index it to allow limiting or refining by this data. Aggregators may also use this field to determine suitability for harvesting based on their perception of end users' needs.

MAPPING TO DUBLIN CORE

The *MODS to Dublin Core Metadata Element Set Mapping Version 3.0 (June 7, 2005)* recommend mapping `<typeOfResource>` to `<dc:type>`. In addition, these guidelines recommend that when mapping the values found in `<typeOfResource>` to Dublin Core Type values¹⁶, include both the MODS value and the DC value if they are substantially different. Similarly, the attributes of `collection` and `manuscript` should be included as an additional, separate `<dc:type>` value.

```
<dc:type>text</dc:type>
<dc:type>still image</dc:type>

<dc:type>cartographic</dc:type>
```

¹⁵ <http://www.loc.gov/standards/mods/v3/mods-userguide-elements.html#typeofresource>

¹⁶ <http://dublincore.org/documents/dcmi-type-vocabulary/>

<dc:type>StillImage</dc:type>

<dc:type>collection</dc:type>

<dc:type>text</dc:type>

<dc:type>manuscript</dc:type>

<dc:type>text</dc:type>

RELATIONSHIP TO DLF/NSDL BEST PRACTICES FOR SHAREABLE METADATA

Related information is discussed in the Types of Resource¹⁷ and the Describing Versions and Reproductions¹⁸ sections of the *DLF/NSDL Best Practices for Shareable Metadata*.

¹⁷ <http://oai-best.comm.nsd.gov/cgi-bin/wiki.pl?TypesofResources>

¹⁸ <http://oai-best.comm.nsd.gov/cgi-bin/wiki.pl?DigitalTactileResource>

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<genre>

MODS Element	Attributes	Subelements
<genre>	authority	None

SUMMARY OF REQUIREMENTS

The *DLF /Aquifer Implementation Guidelines for Shareable MODS Records* recommend the use of at least one <genre> element in every MODS record and, if a value is provided, require the use of a value from a controlled list and the designation of this list in the authority attribute. This element is repeatable.

DEFINITION FROM MODS USER GUIDELINES

A term(s) that designates a category characterizing a particular style, form, or content, such as artistic, musical, literary composition, etc. <genre> contains terms that give more specificity than the broad terms used in <typeOfResource>.

DISCUSSION OF USE

The <genre> element is recommended in these guidelines and should be used to characterize the content of the digital resource rather than the digital resource itself. The values should be pulled from a controlled vocabulary appropriate for the resource described. This source vocabulary is indicated using the authority attribute. Consult *Source Codes for Genre*¹⁹, a list of possible controlled vocabularies and their source codes, maintained by the Library of Congress.

Genre is a term that carries different specific meanings within different communities of practice, and the content of most information objects can be characterized by genre at some level of granularity, either very broad or quite specific. For example, photographs and ambrotypes are both valid genre characterizations, depending on your perspective, for a specific type of direct positive photographic print. At the very least, institutions can provide a very broad genre term for materials being digitized. Broad terms appear in many standard thesauri used for genre terms. For example: 'Books' appears in LCSH, AAT, and TGM II; 'Photographs' appears in all three as well; and 'Sound recordings' appears in LCSH and AAT. Values given should be as specific as possible within the context of an institution's descriptive program. It is recommended that institutions adopt a consistent, well-documented approach to supplying genre terms.

Repeat this element as necessary.

Attributes:

authority [REQUIRED]

¹⁹ <http://www.loc.gov/marc/relators/relasour.html#rela655b>

Use this attribute to indicate the controlled vocabulary used for the values in the <genre> element.

EXAMPLES OF <genre> USE

For a digital image of a Civil War era daguerreotype portrait:

```
<genre authority="aat">daguerreotypes</genre>  
<genre authority="aat">portraits</genre>
```

For a children's adventure story:

```
<genre authority="gsafd">adventure fiction</genre>  
<genre authority="lcsh">Children's literature</genre>
```

USE BY AGGREGATORS

For certain classes of materials with strongly developed genre vocabularies, the genre of an item is an important research tool; aggregators may choose to include this in the brief display. It may also be indexed to provide the option of limiting or refining searches using this data. Aggregators may also use the <genre> element to filter records appropriate for their service.

MAPPING TO DUBLIN CORE

The *MODS to Dublin Core Metadata Element Set Mapping Version 3.0 (June 7, 2005)* recommends mapping the <genre> element to the <dc:type> element in simple Dublin Core.

MODS examples above expressed in Dublin Core:

```
<dc:type>daguerreotypes</dc:type>  
<dc:type>portraits</dc:type>  
  
<dc:type>adventure fiction</dc:type>  
<dc:type>Children's literature</dc:type>
```

RELATIONSHIP TO DLF/NSDL BEST PRACTICES FOR SHAREABLE METADATA

Related information is discussed in the Types of Resource²⁰ and the Describing Versions and Reproductions²¹ sections of the *DLF/NSDL Best Practices for Shareable Metadata*.

²⁰ <http://oai-best.comm.nsd.gov/cgi-bin/wiki.pl?TypesofResources>

²¹ <http://oai-best.comm.nsd.gov/cgi-bin/wiki.pl?DigitalTactileResource>

<originInfo>

MODS Element	Attributes	Subelements
<originInfo>	type - <place> authority - <place> encoding - date point - date keyDate - date qualifier - date	<place> <publisher> <dateIssued> <dateCreated> <dateCaptured> <dateValid> <dateModified> <copyrightDate> <dateOther> <edition> <issuance> <frequency>

SUMMARY OF REQUIREMENTS

The *DLF/Aquifer Implementation Guidelines for Shareable MODS Records* require the use of at least one <originInfo> element with at least one date subelement in every record, one of which must be marked as a key date. <place>, <publisher>, and <edition> are recommended if applicable. These guidelines make no recommendation on the use of the elements <issuance> and <frequency>. This element is repeatable.

DEFINITION FROM MODS USER GUIDELINES

Information about the origin of the resource, including place of origin or publication, publisher/originator, and dates associated with the resource.

DISCUSSION OF USE

Encode information in <originInfo> relevant to any version of a resource that is considered useful in an aggregated environment. It is usually not necessary to include full <originInfo> for every version of a resource known to exist; choose carefully which versions and elements it is important to share with aggregators. The examples given in these guidelines represent a sample of the types of decisions a metadata provider might make about which data is important to expose.

Subelements:**<place> [RECOMMENDED IF APPLICABLE]**

Record in <place> and its subelement <placeTerm> place names associated with the creation or issuance of a resource. Follow the *MODS User Guidelines* for the structure and use of repeated <place> elements and <placeTerm> subelements. Descriptive standards such as *AACR2* may be used to determine which places to record for published

resources. For unpublished resources, if a place of origin is known, record it in <place><placeTerm>.

The <place> and the <placeTerm> subelement should be omitted if no information about the originating place of the resource is known.

Repeat <place> for recording multiple places.

Subelement for <place>

<placeTerm> [REQUIRED]

Use the <placeTerm> subelement to record the textual or code form of the place.

Attributes for <placeTerm>:

type [REQUIRED]

This attribute may be used with the following values:

text - This value is used to express place in a textual form

code - This value is used to express place in a coded form. The authority attribute may be used to indicate the source of the code.

For each <placeTerm> given, the guidelines require including, at a minimum, a textual version of the place, with the attribute `type="text"`.

authority [RECOMMENDED IF APPLICABLE]

Appropriate values for this attribute may be found in the MODS User Guidelines.

If the place given is a country, and the name of that country has been selected from the MARC country code list or the ISO3166 standard list of country names, add an authority attribute to <placeTerm> indicating the source of the country name, and add a second <placeTerm> subelement within <place> indicating the coded version of that country name from the chosen authoritative list, with the attribute `type="code"` and an authority attribute indicating the source of the country code.

<publisher> [RECOMMENDED IF APPLICABLE]

Record in <publisher> a named entity determined to be the publisher or originator for a resource. Descriptive standards such as AACR2 may be used to format the name of the publisher. Information about an institution responsible for digitizing and delivering online a previously published resource should be included in <note>, rather than <originInfo><publisher>.

There are no attributes for the <publisher> element.

dates [AT LEAST ONE DATE ELEMENT IS REQUIRED]

The MODS schema includes several date elements intended to record different events that may be important in the life of a resource.

The following date elements are **recommended** for use by these guidelines. Record dates for as many of these MODS elements as is appropriate. To indicate to aggregators which is the best date to use for sorting and similar features, mark one and only one date as a key date using `keyDate="yes"` attribute. Institutions may choose to use only one date element when several apply but would contain identical data.

- `<dateIssued>` - publication or issued date
- `<dateCreated>` - date of creation of the resource
- `<copyrightDate>` - date on which a resource is copyrighted
- `<dateOther>` - generic date element that does not fall into another category but is important to record

The guidelines recommend recording each date in a structured form rather than a textual form. When a date is uncertain or cataloger-supplied, indicate this through the use of the qualifier attribute (described below) rather than inserting characters such as "ca.", brackets or a question mark as part of the date string. When only a decade is known, enter a date range for the entire decade and mark the date as questionable. When only a century is known, enter a date range for the entire century and mark the date as questionable.

Two date encoding formats from the cultural heritage community may be used for encoding BCE dates: TEMPER²² and EDTF²³. As neither of these encoding formats is currently an option for the MODS date encoding attribute, do not include an encoding attribute if one of these formats is used.

The following date elements are **not recommended** for use. In some cases they may be considered technical metadata, and would not generally be used by aggregators to provide access to a resource:

- `<dateCaptured>` - date on which the resource was digitized or a subsequent snapshot was taken
- `<dateValid>` - date in which the content of a resource is valid
- `<dateModified>` - date in which a resource is modified or changed

Attributes for date elements:

The attributes below apply to all MODS date elements.

encoding [RECOMMENDED]

If an exact year is known, the guidelines recommend representing the value using the W3CDTF encoding, which also allows month and day to be specified if known. The W3CDTF encoding is a profile of the more flexible ISO8601 standard. Using W3CDTF ensures a more predictable format for dates. These

²² <http://tools.ietf.org/html/draft-kunze-temper-01>

²³ <http://www.loc.gov/standards/datettime/>

guidelines recommend using ISO8601 encoding only when a date cannot be expressed using W3CDTF.

point [RECOMMENDED IF APPLICABLE]

The point attribute is used to specify whether a date is a start date or an end date if the resource is best described by a date range. Best practice is to use the point attribute only when a date range is indicated, not for single dates.

keyDate [REQUIRED IN ONE AND ONLY ONE DATE ELEMENT]

Every MODS record containing at least one date should have one and only one date element with the attribute `keyDate="yes"`. The key date will be used by aggregators for date indexing, sorting, and display. The date marked as the key date should be the date considered by the metadata provider as the most important for end user access. Frequently this will be the date the item was created or issued. Even if only one date is present in a MODS record, including the `keyDate` attribute on that date element provides a significant benefit to the aggregator. Metadata provider processing strategies are much more likely to be able to add this attribute easily than an aggregator is to locate and act upon the correct date, even if only one date is present in the MODS record. For date ranges, mark the start date of the range intended for date searching as the `keyDate`.

qualifier [RECOMMENDED IF APPLICABLE]

The `qualifier` attribute has three allowed values: `approximate`, `inferred`, and `questionable`. Best practice is to use this attribute with the appropriate value when a date is approximate, inferred, or questionable, rather than inserting characters such as `"ca."`, brackets or a question mark within the date string.

<edition> [RECOMMENDED IF APPLICABLE]

The `<edition>` element is used to provide an edition statement for a published work. Descriptive standards such as AACR2 and DACS may be used to determine if an edition statement should be recorded and in what format. If no edition statement applies to the resource, do not include the `<edition>` element.

<issuance> [OPTIONAL]

These guidelines offer no specific guidance on the use of `<issuance>`.

<frequency> [OPTIONAL]

These guidelines offer no specific guidance on the use of `<frequency>`.

EXAMPLES OF <originInfo> USE

```
<originInfo>
  <place>
    <placeTerm type="text">New York</placeTerm>
  </place>
```

```

    <publisher>MacMillan</publisher>
    <copyrightDate encoding="w3cdtf" keyDate="yes"
    qualifier="inferred">1922</copyrightDate>
    <edition>2nd ed.</edition>
</originInfo>

<originInfo>
    <dateCreated encoding="w3cdtf" keyDate="yes"
    qualifier="approximate" point="start">1857</dateCreated>
    <dateCreated encoding="w3cdtf" qualifier="approximate"
    point="end">1860</dateCreated>
</originInfo>

<originInfo>
    <dateCreated encoding="iso8601" keyDate="yes"
    qualifier="inferred">16</dateCreated>
</originInfo>

<originInfo>
    <place>
        <placeTerm type="text">Sumeria</placeTerm>
    </place>
    <dateCreated keyDate="yes" qualifier="approximate">2500
    BCE</dateCreated>
</originInfo>

<originInfo>
    <place>
        <placeTerm type="code"
        authority="marccountry">enk</placeTerm>
        <placeTerm type="text">England</placeTerm>
    </place>
    <dateIssued encoding="w3cdtf" keyDate="yes"
    qualifier="inferred">1855</dateIssued>
    <issuance>monographic</issuance>
</originInfo>

```

USE BY AGGREGATORS

Aggregators in the current environment will likely use dates for providing access to materials by their creation date, including limiting searches to resources created within a certain date range, or browsing by the date of creation of a resource. The `keyDate` attribute signifies to an aggregator which date is most important, but aggregators should also make use of indication of date ranges, uncertain dates, and the like to improve end user discovery. Other dates and other `<originInfo>` data would likely be displayed to a user, to give that user the information he or she needs to determine if the resource is of interest.

MAPPING TO DUBLIN CORE

As the *MODS to Dublin Core Metadata Element Set Mapping Version 3.0 (June 7, 2005)* makes clear, subelements of `<originInfo>` map incompletely to Dublin Core elements. The MODS element `<publisher>` maps to `<dc:publisher>`, and all of the date elements

to <dc:date>. If multiple dates are present in the MODS record, data providers may want to consider mapping only the date indicated as the keyDate to the <dc:date> element.

The MODS elements <place>, <edition>, <issuance>, and <frequency> do not map directly to simple Dublin Core elements. However, a <place> element in combination with a <publisher> element may be combined to map to <dc:publisher> following the AACR2 convention.

MODS examples above expressed in Dublin Core:

```
<dc:publisher>New York: MacMillan</dc:publisher>  
<dc:date>1922</dc:date>
```

```
<dc:date>1857-1860</dc:date>
```

```
<dc:date>16</dc:date>
```

```
<dc:date>2500 B.C.E.</dc:date>
```

```
<dc:date>1855</dc:date>
```

RELATIONSHIP TO DLF/NSDL BEST PRACTICES FOR SHAREABLE METADATA

The Date Practices section of the DLF/NSDL *Best Practices for Shareable Metadata* discusses the use of dates²⁴. Other elements in <originInfo> are not covered in the DLF/NSDL *Best Practices for Shareable Metadata*.

²⁴ <http://oai-best.comm.nsd.org/cgi-bin/wiki.pl?DatePractices>

<language>

MODS Element	Attributes	Subelements
<language>	type - <languageTerm> authority - <languageTerm> objectPart - <languageTerm>	<languageTerm>

SUMMARY OF REQUIREMENTS

The *DLF/Aquifer Implementation Guidelines for Shareable MODS Records* require at least one <language> element for all resources in which language is primary to understanding the resource. These resources include textual resources, as well as audio and video resources with spoken word components. Although <language> is usually not required for non-textual resources such as images, it could be used effectively for such resources when language is a primary component. Examples of the latter might include a photograph of a sign with text or a monument with an inscription. This element is repeatable.

DEFINITION FROM MODS USER GUIDELINES²⁵

A designation of the language in which the content of a resource is expressed.

DISCUSSION OF USE

<language> is a wrapper element for one or more <languageTerm> elements. At least one <language> element is required for resources in which language is primary to understanding the resource. The <language> element is optional for resources in which language is important to understanding the resource, but not primary. For example, the caption of a photograph may in some instances be important to understanding the photograph, but not primary. Whether to include a <language> element based on the language's importance or primacy is left to data provider's discretion. Repeat the <language> element as necessary.

Attribute:

objectPart [OPTIONAL]

This attribute designates which part of the resource is in the language supplied. For example, <language objectPart="summary" authority="iso639-2b">spa</language> indicates that only the summary is in Spanish. The values of the attribute are not controlled, although it is preferable that institutions use consistent forms.

²⁵ <http://www.loc.gov/standards/mods/v3/mods-userguide-generalapp.html>

Subelements:

<languageTerm> [REQUIRED]

This repeatable subelement contains the language of the content of the resource in coded and textual form. These guidelines require at least one pair of <languageTerm> elements representing the primary language of the text wrapped in a single <language> element. One of these <languageTerm> elements should carry the attribute `type="text"` and the other should have `type="code"`. Additional pairs of <languageTerm> elements representing secondary languages may be included in separate <language> elements.

Attributes for <languageTerm>

type [REQUIRED]

This attribute may contain the following values:

`text` - The value of this attribute is the name of the language of the electronic resource in text form. Use the form of the language found in the MARC Code List for Languages.²⁶

`code` - The value of this attribute is the three-character alphabetic code found in iso639-2b, a bibliographic language code from ISO 639-2 (Codes for the representation of names of languages: alpha-3 code), which is identical to the MARC Code List for Languages.²⁷

authority [REQUIRED IF APPLICABLE]

These guidelines require using the value `iso639-2b` for this attribute in the <languageTerm> element that contains the attribute `type="code"`. Do not use an `authority` attribute in the <languageTerm> element that contains the attribute `type="text"`.

EXAMPLES OF <language> USE

```
<language>
  <languageTerm type="text">French</languageTerm>
  <languageTerm type="code" authority="iso639-
    2b">fre</languageTerm>
</language>
```

```
<language>
  <languageTerm type="text"
    objectPart="caption">English</languageTerm>
  <languageTerm type="code" objectPart="caption" authority="iso639-
    2b">eng</languageTerm>
```

²⁶ <http://www.loc.gov/marc/languages/>

²⁷ See *MODS User Guidelines* (<http://www.loc.gov/standards/mods/v3/mods-userguide-elements.html#language>) and the ISO 639b FAQ (<http://www.loc.gov/standards/iso639-2/faq.html#3>) for further information. ISO639-2b is "A bibliographic language code from ISO 639-2 (Codes for the representation of names of languages: alpha-3 code)."

</language>

USE BY AGGREGATORS

<language> is a primary descriptive element and is used for narrowing search results.

MAPPING TO DUBLIN CORE

The *MODS to Dublin Core Metadata Element Set Mapping Version 3.0 (June 7, 2005)* recommends mapping the contents of the <language> element to <dc:language>. These guidelines further recommend mapping each subelement <languageTerm> to a distinct <dc:language> element.

MODS examples above expressed in Dublin Core:

```
<dc:language>French</dc:language>  
<dc:language>fre</dc:language>
```

```
<dc:language>English</dc:language>  
<dc:language>eng</dc:language>
```

RELATIONSHIP TO DLF/NSDL BEST PRACTICES FOR SHAREABLE METADATA

Language is discussed as a general class of element in the "Language" section of the *DLF/NSDL Best Practices for Shareable Metadata*.²⁸

²⁸ <http://oai-best.comm.nsd.org/cgi-bin/wiki.pl?LanguagePractices>

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<physicalDescription>

MODS Element	Attributes	Subelements
<physicalDescription>	type - <form> & <note> authority - <form> displayLabel - <note>	<form> <reformattingQuality> <internetMediaType> <extent> <digitalOrigin> <note>

SUMMARY OF REQUIREMENTS

The *DLF/Aquifer Implementation Guidelines for Shareable MODS Records* require the use of one <physicalDescription> element, one subelement <digitalOrigin>, and at least one subelement <internetMediaType>. This element is not repeatable.

DEFINITION FROM MODS USER GUIDELINES

<physicalDescription> is a wrapper element that contains all subelements relating to physical description information of the resource described.

DISCUSSION OF USE

Encode information in <physicalDescription> relevant to any version of a resource that is considered useful in an aggregated environment. It is usually not necessary to include a full <physicalDescription> for every version of a resource known to exist; choose carefully which versions and elements it is important to share with aggregators. The examples given in these guidelines represent a sample of the types of decisions a metadata provider might make about which data is important to expose.

Subelements:

<form> [RECOMMENDED]

This subelement specifies the physical form or medium of the material for a resource. Record the form of digitized and analog original resources if such information will be useful to aggregators.

Attributes of <form>

type [NOT RECOMMENDED]

The attribute `type` may be used to specify whether the form concerns materials or techniques, for example `type="material": oil paint`; `type="technique": painting`. However, there are no controlled values for the `type` attribute. Use of uncontrolled values – particularly within attributes - have limited usefulness for aggregators.

authority [RECOMMENDED]

Use the `authority` attribute to specify the source of the controlled value recorded. A list of possible authorities is available at *Source Codes for Forms*²⁹ maintained by the Library of Congress.

<reformattingQuality> [OPTIONAL]

This subelement reflects an overall assessment of the quality of the digital resource. It has no attributes. The values available in MODS for this subelement (`access`, `preservation`, `replacement`) reflect information useful in local environments, but not for the purposes of metadata aggregation. Aggregators are unlikely to benefit from the inclusion of this subelement in shared metadata records.

<internetMediaType> [REQUIRED]

This subelement records the electronic format type of the digital resource. Since it is expected that records shared for the Aquifer initiative describe resources existing in digital versions, at least one `<internetMediaType>` is required. This element has no attributes.

Inclusion of an `<internetMediaType>` is a key feature of a shared metadata record to enable aggregators to provide added value on resources themselves rather than only on metadata and is therefore critical to the continued growth of aggregation services. While adding this information to source metadata from which MODS records are generated (if MODS is not the native format) is desirable, this is not always feasible. A second option for institutions that do not have the resources to revisit legacy metadata is to adjust stylesheets or other MODS generation code to add this data to generated records *en masse*.

The content value for this subelement should be taken from the MIME Media Types list and expressed in the format type/subtype³⁰. If a digital resource comprises multiple file types (for example, a diary that has been imaged and a text transcription made available), use a separate `<internetMediaType>` subelement for each.

<extent> [RECOMMENDED IF APPLICABLE]

This subelement includes a statement of the number and specific material of the units of the resource that express physical extent. It has no attributes.

The use of your content standard of choice is strongly recommended if this subelement is used.

<digitalOrigin> [REQUIRED]

Record here the method by which a resource achieved digital form. Content values for this subelement are defined in the MODS schema. Current options are: `born digital`,

²⁹ <http://www.loc.gov/marc/sourcecode/form/formsource.html>

³⁰ <http://www.iana.org/assignments/media-types/index.html>

reformatted digital, digitized microfilm, and digitized other analog. Resources incorporating pre-existing analog content with new digital content should be recorded as "born digital". This subelement has no attributes.

<note> [RECOMMENDED IF APPLICABLE]

This subelement contains notes relating to the physical description of a resource that do not fit in one of the other available subelements. A separate <note> subelement should be used for each distinct note. Documentation on material and technique used for works of art and similar materials may be recorded here.

Attributes of <note>

type [NOT RECOMMENDED]

There are no controlled values for the type attribute. Use of uncontrolled values have limited usefulness for aggregators.

displayLabel [OPTIONAL]

The displayLabel attribute may be used to indicate the preferred labeling when displayed by a metadata aggregator. However, metadata aggregators may choose to ignore this attribute.

EXAMPLES OF <physicalDescription> USE

For a digitized photograph:

```
<physicalDescription>
  <form authority="smd">photoprint</form>
  <form authority="marcform">electronic</form>
  <internetMediaType>image/jpeg</internetMediaType>
  <extent>1 photograph</extent>
  <digitalOrigin>reformatted digital</digitalOrigin>
</physicalDescription>
```

For a diary that has been imaged and for which a text transcription has been made:

```
<physicalDescription>
  <form authority="marcform">electronic</form>
  <form authority="marcform">print</form>
  <internetMediaType>image/jpeg</internetMediaType>
  <internetMediaType>text/xml</internetMediaType>
  <extent>177 p.</extent>
  <digitalOrigin>reformatted digital</digitalOrigin>
</physicalDescription>
```

For a learning web site:

```
<physicalDescription>
  <form authority="marcform">electronic</form>
  <internetMediaType>image/jpeg</internetMediaType>
  <internetMediaType>text/html</internetMediaType>
  <extent>5 digital files</extent>
```

```
<digitalOrigin>born digital</digitalOrigin>
</physicalDescription>
```

USE BY AGGREGATORS

Information in `<internetMediaType>`, and possibly `<form>` may be used by aggregators to limit searches to particular types of resources or to offer browsing. Other information in `<physicalDescription>` would generally be used in the record display.

MAPPING TO DUBLIN CORE

The *MODS to Dublin Core Metadata Element Set Mapping, Version 3.0 (June 7, 2005)* recommend mapping `<physicalDescription>`, `<form>`, `<extent>`, and `<internetMediaType>` to `<dc:format>`. These guidelines also recommend mapping `<digitalOrigin>` to `<dc:format>`. Each value should be mapped to a separate instance of the `<dc:format>` element.

MODS example above expressed in Dublin Core:

```
<dc:format>electronic</dc:format>
<dc:format>image/jpeg</dc:format>
<dc:format>1 photograph</dc:format>
<dc:format>reformatted digital</dc:format>

<dc:format>electronic</dc:format>
<dc:format>print</dc:format>
<dc:format>image/jpeg</dc:format>
<dc:format>text/xml</dc:format>
<dc:format>177 p.</dc:format>
<dc:format>reformatted digital</dc:format>

<dc:format>electronic</dc:format>
<dc:format>image/jpeg</dc:format>
<dc:format>text/html</dc:format>
<dc:format>5 digital files</dc:format>
<dc:format>born digital</dc:format>
```

RELATIONSHIP TO DLF/NSDL BEST PRACTICES FOR SHAREABLE METADATA

Physical description is not explicitly covered in the DLF/NSDL *Best Practices for Shareable Metadata*. However, portions of the Types of Resources³¹ and Describing Versions and Reproductions³² sections may be applicable.

³¹ <http://oai-best.comm.nsd.gov/cgi-bin/wiki.pl?TypesofResources>

³² <http://oai-best.comm.nsd.gov/cgi-bin/wiki.pl?DigitalTactileResource>

<abstract>

MODS Element	Attributes	Subelements
<abstract>	type displayLabel	none

SUMMARY OF REQUIREMENTS

The *DLF/Aquifer Implementation Guidelines for Shareable MODS Records* recommend the use of one <abstract> element in every MODS record, except when a title, formal or supplied, serves as an adequate summary of the content of the digital resource. This element is repeatable.

DEFINITION FROM MODS USER GUIDELINES

A summary of the content of the resource.

DISCUSSION OF USE

Record a succinct summary of the content of the digital resource. When creating a MODS record for a digital surrogate, record a summary of the content of the original resource. If only a portion of the resource was digitized, summarize only that portion. This element provides end users with information about the digital resource that assists them in making a judgment about its likely usefulness, and also provides context, if needed, for controlled vocabulary used in the record. The use of your content standard of choice is strongly recommended.

This element may be repeated as necessary.

Attributes:**type [NOT RECOMMENDED]**

There are no controlled values for the type attribute. Use of uncontrolled values – particularly within attributes - have limited usefulness for aggregators.

displayLabel [OPTIONAL]

The displayLabel attribute may be used to indicate the preferred labeling when displayed by a metadata aggregator. However, metadata aggregators may choose to ignore this attribute.

EXAMPLES OF <abstract> USE

```
<abstract>Depicts stationery store and other buildings in San
Francisco, California.</abstract>
```

<abstract>Broadside advertising a funeral ceremony commemorating assassinated president Abraham Lincoln, held in Elgin, Illinois, on April 19, 1865. It details the route of the procession, the order of local official participants in the procession, and the order of service for the ceremony to be held in the Academy Hall. </abstract>

MAPPING TO DUBLIN CORE

The *MODS to Dublin Core Metadata Element Set Mapping Version 3.0 (June 7, 2005)* recommends mapping <abstract> to <dc:description>.

MODS examples above expressed in Dublin Core:

<dc:description>Depicts stationery store and other buildings in San Francisco, California.</dc:description>

<dc:description>Broadside advertising a funeral ceremony commemorating assassinated president Abraham Lincoln, held in Elgin, Illinois, on April 19, 1865. It details the route of the procession, the order of local official participants in the procession, and the order of service for the ceremony to be held in the Academy Hall.</dc:description>

RELATIONSHIP TO DLF/NSDL BEST PRACTICES FOR SHAREABLE METADATA

Abstract as a broad class of elements is not covered in the "Recommendations for classes of data elements" in the *DLF/NSDL Best Practices for Shareable Metadata*.

<tableOfContents>

MODS Element	Attributes	Subelements
<tableOfContents>	type displayLabel	none

SUMMARY OF REQUIREMENTS

The *DLF/Aquifer Implementation Guidelines for Shareable MODS Records* recommend the use of the <tableOfContents> element when applicable. This element is not repeatable.

DEFINITION FROM MODS USER GUIDELINES

A description of the contents of a resource.

DISCUSSION OF USE

Use of <tableOfContents> should be determined by the complexity of the digital object and whether or not the information is readily available. If more structured information is needed, consider using <relatedItem> with the type="constituent" attribute instead (see page 67). MODS also allows for <tableOfContents> to be used as an empty element with an xlink:href attribute to link to an external table of contents. Either method is supported by these guidelines.

Attributes:

type [NOT RECOMMENDED]

There are no guidelines and no controlled vocabulary for this attribute. Use of uncontrolled values – particularly within attributes - have limited usefulness for aggregators.

displayLabel [OPTIONAL]

The displayLabel attribute may be used to indicate the preferred labeling when displayed by a metadata aggregator. Include the text preferred and capitalization, but do not include delimiters such as colons. Metadata aggregators may choose to ignore this attribute. This attribute can be used whenever necessary to explain more about what is contained in the <tableOfContents>. Examples include Partial Contents, List of Photographs, Or Chapters.

xlink [RECOMMENDED IF APPLICABLE]

This attribute may be used to link to an external table of contents.

EXAMPLES OF <tableOfContents> USE

```
<tableOfContents displayLabel="Partial Contents">Honey Boy - Hiawatha  
Song - Her Boy in Blue</tableOfContents>
```

```
<tableOfContents  
xlink:href="http://www.ojp.usdoj.gov/bjs/toc/cchrie98.htm"/>
```

MAPPING TO DUBLIN CORE

The *MODS to Dublin Core Metadata Element Set Mapping Version 3.0 (June 7, 2005)* recommends mapping <tableOfContents> to the <dc:description> element.

MODS example above in Dublin Core:

```
<dc:description>Honey Boy - Hiawatha Song - Her Boy in  
Blue</dc:description>
```

```
<dc:description>http://www.ojp.usdoj.gov/bjs/toc/cchrie98.htm</dc  
:description>
```

RELATIONSHIP TO DLF/NSDL BEST PRACTICES FOR SHAREABLE METADATA

The DLF/NSDL *Best Practices for Shareable Metadata* do not cover Table of Contents as a broad class of element.

<targetAudience>

MODS Element	Attributes	Subelements
<targetAudience>	authority	none

SUMMARY OF REQUIREMENTS

The *DLF/Aquifer Implementation Guidelines for Shareable MODS Records* recommend the use of at least one <targetAudience> element when applicable, and a controlled vocabulary when available. This element is repeatable.

DEFINITION FROM MODS USER GUIDELINES

A description of the intellectual level of the audience for which the resource is intended.

DISCUSSION OF USE

Use <targetAudience> to describe a group for which a resource is intended. Use this element whenever there is a specific audience for a resource (for example, a text marked up specifically for historians). Note that these guidelines do not limit the use of the <targetAudience> element to the intellectual level of the audience. Use the authority attribute whenever possible to indicate the controlled vocabulary used (see below for a caveat).

Do not use <targetAudience> to indicate audiences to whom access or use of the resource is limited; include this information in the <accessCondition> element (see page 83).

Attribute:

authority [Recommended if applicable]

Use this attribute to indicate the controlled vocabulary in use. These guidelines recognize that the "Source Codes for Target Audience"³³ maintained by the Library of Congress contains only one source code, `marctarget`,³⁴ which itself contains a very limited set of values. If this source is not of use, these guidelines recommend that the value of the <targetAudience> be expressed clearly and be generally understandable outside of the local context of the resource.

EXAMPLE OF <targetAudience> USE

```
<targetAudience authority="marctarget">specialized</targetAudience>
<targetAudience>Genealogists</targetAudience>
```

³³ <http://www.loc.gov/marc/sourcecode/target/targetsource.html>

³⁴ <http://www.loc.gov/marc/sourcecode/target/targetlist.html>

<targetAudience>English as a second language (ESL)
students</targetAudience>

USE BY AGGREGATORS

Aggregators may use this field to separate out content to audiences of differing intellectual interests and levels. This is not currently common practice.

MAPPING TO DUBLIN CORE

The *MODS to Dublin Core Metadata Element Set Mapping Version 3.0 (June 7, 2005)* does not provide a mapping for <targetAudience>.

RELATIONSHIP TO DLF/NSDL BEST PRACTICES FOR SHAREABLE METADATA

The DLF/NSDL *Best Practices for Shareable Metadata* do not discuss audience as a general class of elements.

<note>

MODS Element	Attributes	Subelements
<note>	type displayLabel	none

SUMMARY OF REQUIREMENTS

The *DLF/Aquifer Implementation Guidelines for Shareable MODS Records* recommend using <note> if applicable. This element is repeatable.

DEFINITION FROM MODS USER GUIDELINES

General textual information relating to a resource.

DISCUSSION OF USE

<note> should be used only for information that cannot be encoded in another, more specific MODS element. For example, in retrospective conversion of existing MARC 21 records, many 5XX note fields, while technically falling within the definition of the <note> element above, should be mapped to more specific MODS elements. Also, not all notes in existing MARC 21 records provide information about the intellectual content of the resource described; these need not be mapped into the MODS record. In an OAI-PMH environment, where end users will be directed by service providers back to the original institution's site and a complete metadata record for access, <note> content that is not about the content of the resource may not need to be included in the MODS record made available for harvesting. Several examples, using MARC 21 and EAD, of mappings to more specific MODS elements than <note> are given in the chart below:

MARC 21 field	EAD element	Type of content	More specific MODS mapping
501	Nested <c01>, <c02>, etc.	Indicates that the item being described is physically part of a larger entity.	<relatedItem type="host"> <note>
506	<accessrestrict>	Indicates restrictions on access.	<accessCondition>
520	<scopecontent>	A summary describing the scope and general contents of the item being described.	<abstract>
521	N/A	The specific audience or intellectual level for which the content of the described item is considered appropriate.	<targetAudience>

530	<altformavail>	Identifies additional physical form(s) in which the described item is available.	<relatedItem type="otherFormat"> <note>
534	<originalsloc>	Describes the original version when the described item is a surrogate or reproduction.	<abstract>
535	<originalsloc> <i>OR</i> <altformavail>	Indicates the name and address of the repository that has custody of the original or a duplicate copy of the described material when either is housed in a repository different from that of the material being described	<location> <physicalLocation>
546	<langmaterial>	Textual information on the language of the described materials.	<language>

Attributes:**type [OPTIONAL]**

There are no guidelines and no controlled vocabulary for this attribute. Use of uncontrolled values – particularly within attributes - have limited usefulness for aggregators.

displayLabel [OPTIONAL]

The `displayLabel` attribute may be used to indicate the preferred labeling when displayed by a metadata aggregator. Include the text preferred and capitalization, but do not include delimiters such as colons. Metadata aggregators may choose to ignore this attribute.

EXAMPLES OF <note> USE

```
<note>Based on the play "I am a camera" by John Van Druten, and "Berlin stories" by Christopher Isherwood.</note>
```

```
<note>Thesis (M.A.)--Yale University, 1974.</note>
```

```
<note displayLabel="Visual characteristics">Medium range shot, vertical composition</note>
```

```
<note>170 of the 177 pages of the original have been digitized. Prefaces and appendices were excluded.</note>
```

```
<note>Digital file includes a piano score composed and performed by Philip Carli.</note>
```

```
<note>Perspective map not drawn to scale.</note>
```

USE BY AGGREGATORS

Aggregators may choose to index and display content in <note> directly to end users. However, there is no requirement or obligation for them to do so. Therefore, the <note> field should not be relied upon to communicate information, critical to use or access, that is better suited for other fields.

MAPPING TO DUBLIN CORE

The *MODS to Dublin Core Metadata Element Set Mapping Version 3.0 (June 7, 2005)* recommend mapping each <note> element to a <dc:description> element.

MODS examples above expressed in Dublin Core:

```
<dc:description>Based on the play "I am a camera" by John Van Druten,  
and "Berlin stories" by Christopher Isherwood.</dc:description>
```

```
<dc:description>Thesis (M.A.)--Yale University, 1974.</dc:description>
```

```
<dc:description>Medium range shot, vertical  
composition</dc:description>
```

```
<dc:description>170 of the 177 pages of the original have been  
digitized. Prefaces and appendices were excluded.</dc:description>
```

```
<dc:description>Digital file includes a piano score composed and  
performed by Philip Carli. </dc:description>
```

```
<dc:description>Perspective map not drawn to scale. </dc:description>
```

RELATIONSHIP TO DLF/NSDL BEST PRACTICES FOR SHAREABLE METADATA

Notes as a broad class of elements are not covered in the *Best Practices for Shareable Metadata*.

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<subject>

MODS Element	Attributes	Subelements
<subject>	authority	
	encoding - <temporal>	<topic>
	point - <temporal>	<geographic>
	keyDate - <temporal>	<temporal>
	type - <titleInfo>	<titleInfo>
	authority -	<name>
	<titleInfo>	<genre>
	displayLabel -	<hierarchicalGeographic>
	<titleInfo>	<cartographics>
	type - <name>	<geographicCode>
	authority - <name>	<occupation>
authority -	<geographicCode>	

SUMMARY OF REQUIREMENTS

The *DLF/Aquifer Implementation Guidelines for Shareable MODS Records* require, when applicable, the use of at least one <subject> element in a record. Values for <subject> indicate what content is found within or represented by the work, and typically answer such questions as *who, what, where, and when*.³⁵ These guidelines highly recommend the use of subject values from a controlled list and the designation of this list in the *authority* attribute. Parsing subject values into subelements, rather than placing them in <subject><topic> strings, is not required but is highly recommended, when possible. Repeat distinct, multiple subjects in separate <subject> fields.

DEFINITION FROM MODS USER GUIDELINES

A term or phrase representing the primary topic(s) on which a work is focused.

DISCUSSION OF USE

For the purposes of records created according to these guidelines, information in <subject> describes subject content represented in or by the work, and typically answers such questions as *who, what, where, and when*.

Whether or not the use of <subject> is applicable depends upon who might search for an item outside its local context and how they are likely to search for it. For instance, topical subject content may not apply to some items, such as abstract art. If researchers are likely to be interested in the form or genre of an item, and not its subject content, using the

³⁵ The discussion of subjects in *Descriptive Metadata Guidelines for RLG Cultural Heritage Materials* guides much of this understanding of subject content: http://www.rlg.org/en/pdfs/RLG_desc_metadata.pdf. Description of subject content may not be applicable to some works; in those cases, use of a <subject> element is not required. See "Discussion of Use" for more information on the appropriate use of this element.

<genre> element (**not** the subelement under <subject>) may be most appropriate. However, in many instances, using appropriate <subject> values can greatly enhance users' ability to locate relevant works. Enter as many specific terms as necessary to capture subject content, and be consistent in the formatting of subject terms.

It is highly recommended that subject terms come from a controlled vocabulary or formal classification scheme and that this source is identified in the authority attribute. Select controlled vocabularies that are most relevant to and frequently used by the communities likely to benefit from the described materials, and explicitly identify this source. If a subject term is appropriate or well-known among a group of users, and it is not included in a formal classification scheme, it may still be included, but the source of the term should be identified. Place any locally-developed vocabulary term in a separate <subject> group and define its authority as local. If the term is not controlled by a formal classification scheme or a locally developed scheme, authority is not defined. New subject authorities can be registered with the Library of Congress; email ndmso@loc.gov to suggest an authority.

As described below, subelements within <subject> are used to differentiate subject content. While MODS does allow for placing multiple values in a single <subject><topic> string, parsing subject terms into separate subelements is the preferred practice and highly recommended in these guidelines. Express multiple subjects in repeated <subject> fields.

Attributes:

authority [RECOMMENDED IF APPLICABLE]

The name of the authoritative list for a controlled value is recorded here. An authority attribute may also be used to indicate that a subject is controlled by a record in an authority file. Authority should be specified for all terms, whether they come from a controlled vocabulary, formal scheme, or are locally developed. The authority attribute for a locally-developed scheme should be defined as authority="local". If no list or scheme controls the terms used, omit the authority attribute.

Specify authority at the <subject> level in most cases (exceptions are <subject><name>, <subject><titleInfo>, and <subject><geographicCode>). If providing subjects from different authorities, use a separate <subject> element for each. This is required even when subjects differ only at the subelement level.

Subelements:

<topic> [RECOMMENDED IF APPLICABLE]

Use this subelement to indicate any primary topical subjects that are not appropriate in the <geographic>, <temporal>, <titleInfo>, or <name> subelements. While it is highly recommended that subject values be parsed into subelements, they may also be listed as a string under <subject><topic>. This subelement has no attributes.

If a controlled subject term is used, indicate authority using the `authority` attribute at the `<subject>` level. Locally developed terms should be listed separately, with `local` indicated as the source using the `authority` attribute at the `<subject>` level. If the term is uncontrolled (for example, if it is a keyword from legacy records), do not use the `authority` attribute.³⁶

`<geographic>` [RECOMMENDED IF APPLICABLE]

Use this subelement for geographic subject terms that are not parsed within the `<hierarchicalGeographic>` element (see below). If the geographic name is part of a corporate body (for example, United States. Senate), it is coded as `<name>`, not `<geographic>`. This subelement has no attributes.

If a controlled subject term is used, indicate authority using the `authority` attribute at the `<subject>` level.

`<temporal>` [RECOMMENDED IF APPLICABLE]

Use this subelement for chronological subject terms or temporal coverage. It may be expressed as a controlled subject term or as a structured date using the same data definition as MODS dates.

If a controlled subject term is used, indicate authority using the `authority` attribute at the `<subject>` level. Normalized dates are critical for effective searching. Dates should be formatted consistently, following the structure dictated by the formatting source used. Indicate this source using the `encoding` attribute. Note that the `point` attribute is used to indicate a date range, *not* a single date.

Attributes of `<temporal>`

`encoding` [RECOMMENDED]

If a structured date is used, indicate the formatting source using the `encoding` attribute. These guidelines recommend using the following value for the `encoding` attribute:

- `w3cdtf` - used for the ISO 8601 profile to specify YYYY-MM-DD date patterns

`point` [RECOMMENDED IF APPLICABLE]

The `point` attribute can be used to encode date ranges using the following values:

- `start` - used for first date of a range
- `end` - used for the end date of a range

³⁶ The concept of an "uncontrolled term" is misleading: ideally, all terms used as subject values should be controlled, whether that control comes from a formal classification scheme or from a locally developed vocabulary. But we also recognize that if one is converting legacy records, subject values may not be controlled. However, the recommended best practice is to pull from controlled schema, or to make the locally developed list available.

If no `point` attribute is specified, date is assumed to be a single date.

keyDate [NOT RECOMMENDED]

Used to specify a single date which should be used by OAI service providers for date indexing, sorting, and display. *Only one date element should be specified as a key date.* These guidelines recommend that the `keyDate` appear in the `<originInfo>` element (see page 31).

<titleInfo> [RECOMMENDED IF APPLICABLE]

Use this subelement to indicate a title used as a subject. Note that titles frequently appear with a name (i.e., names of composers included with titles of musical works).

All subelements and attributes used under the top-level element `<titleInfo>` may be used with this subelement; use the `<titleInfo>` section of the guidelines for more explicit guidance (see page 14).

These guidelines highly recommend using the `authority` attribute at this level to indicate titles controlled by an authority.

<name> [RECOMMENDED IF APPLICABLE]

Use this subelement to indicate a name used as a subject. All subelements and attributes used under the top-level element `<name>` may be used; use the `<name>` section of the guidelines for more explicit guidance (See page 19).

These guidelines highly recommend using the `authority` attribute to indicate if a name is controlled by a record in an authority file.

<genre> [OPTIONAL]

MODS 3.2 added `<genre>` as a subelement under `<subject>`, which allows legacy complex subjects (for example LC Subject Headings) with a form/genre subelement to be more appropriately represented in MODS. These guidelines make use of this subelement an option but give strong preference to use of the `<genre>` element for form/genre terms whenever possible (see page 29).

<hierarchicalGeographic> [RECOMMENDED IF APPLICABLE]

This subelement includes a hierarchical form of a place name relating to the content of the resource that is both readable by humans and parsable by machines. This form can be applied to the degree of specificity that is known or relevant and used to generate browseable hierarchies even when values are specified to different levels. Explicit inclusion of the complete hierarchy is of potential benefit for automated consultation of a gazetteer to derive map coordinates or to support a map-based interface for searching by country or state. This subelement has no attributes.

Authority should be specified at the `<subject>` level.

Subelements of <hierarchicalGeographic>

The following subelements are defined for <hierarchicalGeographic> :

<continent>
<country>
<province>
<region>
<state>
<territory>
<county>
<city>
<island>
<area>

See the *MODS User Guidelines* for more information on using these subelements.

<cartographics> [OPTIONAL]

This element includes cartographic data indicating spatial coverage. If desired, cartographic elements may be bound together with a geographic name (hierarchical or otherwise) within a <subject> element. This subelement has no attributes.

This subelement is not fully developed: specific recommendations for its use are not possible at this point. Use established standards in your area to guide use of this subelement.

Subelements for <cartographics>

The following subelements are defined for <cartographics>:

<coordinates>
<scale>
<projection>

See the *MODS User Guidelines* for more information on using these subelements.

<geographicCode> [RECOMMENDED IF APPLICABLE]

Use this subelement to indicate a geographic code associated with the content of a resource. The DLF guidelines recommends the use of a <geographic> or <hierarchicalGeographic> value in addition to <geographicCode> to improve the searchability of a record. The geographic code should be from an established encoding scheme and indicated in the *authority* attribute.

Attributes for <geographicCode>

***authority* [REQUIRED]**

The *authority* attribute is used to specify the source of the controlled geographic area code. Values for this attribute are:

marcgac
marccountry
iso3166

For those not already using MARC, these guidelines recommend using `iso3166` as the authority value for `<geographicCode>`.

`<occupation>` [OPTIONAL]

Include this subelement a term that is descriptive of the occupation reflected in the contents of the described materials. It is not used to list the occupations of the creators of the described materials, unless those occupations are significantly reflected in the materials themselves or bear some relationship to the materials. This subelement has no attributes; specify authority at the `<subject>` level.

EXAMPLES OF `<subject>` USE

With parsed and repeated `<subject>` values, with LCSH specified as the authority at the `<subject>` level

```
<subject authority="lcsch">
  <topic>Railroads</topic>
  <geographic>West (U.S.)</geographic>
  <genre>Maps</genre>
</subject>
```

With `<subject>` values recorded in a string, with LCSH specified as the authority at the `<subject>` level

```
<subject authority="lcsch">
  <topic>Railroads--West (U.S.)--Maps</topic>
</subject>
```

Topical: With `<topic>` values recorded in a string, and AAT specified as the authority at the `<subject>` level

```
<subject authority="aat">
  <topic>vandalism</topic>
</subject>
```

Topical: With `<topic>` grouped with other `<subject>` subelements that use same authority, with LCSH and `local` specified separately as authority at the `<subject>` level

```
<subject authority="lcsch">
  <topic>Funeral rites and ceremonies</topic>
  <geographic>Louisiana</geographic>
  <geographic>New Orleans</geographic>
</subject>
<subject authority="local">
  <topic>Jazz funerals</topic>
</subject>
```

Geographic: With LCSH specified as the authority at the `<subject>` level

```
<subject authority="lcsch">
  <geographic>United States</geographic>
</subject>
```

Geographic: With TGM specified as the authority at the <subject> level

```
<subject authority="lctgm">
  <topic>Educational buildings</topic>
  <geographic>Washington (D.C.)</geographic>
  <temporal>1890-1910</temporal>
</subject>
```

Temporal: With the authority attribute used when expressing <temporal> as a chronological subject term

```
<subject authority="rvm" lang="fre">
  <topic>Église catholique</topic>
  <topic>Histoire</topic>
  <temporal>20e siècle</temporal>
</subject>
```

Temporal: With the encoding attribute used to indicate a single date in time

```
<subject>
  <temporal encoding="w3cdtf">1975-05-15</temporal>
</subject>
```

Temporal: With the encoding and point attributes used to indicate a date range

```
<subject>
  <temporal encoding="w3cdtf" point="start">2001-09-11</temporal>
  <temporal encoding="w3cdtf" point="end">2003-03-19</temporal>
</subject>
```

Title: With name and topical subelement

```
<subject authority="lcsh">
  <name type="personal" authority="naf">
    <namePart>Woolf, Virginia</namePart>
    <namePart type="date">1882-1941</namePart>
  </name>
  <titleInfo>
    <title>Three Guineas</title>
  </titleInfo>
  <topic>Criticism and interpretation</topic>
</subject>
```

Name: With type and authority attributes and topical subelement

```
<subject authority="lcsh">
  <name type="personal" authority="naf">
    <namePart>Frankenthaler, Helen</namePart>
    <namePart type="date">1928-</namePart>
  </name>
  <topic>Painting--Exhibitions</topic>
</subject>
```

Genre:

```
<subject authority="lcsh">
  <name type="personal" authority="naf">
```

```
<namePart>Edmondston, Catherine Devereux</namePart>
<namePart type="date"> 1823-1875</namePart>
</name>
<genre>Diaries</genre>
</subject>
```

Hierarchical Geographic: With authority attribute

```
<subject authority="tgn">
  <hierarchicalGeographic>
    <country>United States</country>
    <state>Mississippi</state>
    <county>Harrison</county>
    <city>Biloxi</city>
  </hierarchicalGeographic>
</subject>
```

Cartographic

```
<subject>
  <cartographics>
    <coordinates>E 72°--E 148°/N 13°--N 18°</coordinates>
    <scale>1:22,000,000</scale>
    <projection>Conic proj</projection>
  </cartographics>
</subject>
```

Geographic code:

```
<subject authority="lcsch">
  <geographic>United States</geographic>
  <geographicCode authority="iso3166">us</geographicCode>
</subject>
```

Occupation: With LCSH listed as authority at the <subject> level

```
<subject authority="lcsch">
  <occupation>Migrant laborers</occupation>
  <topic>School district case files</topic>
</subject>
```

Occupation: With AAT listed as authority at the <subject> level

```
<subject authority="aat">
  <occupation>printmaker</occupation>
</subject>
```

USE BY AGGREGATORS

Subject matter is a critical piece of information for end users to determine the suitability of a resource for informational needs; data providers should assume this field will be exposed by aggregators. Care should be taken in situations in which subjects are assigned by batch process to ensure that the contents of individual items are represented accurately.

Although information on subject authorities is provided via the model proposed in these guidelines, aggregators should not be expected to perform any normalization, linking or other processing (although they are free to do so). The authority information is important, however, to communicate to the aggregator the nature of subject analysis that has taken place, and to reduce semantic confusion based on local subject lists using the same terms as shared authority files.

MAPPING TO DUBLIN CORE

Using the basis provided by the *MODS to Dublin Core Metadata Element Set Mapping Version 3.0 (June 7, 2005)*, these guidelines suggest the following crosswalks between MODS element <subject> and simple Dublin Core elements.

MODS <subject> subelements	DC elements
<topic> <name> <titleInfo> <occupation>	<dc:subject>
<geographic> <temporal> <hierarchicalGeographic>	<dc:coverage>
<genre>	<dc:type>
<cartographics> <geographicCode>	[no field suggested]

MODS examples above expressed in Dublin Core:

```

<dc:subject>Railroads</dc:subject>
<dc:coverage>West (U.S.)</dc:coverage>
<dc:type>Maps</dc:type>

<dc:subject>Railroads--West (U.S.)--Maps</dc:subject>

<dc:subject>vandalism</dc:subject>

<dc:subject>Funeral rites and ceremonies</dc:subject>
<dc:coverage>Louisiana</dc:coverage>
<dc:coverage>New Orleans</dc:coverage>
<dc:subject>Jazz funerals</dc:subject>

<dc:coverage>United States</dc:coverage>

<dc:subject>Educational buildings</dc:subject>
<dc:coverage>Washington (D.C.)</dc:coverage>
<dc:coverage>1890-1910</dc:coverage>

<dc:subject>Église catholique</dc:subject>
<dc:subject>Histoire</dc:subject>
<dc:coverage>20e siècle</dc:coverage>

<dc:coverage>1975-05-15</dc:coverage>

<dc:coverage>2001-09-11 - 2003-03-19</dc:coverage>

```

<dc:subject>Woolf, Virginia, 1882-1941</dc:subject>
<dc:subject>Three Guineas</dc:subject>
<dc:subject>Criticism and interpretation</dc:subject>

<dc:subject>Frankenthaler, Helen, 1928-</dc:subject>
<dc:subject>Painting--Exhibitions</dc:subject>

<dc:subject>Edmondston, Catherine Devereux, 1823-
1875</dc:subject>
<dc:type>Diaries</dc:type>

<dc:coverage>United States</dc:coverage>
<dc:coverage>Mississippi</dc:coverage>
<dc:coverage>Harrison</dc:coverage>
<dc:coverage>Biloxi</dc:coverage>

<dc:subject>Migrant laborers</dc:subject>
<dc:subject>School district case files</dc:subject>

<dc:subject>printmaker</dc:subject>

RELATIONSHIP TO THE DLF/NSDL BEST PRACTICES FOR SHAREABLE METADATA

The Subjects/Topics section in the *DLF/NSDL Best Practices for Shareable Metadata* discusses the use of subjects.³⁷ The “Providing supplemental information to service providers” is also relevant.³⁸

³⁷ <http://oai-best.comm.nsd.org/cgi-bin/wiki.pl?SubjectPractices>

³⁸ <http://oai-best.comm.nsd.org/cgi-bin/wiki.pl?DocumentingSource>

<classification>

MODS Element	Attributes	Subelements
<classification>	authority edition	None

SUMMARY OF REQUIREMENTS

The *DLF/Aquifer Implementation Guidelines for Shareable MODS Records* state that the use of the <classification> element is optional. This element is repeatable.

DEFINITION FROM MODS USER GUIDELINES

A designation applied to a resource that indicates the subject by applying a formal system of coding and organizing resources according to subject areas.

DISCUSSION OF USE

These guidelines recommend that <classification> contain only classification numbers and call numbers whose authorities are referenced in *Source Codes for Classification* maintained by the Library of Congress.³⁹ It is left to the institution's discretion whether to truncate assigned call numbers to just the formal classification segment (for example, QA76.17), or to include the full call number (for example, QA76.17 .T55). Local classification schemes and identifiers should be included in the <identifier> element (see page 73).

Attributes:

authority [REQUIRED]

All occurrences of the MODS <classification> element should contain the attribute *authority* to indicate the name of the classification scheme used in the element. Values for this attribute should come from the Library of Congress "Source Codes for Classification" referenced above.

edition [RECOMMENDED IF APPLICABLE]

This attribute designates the edition of the classification scheme named in the *authority* attribute if said scheme is issued in editions.

EXAMPLES OF <classification> USE

```
<classification authority="lcc">TH6493</classification>
```

```
<classification authority="ddc" edition="11">683</classification>
```

³⁹ <http://www.loc.gov/marc/sourcecode/classification/>

```
<classification authority="nlm">QW 161.5.S8</classification>
```

```
<classification authority="udc">669.183.211.18</classification>
```

USE BY AGGREGATORS

<classification> is not generally used for searching or browsing by aggregators, but may appear in the record display.

MAPPING TO DUBLIN CORE

The *MODS to Dublin Core Metadata Element Set Mapping Version 3.0 (June 7, 2005)* recommends mapping the <classification> element to <dc:subject>.

MODS examples above in Dublin Core:

```
<dc:subject>TH6493</dc:subject>
```

```
<dc:subject>683</dc:subject>
```

```
<dc:subject>QW 161.5.S8</dc:subject>
```

```
<dc:subject>669.183.211.18</dc:subject>
```

RELATIONSHIP TO DLF/NSDL BEST PRACTICES FOR SHAREABLE METADATA

Although related to the section, Recording Subjects in OAI Records⁴⁰, classification of resources is not directly addressed in the DLF/NSDL *Best Practices for Shareable Metadata*.

⁴⁰ <http://oai-best.comm.nsdsl.org/cgi-bin/wiki.pl?SubjectPractices>

<relatedItem>

MODS Element	Attributes	Subelements
<relatedItem>	type xlink:href displayLabel	All MODS elements can appear as subelements of <relatedItem>.

SUMMARY OF REQUIREMENTS

The *DLF/Aquifer Implementation Guidelines for Shareable MODS Records* recommend the use of the <relatedItem> element in three cases:

1. to point to a full metadata record for a related item
2. to provide contextual information useful for full description of the resource.
3. to provide additional information about intellectual constituent units of the resource being described

This element is repeatable.

DEFINITION FROM MODS USER GUIDELINES

Information that identifies other resources related to the one being described.

<relatedItem> is a container element under which any MODS element may be used as a subelement.

DISCUSSION OF USE

Although the MODS <relatedItem> element allows multiple items to be described in a hierarchical fashion within a single MODS record, the guidelines recommend that the use of the <relatedItem> element be restricted to the three cases described below. Do not use multiple nested <relatedItem> elements within a single MODS record to describe an entire collection in metadata records shared for aggregation. As stated in the *MODS User Guidelines*, "deep recursion may be counter-productive."

The core MODS record should describe the resource at the level metadata aggregators should return as matches to user queries. Information about the original from which a digital surrogate or reproduction was made should be included in the main record. Any subelements of the <relatedItem> element should describe related material of only subsidiary interest, helpful for identifying and completely describing a resource, or providing context for the resource which may be useful for retrieval.

The guidelines recommend the use of the <relatedItem> element in the following three cases:

1. To link to records for related items, without duplicating the metadata for these items as subelements of <relatedItem>, using the xlink attribute. Best practices

- for use of the XLink language are still emerging, but potentially the link could be used by aggregators to retrieve or interact with the remote metadata. No subelements of `<relatedItem>` should be used in this case. Note that a link to give user access to a described related resource would be encoded in `<relatedItem><location><url>`.
2. To provide contextual information about the item being described in relationship to other items. Applicable subelements of `<relatedItem>` should be used. Most frequently, these subelements are used to describe a host item, series, or other version.
 3. To provide information about constituent parts when a physical object being described (for example a compact disc) contains multiple intellectual items that require description (for example tracks on a compact disc).

Attributes:

type [REQUIRED]

The type attribute describes the relationship between the resource in `<relatedItem>` and the resource in the parent MODS record. The guidelines recommend the following values for each of the recommended uses of `<relatedItem>`:

Case 1: Linking

Use any value listed in these guidelines, as appropriate.

Case 2: Context

`host` - Use this value to describe a host or parent resource, for example a book in which an article appears or a collection in which an item belongs

`constituent` - Use this value to describe parts of the resource, except information that falls within the scope of the MODS `<tableOfContents>` element.

`series` - Use this value to describe a named series of which the resource is a part.

`otherVersion` - Use this value to describe other versions of the work contained in the resource.

Case 3: Constituent parts

`constituent` - Use this value to describe constituent parts of the resource that warrant separate description. Do not use if this information is more appropriately placed in the MODS `<tableOfContents>` element.

xlink:href [RECOMMENDED IF APPLICABLE]

Use the `xlink:href` attribute to link to external resources. These guidelines recommend that this attribute, when used, contain the URI of a MODS record or an OAI GetRecord request, if available, for a related resource. The 'info' URI scheme supported by the Library of Congress can also be used to encode an external link here using an LCCN or DOI (see <http://www.loc.gov/standards/uri/info.html> for more information). These

guidelines also recommend that no subelements appear under <relatedItem> when this attribute is used.

displayLabel [OPTIONAL]

The `displayLabel` attribute may be used to indicate the preferred labeling when displayed by a metadata aggregator. Include the text preferred and capitalization, but do not include delimiters such as colons. Metadata aggregators may choose to ignore this attribute.

Subelements:

All MODS elements may appear as subelements of <relatedItem>. Follow these guidelines in the use of the subelements.

EXAMPLES OF <relatedItem> USE

Case 1: Linking

```
<relatedItem displayLabel="Preceding Title" type="preceding"
xlink:href="http://hdl.loc.gov/umich.dli.moa/AGE3371"/>

<relatedItem xlink:href="info:lccn/85000002" />
```

Case 2: Context

```
<relatedItem displayLabel="Appears in" type="host">
  <titleInfo>
    <title>Post-Fordism</title>
    <subTitle>A Reader</subTitle>
  </titleInfo>
  <name type="personal">
    <namePart type="given">Ash</namePart>
    <namePart type="family">Amin</namePart>
    <role>
      <roleTerm type="text">editor</roleTerm>
    </role>
  </name>
  <originInfo>
    <dateIssued>1994</dateIssued>
    <publisher>Blackwell Publishers</publisher>
    <place>
      <placeTerm type="text">Oxford</placeTerm>
    </place>
  </originInfo>
  <part>
    <extent unit="page">
      <start>23</start>
      <end>45</end>
    </extent>
  </part>
</relatedItem>
```

Case 3: Constituent parts

Example of a single track in a MODS record for a compact disc.

```
<relatedItem type="constituent" ID="DMD_disc01_tr001">
  <titleInfo type="uniform" authority="naf">
    <title>Chaconne von Vitali</title>
  </titleInfo>
  <titleInfo>
    <title>Chaconne</title>
  </titleInfo>
  <name type="personal" authority="naf">
    <namePart>Vitali, Tomaso Antonio</namePart>
    <namePart type="date">1663-1745</namePart>
    <role>
      <roleTerm authority="marcrelator"
        type="text">composer</roleTerm>
    </role>
  </name>
  <name type="personal" authority="naf">
    <namePart>Blatt, Josef</namePart>
    <role>
      <roleTerm authority="marcrelator"
        type="text">performer</roleTerm>
    </role>
  </name>
  <physicalDescription>
    <extent>9:55</extent>
  </physicalDescription>
  <note type="Standard Restriction">This item is unavailable due to
  copyright restrictions.</note>
  <note type="performers">Nathan Milstein, violin ; Josef Blatt,
  piano.</note>
  <note type="statement of responsibility">Tomaso Vitali</note>
  <note>Originally for violin and continuo; arr. for violin and
  piano.</note>
  <note>Attributed to Tomaso Vitali, but most likely not by
  him.</note>
  <subject authority="lcsch">
    <topic>Chaconnes (Violin and piano), Arranged.</topic>
  </subject>
</relatedItem>
```

USE BY AGGREGATORS

Links to related items may be displayed as links in record displays. Some related item elements for some types of relationships may be indexed (for example, series <titleInfo> might be indexed as a title or as a series title), and included in record display. Some elements of constituent parts may be indexed and included in record display.

MAPPING TO DUBLIN CORE

The *MODS to Dublin Core Metadata Element Set Mapping Version 3.0 (June 7, 2005)* recommends mapping the contents of the <relatedItem> element to the <dc:relation> element in simple Dublin Core. However, caution in mapping is recommended because <relatedItem> elements with many subelements may yield "an incomprehensible value." At the very least, mapping multiple subelements to the single <dc:relation> element will require addition of punctuation and re-ordering of elements to achieve the desired result. These guidelines suggest that the type attribute of the <relatedItem> element may be used to determine a specialized mapping for each type.

MODS examples above in Dublin Core:

```
<dc:relation>http://hdl.loc.gov/umich.dli.moa/AGE3371
</dc:relation>
```

```
<dc:relation>Amin, Ash, editor. Post-Fordism: A Reader. Oxford:
Blackwell Publishers, 1994: 23-45.</dc:relation>
```

RELATIONSHIP TO DLF/NSDL BEST PRACTICES FOR SHAREABLE METADATA

The "Describing Versions and Reproductions"⁴¹ and "Bibliographic Citation"⁴² pages in the DLF/NSDL *Best Practices for Shareable Metadata* address issues raised by the MODS <relatedItem> element.

⁴¹ <http://oai-best.comm.nsd.org/cgi-bin/wiki.pl?DigitalTactileResource>

⁴² <http://oai-best.comm.nsd.org/cgi-bin/wiki.pl?BibliographicCitation>

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<identifier>

MODS Element	Attributes	Subelements
<identifier>	type invalid displayLabel	none

SUMMARY OF REQUIREMENTS

The *DLF/Aquifer Implementation Guidelines for Shareable Metadata Records* recommend the use of at least one <identifier> element with the `type` attribute containing appropriate values in each MODS record. This element is repeatable.

DEFINITION FROM MODS USER GUIDELINES

A unique standard number or code that distinctively identifies a resource.

DISCUSSION OF USE

The <identifier> element is recommended in these guidelines and refers to the digital resource being described or to its analog equivalent. In the shared metadata context, the <identifier> should identify the object universally; local call numbers or other identifiers, therefore, are not generally suitable. However, if a local identifier is used, it should be indicated as such using the `type` attribute. <identifier> has no subelements, but does require the `type` attribute. Repeat this element as required.

The guidelines recommend that <identifier> be used to encode any identifying character string uniquely associated with a resource, but reserves <location><url> for encoding the URL to the resource in its repository context. Persistent URIs that serve both as a unique identifier and a URL to the resource in its repository context should be encoded using both elements.

These guidelines require that all <identifier> URLs follow the URI specifications laid out in the DLF/NSDL Best Practices for Shareable Metadata Content.⁴³

Attributes:**type [REQUIRED]**

All occurrences of the <identifier> element must contain the `type` attribute to indicate the type of the identifier. If a local identifier is used, it should be indicated as such using the `local` value. Following is a list of some of the suggested values for <identifier>, but this is not a controlled list.

⁴³ <http://oai-best.comm.nsd.gov/cgi-bin/wiki.pl?IdentifyingTheResource>

Values for digital object:

ark (Archival Resource Key)
doi (Digital Resources Identifier)
hdl (Handle)
uri (Uniform Resource Identifier)

Values for analog original:

isbn (International Standard Book Number)
ismn (International Standard Music Number)
isrc (International Standard Recording Code)
issn (International Standard Serials Number)
issue number
istc (International Standard Text Code)
lccn (Library of Congress Control Number)
matrix number
music plate
music publisher
sici (Serial Item and Contribution Identifier)
stock number
upc (Universal Product Code)

invalid [RECOMMENDED IF APPLICABLE]

This attribute should be used only to signify a canceled or invalid identifier. If used, its value must be `yes` (`invalid="yes"`).

displayLabel [OPTIONAL]

The `displayLabel` attribute may be used to indicate the preferred labeling when displayed by a metadata aggregator. Include the text preferred and capitalization, but do not include delimiters such as colons. Metadata aggregators may choose to ignore this attribute.

EXAMPLES OF <identifier> USE

Encoding a link to a Web page:

```
<identifier  
type="uri">http://hemi.es.its.nyu.edu/journal/2\_1/ramalho\_por.html</id  
entifier>
```

Encoding an obsolete link to the same Web page:

```
<identifier type="uri"  
invalid="yes">http://hemi.tsoa.nyu.edu/journal/2\_1/ramalho\_por.html</id  
entifier>
```

Other examples:

```
<identifier type="lccn">00694010</identifier>
```

```
<identifier type="hdl">hdl:loc.mbrsmi/animp.4068</identifier>
```

USE BY AGGREGATORS

<identifier> is displayed in some aggregators but is generally not used for retrieval. It may in the future be used to de-duplicate aggregations.

MAPPING TO DUBLIN CORE

The MODS <identifier> element, along with the <location><URL> subelement, are both mapped to <dc:identifier> in the *MODS to Dublin Core Metadata Element Set Mapping Version 3.0 (June 7, 2005)*.

MODS examples above expressed in Dublin Core:

```
<dc:identifier>http://hemi.es.its.nyu.edu/journal/2_1/ramalho_por.html</dc:identifier>
```

```
<dc:identifier>00694010</dc:identifier>
```

```
<dc:identifier>hdl:loc.mbrsmi/animp.4068</dc:identifier>
```

RELATIONSHIP TO DLF/NSDL BEST PRACTICES FOR SHAREABLE METADATA

Identifier is addressed in the "Recommendations for classes of data elements" under "Identifiers."⁴⁴ These guidelines recommend the use of the `type` attribute in lieu of prefixing identifiers, as recommended in *NSDL/DLF Best Practices for Shareable Metadata*.

⁴⁴ <http://oai-best.comm.nsd.org/cgi-bin/wiki.pl?IdentifyingTheResource>

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<location>

MODS Element	Attributes	Subelements
<location>	displayLabel - <physicalLocation> authority - <physicalLocation> access - <url> usage - <url> note - <url> displayLabel - <url> dateLastAccessed - <url>	<physicalLocation> <url>

SUMMARY OF REQUIREMENTS

The *DLF/Aquifer Implementation Guidelines for Shareable MODS Records* require the use of at least one <location> element with at least one <url> subelement. One and only one <location><url> subelement is required to have the usage attribute value "primary display". This element is repeatable.

DEFINITION FROM MODS USER GUIDELINES

"location" identifies the institution or repository holding the resource, or a remote location in the form of a URL where it is available.

DISCUSSION OF USE

Use of at least one <location> element with the subelement <url> is required by these guidelines. It is required that one and only one <location><url> must include the usage attribute value "primary display". Many aggregators may include only one URL in their brief display. Use of usage="primary display" allows aggregators to easily identify which URL to display for their users. If a record describes multiple items (a multi-volume set, for example), these guidelines strongly recommend identifying a primary entry point for these.

These guidelines also recommend that the "access" attribute with the appropriate value also be used. Best practice is that the "primary display" URL is a link to the resource with its contextual material (for example metadata, navigation to the collection homepage). If the primary link to a resource is to a stand alone version of the resource (such as a JPEG image only), an end user will have no context except for the metadata on the service provider's site. At minimum, the URL should point to a page that contains the resource and a navigation bar that allows user to reach the collection homepage. It is highly desirable that this page also include the descriptive metadata for the resource.

In addition, the <location> element with the <url> subelement may be used to encode information about the location of other versions, such as a thumbnail, of the digital

resource. These guidelines recommend that in these cases the "access" attribute be used to identify the version whenever possible. The <location> element with the <physicalLocation> subelement may also be used to point to the location of the analog resource. However, it is not necessary nor always desirable to include the location of all digital and/or analog versions of the described resource. Only include that information which is useful and important to the aggregator and to the end user.

It is recommended that all URLs used with the <location> element be persistent.

Subelements:

<physicalLocation> [OPTIONAL]

Use this subelement to identify the institution or repository holding the resource, or from which it is available. Within these guidelines, it identifies the physical, institutional home of an analog resource that has been digitized. It is not recommended to include for aggregation a physical location for the location of digital files.

Attributes of <physicalLocation>

displayLabel [OPTIONAL]

The displayLabel attribute may be used to indicate the preferred labeling when displayed by a metadata aggregator. Include the text preferred and capitalization, but do not include delimiters such as colons. Metadata aggregators may choose to ignore this attribute.

authority [RECOMMENDED IF APPLICABLE]

Use this attribute to indicate the controlled vocabulary used for the value in the <physicalLocation> subelement. Permissible values for this attribute are marccorg and oclcorg. Use the naming authority appropriate to each value.⁴⁵ If this attribute is not used, the value is assumed to be a natural language name and/or address. In the examples below, the same organization is encoded two different ways, the first using the OCLC code for that organization, the second in natural language form.

<url> [REQUIRED]

Use of at least one <location> element with the subelement <url> with the usage attribute value "primary display" is required by these guidelines. This subelement contains the Uniform Resource Location (URL) for the resource. The URL provided should be persistent. The guidelines recommend that all URLs encoded within the <url> subelement should follow the URI specifications laid out in the *DLF/NSDL Best Practices for Shareable Metadata*.⁴⁶

⁴⁵See <http://www.loc.gov/marc/sourcecode/organization/organizationsource.html>.

⁴⁶<http://oai-best.comm.nsd.org/cgi-bin/wiki.pl?IdentifyingTheResource>

The `<url>` subelement may also be used to indicate locations of additional versions of the digital resource such as thumbnails. Whenever possible the `access` attribute should be used to help the aggregator determine what versions of the resource are available.

Attributes of `<url>`

usage [REQUIRED]

This attribute has one enumerated value:

`primary display`

This attribute must be used with one and only one instance of `<location><url>`. This attribute indicates to the aggregator which URL to include in a short display of a metadata record. As stated above, best practice is that the "primary display" URL is a link to the resource with its contextual material (for example metadata, navigation to the collection homepage).

access [RECOMMENDED IF APPLICABLE]

This attribute has three enumerated values:

`preview`
`raw object`
`object in context`

Use of this attribute is recommended with all instances of `<location><url>`. This attribute helps a metadata aggregator determine what a URL is likely to link to and can help determine which URL to use for specific purposes.

note [OPTIONAL]

The note attribute may be used to include notes associated with a URL. Use this attribute only when other attributes (*access*, *usage*, or *displayLabel*) are not appropriate.

dateLastAccessed [NOT RECOMMENDED]

These guidelines do not recommend use of the `dateLastAccessed` attribute. This attribute is unlikely to be useful to an aggregator, and, when persistent URL's are used, this attribute will be of little value.

displayLabel [OPTIONAL]

The `displayLabel` attribute may be used to indicate the preferred labeling when displayed by a metadata aggregator. Include the text preferred and capitalization, but do not include delimiters such as colons. Metadata aggregators may choose to ignore this attribute.

EXAMPLES OF `<location>` USE

`<location>`

```
<url usage="primary display" access="object in
context">http://hemi.es.its.nyu.edu/journal/2_1/ramalho_por.html<
/urll>
</location>
<location>
  <physicalLocation authority="oclcorg">NNU</physicalLocation>
  <physicalLocation>New York University, E. H. Bobst Library (New
  York, NY)</physicalLocation>
</location>
<location>
  <url usage="primary display" access="object in
  context">http://webapp1.dlib.indiana.edu/cushman/results/detail.d
  o?pnum=P04995</url>
  <url access="raw
  object">http://webapp1.dlib.indiana.edu/collections/cushman/full/
  P04995.jpg</url>
</location>
```

USE BY AGGREGATORS

Aggregator will use the `<location><url usage="primary display">` as the primary or - within a short display - the only link for an end user to access the described digital resource. Aggregators may choose to display additional `<location><url>` or `<location><physicalLocation>` links to end users, but generally will not use those within the search or browse functionality.

In addition, aggregators may use links provided within `<location><url>` to collect more information for their service. For example, if a URL is provided to image thumbnails (`access="preview"`), an aggregator may spider those URLs to collect the thumbnail. These are then displayed with the search results to improve the user's browsing of the results.

MAPPING TO DUBLIN CORE

`<location><url>` subelement, along with the `<identifier>` element, are both mapped to `<dc:identifier>` in *MODS to Dublin Core Metadata Element Set Mapping Version 3.0 (June 7, 2005)*. The DLF guidelines recommend following this mapping.

`<location><physicalLocation>` do not easily map to any Dublin Core element; the guidelines recommend mapping only the `<location><url>` if both are available.

MODS example above expressed in Dublin Core:

```
<dc:identifier>http://hemi.es.its.nyu.edu/journal/2_1/ramalho_por
.html</dc:identifier>
<dc:identifier>http://webapp1.dlib.indiana.edu/cushman/results/de
tail.do?pnum=P04995</dc:identifier>
<dc:identifier>http://webapp1.dlib.indiana.edu/collections/cushma
n/full/P04995.jpg</dc:identifier>
```


RELATIONSHIP TO DLF/NSDL BEST PRACTICES FOR SHAREABLE METADATA

The <url> subelement of element <location> is addressed in the *Recommendations for Classes of Data Elements* section under "Identifiers"⁴⁷ and "Linking from a Record to a Resource"⁴⁸ under the *General Recommendations* section.

⁴⁷ <http://oai-best.comm.nsd.gov/cgi-bin/wiki.pl?IdentifyingTheResource>

⁴⁸ <http://oai-best.comm.nsd.gov/cgi-bin/wiki.pl?AppropriateLinks>

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<accessCondition>

MODS Element	Attributes	Subelements
<accessCondition>	type displayLabel	none

SUMMARY OF REQUIREMENTS

The *DLF/Aquifer Implementation Guidelines for Shareable MODS Records* require the use of one <accessCondition> element with the `type` attribute containing the value `useAndReproduction` in every MODS record. This element is repeatable.

DEFINITION FROM MODS USER GUIDELINES

Information about restrictions imposed on access to a resource.

DISCUSSION OF USE

Use <accessCondition> to indicate rights relating to access and use of digital resources.

The audience for rights relating to possible uses of digital resources is the end user, so rights information should be as free of legalese and technical jargon as possible. State clearly any restrictions on use of the digital resource, including explicitly mentioning lack of copyright restrictions when the digital resource is in the public domain. Also provide contact information for use by end users who wish to pursue required permissions for publication, exhibit, or other types of dissemination. If you maintain rights information relating to specific digital resources on a web site, you may wish to provide a URL for that web site in lieu of a textual rights statement. When doing so, you should provide enough textual explanation, along with the URL, to make the purpose of the URL clear to end users.

Whenever possible, consider using a standard license such as Creative Commons and/or a rights expression language such as the Open Digital Rights Language (ODRL) specification.

In cases where access to a resource is unrestricted, a statement should appear that says so.

Attributes:

type [REQUIRED]

Use the `type` attribute to indicate restrictions (or lack thereof) on use of the resource and/or restrictions on access to the material. The possible values for this attribute are:

use and reproduction
restriction on access

At least one occurrence of the `<accessCondition>` element with a `type` attribute with the value `use` and `reproduction` must occur. Use `restriction` on access only to indicate access restrictions (such as those based on institution affiliation or age) rather than restrictions on use. Other sorts of restrictions, such as government classification, should have no `type` attribute.

displayLabel [OPTIONAL]

The `displayLabel` attribute may be used to indicate the preferred labeling when displayed by a metadata aggregator. Include the text preferred and capitalization, but do not include delimiters such as colons. Metadata aggregators may choose to ignore this attribute.

EXAMPLES OF `<accessCondition>` USE

Where use of a resource is restricted:

```
<accessCondition type="useAndReproduction">For rights relating to this resource, visit http://hemi.nyu.edu/rights.html</accessCondition>
```

```
<accessCondition type="useAndReproduction">Use of this resource is governed by the terms and conditions of the Creative Commons "Attribution-NonCommercial-ShareAlike" License (http://creativecommons.org/licenses/by-nc-sa/2.0/)</accessCondition>
```

```
<accessCondition type="useAndReproduction">This video and the performance it captures are the sole property of Grupo Cultural Yuyachkani. Information regarding syndication and/or replication of this work may be obtained by contacting Grupo Cultural Yuyachkani at yuyachkani@terra.com.pe</accessCondition>
```

Where use of a public-domain resource is unrestricted:

```
<accessCondition type="useAndReproduction">Use of this public-domain resource is unrestricted.</accessCondition>
```

Where a repository wishes to grant unrestricted rights to a resource for which it holds copyright:

```
<accessCondition type="useAndReproduction">This repository grants to all users a free, irrevocable, worldwide, perpetual right of access to, and a license to copy, use, distribute, perform and display the resource publicly and to make and distribute derivative resources in any digital medium for any purpose, as well as the right to make any number of copies for any use.</accessCondition>
```

Where access to a resource is restricted:

```
<accessCondition type="restrictionOnAccess">Restricted: cannot be viewed until 2010; Members of donor's family</accessCondition>
```

MAPPING TO DUBLIN CORE

The *MODS to Dublin Core Metadata Element Set Mapping Version 3.0 (June 7, 2005)* recommends mapping <accessCondition> to <dc:rights>.

MODS examples above expressed in Dublin Core:

```
<dc:rights>For rights relating to this resource, visit  
http://hemi.nyu.edu/rights.html</dc:rights>
```

```
<dc:rights>Use of this resource is governed by the terms and  
conditions of the Creative Commons "Attribution-NonCommercial-  
ShareAlike" License (http://creativecommons.org/licenses/by-nc-  
sa/2.0/)</dc:rights>
```

```
<dc:rights>This video and the performance it captures are the  
sole property of Grupo Cultural Yuyachkani. Information regarding  
syndication and/or replication of this work may be obtained by  
contacting Grupo Cultural Yuyachkani at  
yuyachkani@terra.com.pe</dc:rights>
```

```
<dc:rights>Use of this public-domain resource is unrestricted.  
</dc:rights>
```

```
<dc:rights>This repository grants to all users a free,  
irrevocable, worldwide, perpetual right of access to, and a  
license to copy, use, distribute, perform and display the  
resource publicly and to make and distribute derivative resources  
in any digital medium for any purpose, as well as the right to  
make any number of copies for any use. </dc:rights>
```

```
<dc:rights>Restricted: cannot be viewed until 2010; Members of  
donor's family</dc:rights>
```

RELATIONSHIP TO DLF/NSDL BEST PRACTICES FOR SHAREABLE METADATA

Access condition is addressed in the "Recommendations for classes of data elements" under "Rights for resources".⁴⁹

⁴⁹ <http://oai-best.comm.nsd.org/cgi-bin/wiki.pl?RightsPractices>

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<part>

MODS Element	Attributes	Subelements
<part>	type	
	order	
	type - <detail>	<detail>
	order - <detail>	<extent>
	unit - <extent>	<date>
	encoding - <date>	<text>
	point - <date>	
	qualifier - <date>	

SUMMARY OF REQUIREMENTS

The *DLF/Aquifer Implementation Guidelines for Shareable MODS Records* recommend that the <part> element be used in cases where the part of a resource being represented is a physical or structural part of another resource. Examples include an issue of a journal or a single story from a collection. This element is repeatable.

DEFINITION FROM MODS USER GUIDELINES

The designation of physical parts of a resource in a detailed form.

DISCUSSION OF USE

Use <part> when the MODS record in question refers to either a physical or structural part of a resource, rather than an intellectual part (which should be recorded in various subelements under <title>). A newspaper issue would generally be indicated with <part>, rather than indicating the issue number as part of the title in MODS. The <part> element at the top level would also be used to describe one reel of microfilm in a set, or in any other case in which the part being described is not an intellectual whole by itself. When in doubt, and only part numbers or names are needed, use <titleInfo><title><partNumber> and/or <titleInfo><title><partName>.

Attributes:

type [OPTIONAL]

A designation of a document segment type. See the *MODS User Guidelines* for suggested values. However, since there is not a controlled set of terms for type, if used, the value should be expressed clearly and be generally understandable outside of the local context of the resource.

order [OPTIONAL]

An integer that designates the sequence of parts.

Subelements:

<detail> [RECOMMENDED IF APPLICABLE]

Use this subelement to indicate the numbering and type of designation of the part in relation to the parent item.

Attributes of <detail>

type [RECOMMENDED IF APPLICABLE]

Use this attribute to indicate the type of the part described. See the *MODS User Guidelines* for suggested values. However, since there is not a controlled set of terms for `type`, if used, the value should be expressed clearly and be generally understandable outside of the local context of the resource.

order [OPTIONAL]

Use to describe the level of numbering in the parent item to ensure that the numbering is retained in the proper order.

Subelements of <detail>

<number> [OPTIONAL]

Contains the actual number within the part.

<caption> [OPTIONAL]

Contains the caption describing the enumeration within a part. This may be the same as `type`, but conveys what is on the item being described.

<title> [OPTIONAL]

Contains the title of the part. Only include if this is different than the title in `<titleInfo><title>`.

<extent> [RECOMMENDED IF APPLICABLE]

Use this subelement to indicate the measured units making up the part (for example pages, minutes, etc.).

Attribute of <extent>

unit [RECOMMENDED IF APPLICABLE]

Use this attribute to indicate the measure. However, since there is not a controlled set of terms for this attribute, the value should be expressed clearly and be generally understandable outside of the local context of the resource.

Subelements of <extent>

<start> [RECOMMENDED IF APPLICABLE]

Use this subelement to indicate the beginning unit of the extent within a part (for example, first page).

<end> [RECOMMENDED IF APPLICABLE]

Use this subelement to indicate the ending unit of the extent within a part.

<total> [RECOMMENDED IF APPLICABLE]

Use this subelement to indicate the total number of units within a part, rather than specific units.

<list> [RECOMMENDED IF APPLICABLE]

Use this subelement to indicate a textual listing of the units within a part (for example, "pp. 5-9").

<date> [RECOMMENDED IF APPLICABLE]

Use this subelement for relevant date information.

Attributes of <date>

encoding [RECOMMENDED]

If a structured date is used, indicate the formatting source using the `encoding` attribute. These guidelines recommend using the following value for the `encoding` attribute:

- `w3cdtf` - used for the ISO 8601 profile to specify YYYY-MM-DD date patterns

point [RECOMMENDED IF APPLICABLE]

The `point` attribute can be used to encode date ranges using the following values:

- `start` - used for first date of a range
- `end` - used for the end date of a range

If no `point` attribute is specified, date is assumed to be a single date.

qualifier [RECOMMENDED IF APPLICABLE]

The `qualifier` attribute has three allowed values: `approximate`, `inferred`, and `questionable`. Best practice is to use this attribute with the appropriate value when a date is approximate, inferred, or questionable, rather than inserting characters such as "*ca.*", brackets or a question mark within the date string.

<text> [RECOMMENDED IF APPLICABLE]

Use this subelement to record information in textual form. Use this subelement when other subelements will not capture the appropriate information.

EXAMPLES OF <part> USE

```
<titleInfo>
  <title>Washington observer</title>
</titleInfo>
<part>
  <detail type="volume">
    <number>1</number>
  </detail>
</part>

<titleInfo>
  <title>Non-subject-matter Outcomes of Schooling</title>
</titleInfo>
<part>
  <detail type="volume">
    <number>99</number>
  </detail>
  <detail type="issue">
    <number>5</number>
  <caption>no.</caption>
  </detail>
  <extent unit="page">
    <start>131</start>
    <end>146</end>
  </extent>
  <date encoding="w3cdtf">1999</date>
</part>
```

USE BY AGGREGATORS

Aggregators may index <part> with other title information for search purposes; and may also include it in a full display.

MAPPING TO DUBLIN CORE

The *MODS to Dublin Core Metadata Element Set Mapping Version 3.0 (June 7, 2005)* does not include the <part> element in the mapping to Dublin Core. These guidelines recommend adding information appearing at the highest level of the record to title information when mapping to simple Dublin Core.

MODS examples above expressed in Dublin Core:

```
<dc:title>Washington observer volume 1</dc:title>

<dc:title>Non-subject-matter Outcomes of Schooling volume, volume
99, issue 5, page 131-146, 1999</dc:title>
```

RELATIONSHIP TO DLF/NSDL BEST PRACTICES FOR SHAREABLE METADATA

The DLF/NSDL *Best Practices for Shareable Metadata* does not explicitly cover description of parts of resources. Some related issues are discussed on the "Granularity of Description" page.⁵⁰

⁵⁰ <http://oai-best.comm.nsd.gov/cgi-bin/wiki.pl?RecordGranularity>

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<extension>

MODS Element	Attributes	Subelements
<extension>	none	none

SUMMARY OF REQUIREMENTS

The *DLF/Aquifer Implementation Guidelines for Shareable MODS Records* generally recommend against the use of the MODS <extension> element because any subelements within it will likely not be understandable to OAI service providers. Exceptions to this recommendation are the use of well-documented community-based information for which there is not another appropriate place within the MODS schema. An example of this is the use of the “asset action” package. This element is repeatable.

DEFINITION FROM MODS USER GUIDELINES

Additional information not covered by MODS.

DISCUSSION OF USE

Because no restrictions are imposed on the contents of this element, subelements within it will likely not be understandable by OAI service providers. Metadata falling within the scope of <extension> in a local environment should be included within other MODS elements as appropriate or omitted in OAI-harvestable MODS records.

The exception to this recommendation is the use of well documented community-based information for which there is not another appropriate place within the MODS schema. In these cases, it is recommended that a schema is used. An example of this is the use of the “asset action” package.⁵¹

EXAMPLES OF <extension> USE

```
<extension>
  <location>
    <url access="asset action package">
      http://foo.edu/assetactions/999.xml
    </url>
  </location>
</extension>
```

USE BY AGGREGATORS

As noted above, aggregators are not likely to include or use the <extension> element unless it is used to contain an agreed-upon set of information in a recognizable schema.

⁵¹ For more information about “asset actions” see <http://www.dlib.org/dlib/october06/cole/10cole.html>.

MAPPING TO DUBLIN CORE

Subelements under <extension> are not mapped to Dublin Core in the *MODS to Dublin Core Metadata Element Set Mapping Version 3.0 (June 7, 2005)*.

RELATIONSHIP TO DLF/NSDL BEST PRACTICES FOR SHAREABLE METADATA

The <extension> element is not discussed in the DLF/NSDL *Best Practices for Shareable Metadata*. However, the section on "Appropriate Representation of Resources" contains some information on what types of information to provide within metadata that is being shared via OAI (or by other means).⁵²

⁵² <http://oai-best.comm.nsd.gov/cgi-bin/wiki.pl?AppropriateMetadata>

<recordInfo>

MODS Element	Attributes	Subelements
<recordInfo>	authority -	
	<recordContentSource>	
	encoding -	
	<recordCreationDate>	
	and <recordChangeDate>	
	point -	
	<recordCreationDate>	<recordContentSource>
	and <recordChangeDate>	<recordCreationDate>
	keyDate -	<recordChangeDate>
	<recordCreationDate>	<recordIdentifier>
and <recordChangeDate>	<recordOrigin>	
qualifier -	<languageOfCataloging>	
<recordCreationDate>		
and <recordChangeDate>		
source -		
<recordIdentifier>		
authority -		
<languageOfCataloging>		

SUMMARY OF REQUIREMENTS

The *DLF/Aquifer Implementation Guidelines for Shareable MODS Records* require the use of one <recordInfo> element with the subelement <languageOfCataloging> to record the language of the text in the MODS record. <recordInfo> is not repeatable.

DEFINITION FROM MODS USER GUIDELINES

Information about the metadata record.

DISCUSSION OF USE

In general, it is useful for a service provider to have some information about the metadata record itself. This type of administrative information can help establish the provenance of a metadata record and may enable better interpretation of the content of a metadata record.

<recordInfo> is a wrapper element. It should be used to record information about the metadata record that may help a service provider understand or manage the record. <recordInfo> may also include information that is relevant only to the creating or managing institution; ideally this type of information would not be included in the record shared with others. The recommendations for each of the six subelements below make specific mention of the types of information useful to service providers. There should be only one <recordInfo> element per MODS record.

Within the OAI context, information about the metadata record may also be recorded in an optional <about> container outside of the <metadata> container. The information contained in the MODS <recordInfo> may be repeated in the <about> container for the MODS record, but is not required.

Subelements:

<recordContentSource> [RECOMMENDED]

Use <recordContentSource> to indicate the code or name of the organization that either created or modified the original record. This information can be useful to trace the provenance of a particular metadata record, particularly if the record has been re-exposed via an aggregator. The name or code should be pulled from an authoritative list and indicated in the authority attribute.

Attributes of <recordContentSource>

authority [RECOMMENDED]

The name of the authoritative list for a controlled value is recorded here. The Library of Congress maintains "Organization Source Codes."⁵³ If the authority attribute is not included, the value is presumed to be textual (for example, a name of an institution).

<recordCreationDate> [OPTIONAL]

<recordChangeDate> [OPTIONAL]

These subelements are used to record the date the original MODS record was created and last modified, respectively. These guidelines make no specific recommendation on their use. Within the OAI context, service providers are more likely to rely on the <datestamp> within the OAI header for information about when the record was created or last modified than these dates.

If either or both of these subelements is used, follow the guidelines outlined in the date section of the <originInfo> element (see page 31). The one exception is that neither of these subelements should be identified as the `keyDate`.

Attributes of <recordCreationDate> and <recordChangeDate>:

encoding [OPTIONAL]

If a structured date is used, indicate the formatting source using the `encoding` attribute. These guidelines recommend using the following value for the `encoding` attribute:

- `w3cdtf` - used for the ISO 8601 profile to specify YYYY-MM-DD date patterns

point [OPTIONAL]

⁵³ <http://www.loc.gov/marc/sourcecode/organization/organizationsource.html>

The `point` attribute can be used to encode date ranges using the following values:

- `start` - used for first date of a range
- `end` - used for the end date of a range

If no `point` attribute is specified, date is assumed to be a single date.

keyDate [NOT RECOMMENDED]

Used to specify a single date which should be used by OAI service providers for date indexing, sorting, and display. *Only one date element should be specified as a key date.* These guidelines recommend that the `keyDate` appear in the `<originInfo>` element (see page 31).

qualifier [NOT RECOMMENDED]

The use of the `qualifier` attribute within date information in `<recordInfo>` is not recommended. If the creation or change date is not known or must be inferred, it is probably not useful to include.

<recordIdentifier> [OPTIONAL]

Use this subelement to record the system control number assigned by the organization creating, using, or distributing the record. These guidelines make no specific recommendation on its use. Within the OAI context, service providers are likely to rely on the `<identifier>` in the OAI header, rather than the `<recordIdentifier>`. If `<recordIdentifier>` is used, the guidelines recommend the use of the `source` attribute if possible.

Attributes of <recordIdentifier>

source [RECOMMENDED]

This attribute contains the code or name of the organization whose system control number is located in the `<recordIdentifier>` element. The source name should be from a controlled list⁵⁴ if possible, although there is not a way to indicate the controlled list.

<recordOrigin> [RECOMMENDED]

Use this subelement to record information about the origin, or provenance of the MODS record including how it was generated and what transformations have been applied. The information here can be useful for a service provider to understand specific encoding conventions within element values or why certain types of information appear in certain places (for example, if the MODS record was transformed from a MARC record using the standard Library of Congress stylesheet). These guidelines recommend using free text with the stipulation that values be understandable outside of the local context of the creating institution. Institutions may include as much or as little detail as desired in this

⁵⁴ <http://www.loc.gov/marc/sourcecode/organization/organizationsource.html>

element; however, information such as whether a transformation was done by machine or by hand, and if a standard set of transformation rules was used are useful to service providers.

<languageOfCataloging> [REQUIRED]

Use <languageOfCataloging> to record the language of the text of the cataloging in the MODS record. These guidelines require the use of this subelement and its subelement <languageTerm> to record the primary language of the values found within MODS elements. If additional language(s) are used this should be indicated with the lang attribute within the specific top-level element(s) in which the additional language(s) appears (see page 101).

Subelement of <languageOfCataloging>

<languageTerm> [REQUIRED]

This subelement contains the language of the text of the cataloging in the MODS record. These guidelines require one pair of <languageTerm> elements representing the primary language of the text wrapped in a single <language> element. One of these <languageTerm> elements should carry the attribute type="text" and the other should have type="code". Additional pairs of <languageTerm> elements representing secondary languages may be included in separate <language> elements.

Attributes of <languageTerm>

authority [REQUIRED IF APPLICABLE]

These guidelines require using the value iso639-2b for this attribute in the <languageTerm> element.

EXAMPLE OF <recordInfo> USE

```
<recordInfo>
  <recordContentSource
    authority="oclcorg">UIU</recordContentSource>
  <recordOrigin>Record has been transformed into MODS from a
    qualified Dublin Core record using a stylesheet available at
    http://www.sample.edu/. Metadata originally created in a locally
    modified version of qualified Dublin Core (data dictionary
    available: http://www.sample.edu/.)</recordOrigin>
  <languageOfCataloging>
    <languageTerm authority="iso639-2">eng</languageTerm>
  </languageOfCataloging>
</recordInfo>
```

USE BY AGGREGATORS

The <recordInfo> field contains information that will be of use to aggregators in determining how best to understand and process a record for use in the aggregation. None

of the fields are likely to be displayed to end users of the aggregation interface, or be indexed for end user search.

MAPPING TO DUBLIN CORE

These guidelines and the *MODS to Dublin Core Metadata Element Set Mapping Version 3.0 (June 7, 2005)* make no recommendations about mapping `<recordInfo>` to a simple Dublin Core element. For the purposes of the required Dublin Core records within the OAI context, information contained within a MODS `<recordInfo>` element could be mapped to an OAI `<about>` container for each OAI Dublin Core record disseminated from a MODS item, or, alternatively, this information is documented in a publicly accessible place and referenced from the `<about>` container or the `<setDescription>`.

However, these guidelines do recommend documenting cataloging decisions in a publicly accessible location so that service providers can better interpret metadata records.

RELATIONSHIP TO DLF/NSDL BEST PRACTICES FOR SHAREABLE METADATA

The DLF/NSDL *Best Practices for Shareable Metadata* discuss issues related to `<recordInfo>` in the "Providing Supplemental Documentation to OAI Service Providers" section.⁵⁵

⁵⁵ <http://oai-best.comm.nsd.gov/cgi-bin/wiki.pl?DocumentingSource>

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Attributes Common to Most Elements

Attributes

lang
xml:lang
script
transliteration
ID
xlink

SUMMARY OF REQUIREMENTS

The *DLF/Aquifer Implementation Guidelines for Shareable MODS Records* require the use of the `lang` attribute when a language is used in the value of an element that is not the same as that indicated in the `<languageOfCataloging>` subelement of the `<recordOrigin>` element. The use of the `xml:lang` attribute is not recommended. The use of the `script` and `transliteration` attributes is recommended if applicable. These guidelines have no recommendation on the use of the `ID` attribute. The use of the `xlink` attribute is recommended when applicable, particularly within the `<relatedItem>` or `<tableOfContents>` elements. The common attributes for elements relating to dates are covered in the applicable sections.

DEFINITION FROM MODS USER GUIDELINES

See <http://www.loc.gov/standards/mods/v3/mods-userguide-generalapp.html#list>.

DISCUSSION OF USE

`lang` [REQUIRED IF APPLICABLE]

The `lang` attribute should be used when a language is used in the value of an element that is not the same as that indicated in the `<languageOfCataloging>` subelement of the `<recordOrigin>` element. The value for the attribute must be taken from ISO 639-2/b.⁵⁶

`xml:lang` [NOT RECOMMENDED]

The use of the `xml:lang` attribute is not recommended.

`script` [RECOMMENDED IF APPLICABLE]

`transliteration` [RECOMMENDED IF APPLICABLE]

Use of the `script` and `transliteration` attributes is recommended if applicable. Note that there is no standard list of transliteration schemes available; the value of this attribute may be limited until one is developed.

⁵⁶ <http://www.loc.gov/standards/iso639-2/>

id [OPTIONAL]

The use of the id attribute is optional.

xlink [RECOMMENDED IF APPLICABLE]

Use the xlink attribute in cases where there is a need to reference an external resource such as a second metadata record. See <tableOfContents> (page 47) for examples.

EXAMPLES OF COMMON ATTRIBUTES

```
<abstract>This paper examines the Impact of schooling and income on
fertility in Côte d'Ivoire using data from the 1985 Côte d'Ivoire
Living Standards Survey.</abstract>
<abstract lang="fre"> Ce document examine l'impact de la scolarisation
et du revenu sur la fécondité en Côte d'Ivoire en utilisant les données
de l'Enquête sur les Niveaux de Vie en Côte d'Ivoire de
1985.</abstract>
<recordInfo>
  <languageOfCataloging>
    <languageTerm authority= "iso639-2">eng</languageTerm>
  </languageOfCataloging>
</recordInfo>

<relatedItem displayLabel="Preceding Title" type="preceding"
xlink:href="http://hdl.loc.gov/umich.dli.moa/AGE3371"/>

<tableOfContents
xlink:href="http://www.ojp.usdoj.gov/bjs/toc/cchrie98.htm" />
```

USE BY AGGREGATORS

Use of the common attributes will depend upon the individual aggregator. In the case of the xlink attribute, for example, aggregators may provide the link to the end user.

MAPPING TO DUBLIN CORE

These guidelines and the *MODS to Dublin Core Metadata Element Set Mapping Version 3.0 (June 7, 2005)* make no recommendations about mapping the common attributes to simple Dublin Core elements.

RELATIONSHIP TO DLF/NSDL BEST PRACTICES FOR SHAREABLE METADATA

None of the common attributes are specifically discussed in the *DLF/NSDL Best Practices for Shareable Metadata*. However, the general issues around documenting how metadata values are recorded are discussed in the Providing Supplemental Information to a Service Provider section.⁵⁷

⁵⁷ <http://oai-best.comm.nsd.org/cgi-bin/wiki.pl?DocumentingSource>

Full MODS Examples Encoded to These Guidelines

NOTE ON THESE EXAMPLES

Source records for these examples were borrowed with permission from Indiana University Bloomington, the Library of Congress, the University of Illinois at Urbana-Champaign, and Emory University. Some content and encoding in the examples has been altered from the original to insure that they adhere to the recommendations in these guidelines. The examples are illustrative, not prescriptive, and their inclusion is intended only to assist in understanding how these guidelines might be applied.

Examples are supplied for the following types of materials:

1. book (page 103)
2. film (page 105)
3. map (page 107)
4. photograph (page 109)
5. print (page 111)
6. sheet music (page 113)
7. physical artifact (page 115)
8. born digital item (page 116)

Example 1: Record for a book (Library of Congress)

```
<mods xmlns="http://www.loc.gov/mods/v3"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.loc.gov/mods/v3
http://www.loc.gov/standards/mods/v3/mods-3-2.xsd">
  <titleInfo>
    <title>Letters of a volunteer in the Spanish-American war</title>
  </titleInfo>
  <name type="personal" authority="naf">
    <namePart>King, George G. (George Glenn)</namePart>
    <role>
      <roleTerm authority="marcrelator"
type="text">creator</roleTerm>
    </role>
  </name>
  <typeOfResource>text</typeOfResource>
  <genre authority="aat">monographs</genre>
  <genre authority="aat">correspondence</genre>
  <originInfo>
    <place>
      <placeTerm type="code" authority="marccountry">ilu</placeTerm>
      <placeTerm type="text">Illinois</placeTerm>
    </place>
    <place>
      <placeTerm type="text">Chicago</placeTerm>
    </place>
    <publisher>Hawkins and Loomis</publisher>
    <dateIssued encoding="w3cdtf" keyDate="yes">1929</dateIssued>
```

```
</originInfo>
<language>
  <languageTerm type="text">English</languageTerm>
  <languageTerm type="code" authority="iso639-
    2b">eng</languageTerm>
</language>
<physicalDescription>
  <extent> 3 p.l., 5-133 p. 23 cm.</extent>
  <note>All pages of the original have been digitized.</note>
  <internetMediaType>text/html</internetMediaType>
  <internetMediaType>image/jpeg</internetMediaType>
  <internetMediaType>image/tiff</internetMediaType>
  <digitalOrigin>reformatted digital</digitalOrigin>
</physicalDescription>
<abstract>This book is a collection of letters written home by
George King, an American soldier who served in the Puerto Rican
campaign during the Spanish-American War. At the outbreak of the
War, King volunteered in the Sixth Regiment of Infantry formed in
Concord, Massachusetts. He rose quickly to the rank of sergeant.
King describes in some detail the life of a soldier during the war,
including the kind and extent of training received, and the lean
diet and physical hardships of campaigning in Puerto Rico. King's
letters are interspersed with notes and explanatory commentary that
puts his letters in perspective. Some of his letters and
commentaries describe the interrelationships between American
soldiers and the inhabitants of Puerto Rico during the War. He
pointed out, for example, that the Americans hired native Puerto
Ricans, who rendered the army efficient and valuable service as
mounted scouts.</abstract>
<subject authority="lcsch">
  <geographic> United States</geographic>
  <geographicCode authority="marcgac">n-us---</geographicCode>
</subject>
<subject authority="lcsch">
  <topic>Spanish-American War, 1898</topic>
  <topic>Personal narratives</topic>
</subject>
<identifier type="lccn">30012858</identifier>
<identifier type="hdl">hdl:loc.gdc/lhbpr.12858</identifier>
<location>
  <url usage="primary display" access="object in
    context">http://hdl.loc.gov/loc.gdc/lhbpr.12858</url>
</location>
<accessCondition type="useAndReproduction">The Library of Congress
is providing access to these materials for educational and research
purposes. The written permission of the copyright owners and other
rights holders (such as holders of publicity and /or privacy rights)
is required for distribution, reproduction, or other use beyond that
allowed by fair use or other statutory exemptions. Note that there
may be U.S. copyright protection (see Title 17, U.S.C.) or other
restrictions in these materials. However, the Library is not aware
of any copyrights or other rights associated with this
material.</accessCondition>
<recordInfo>
  <recordContentSource
    authority="marcorg">DLC</recordContentSource>
```



```

<recordCreationDate encoding="w3cdtf">1982-11-
08</recordCreationDate>
<recordChangeDate encoding="w3cdtf">2002-03-20</recordChangeDate>
<recordIdentifier source="DLC">30012858</recordIdentifier>
<recordOrigin>Derived from a MARC record using the Library of
Congress stylesheet</recordOrigin>
<languageOfCataloging>
  <languageTerm authority="iso639-2b">eng</languageTerm>
</languageOfCataloging>
</recordInfo>
</mods>

```

Example 2: Record for a film (Library of Congress)

```

<mods xmlns="http://www.loc.gov/mods/v3"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.loc.gov/mods/v3
http://www.loc.gov/standards/mods/v3/mods-3-2.xsd">
  <titleInfo>
    <title>Dud leaves home</title>
  </titleInfo>
  <titleInfo type="alternative" displayLabel="Variant title in Library
of Congress video collection">
    <title>Us fellers: "Dud leaves home"</title>
  </titleInfo>
  <titleInfo type="alternative" displayLabel="Copyright title">
    <title>Goldwyn-Bray Pictographs, no. 7009</title>
  </titleInfo>
  <name type="personal" authority="naf">
    <namePart>Carlson, Wallace</namePart>
    <namePart type="date">d. 1967</namePart>
    <role>
      <roleTerm authority="marcrelator"
type="text">animator</roleTerm>
    </role>
    <role>
      <roleTerm authority="marcrelator"
type="text">scenarist</roleTerm>
    </role>
  </name>
  <name type="corporate" authority="naf">
    <namePart>Bray Pictures Corporation</namePart>
  </name>
  <typeOfResource>moving image</typeOfResource>
  <genre authority="marc">motion picture</genre>
  <genre authority="migfg">Comedy-Animation-Short</genre>
  <originInfo>
    <place>
      <placeTerm type="code" authority="marccountry">xxu</placeTerm>
      <placeTerm type="text">United States</placeTerm>
    </place>
    <publisher>Bray Pictures Corp.</publisher>
    <dateIssued encoding="w3cdtf" keyDate="yes"
qualifier="inferred">1919</dateIssued>
  </originInfo>
  <language>

```

```
<languageTerm type="text">English</languageTerm>
<languageTerm authority="iso639-2b"
type="code">eng</languageTerm>
</language>
<physicalDescription>
  <extent>1 reel of 1 (ca. 170 ft.) : si., b and w ; 16 mm. ref
  print.</extent>
  <extent>Duration: 4:57 at 22 fps.</extent>
  <note> The entire content of the original has been
  digitized.</note>
  <internetMediaType>video/mpeg</internetMediaType>
  <internetMediaType>video/quicktime</internetMediaType>
  <digitalOrigin>reformatted digital</digitalOrigin>
</physicalDescription>
<abstract>Dud wants to buy his girlfriend Maime an ice cream cone so
he breaks open his mother's bank, and splits their last dime in half
in the process. His mother punishes him so he runs away. Dud is
scared by imaginary ghosts in the dark, so he runs back home where
he gets a spanking from his mother.</abstract>
<note displayLabel="Statement of responsibility">Bray Pictures
Corporation ; animator and writer, Wallace Carlson.</note>
<note>Digital file includes a piano score composed and performed by
Philip Carli.</note>
<subject authority="lcsch">
  <topic>Boys</topic>
  <geographic>United States</geographic>
  <genre>Drama</genre>
</subject>
<subject authority="lcsch">
  <topic>Runaway teenagers</topic>
  <geographic>United States</geographic>
  <genre>Drama</genre>
</subject>
<subject authority="lcsch">
  <topic>Mothers and sons</topic>
  <geographic>United States</geographic>
  <genre>Drama</genre>
</subject>
<subject authority="lcsch">
  <topic>Stealing</topic>
  <geographic>United States</geographic>
  <genre>Drama</genre>
</subject>
<subject authority="lcsch">
  <topic>Discipline of children</topic>
  <geographic>United States</geographic>
  <genre>Drama</genre>
</subject>
<subject authority="lcsch">
  <topic>Punishment</topic>
  <genre>Drama</genre>
</subject>
<subject authority="lcsch">
  <topic>Ghosts</topic>
  <genre>Drama</genre>
</subject>
<relatedItem type="host" displayLabel="Part of">
```

```

<titleInfo>
  <title>AFI/Marshall (George) Collection (Library of
    Congress)</title>
</titleInfo>
</relatedItem>
<relatedItem type="series">
  <titleInfo>
    <title>Us fellers</title>
  </titleInfo>
</relatedItem>
<relatedItem type="series">
  <titleInfo>
    <title>Goldwyn-Bray pictographs</title>
  </titleInfo>
</relatedItem>
<identifier type="lccn">00694010</identifier>
<identifier type="hdl">hdl:loc.mbrsmi/animp.4068</identifier>
<location>
  <url usage="primary display" access="object in
    context">http://hdl.loc.gov/loc.mbrsmi/animp.4068</url>
</location>
<accessCondition type="useAndReproduction">For information on rights
  relating to this resource, visit
  http://www.loc.gov/homepage/legal.html#copyright</accessCondition>
<recordInfo>
  <recordContentSource
    authority="marcorg">DLC</recordContentSource>
  <recordCreationDate encoding="w3cdtf">1999-12-
    01</recordCreationDate>
  <recordChangeDate encoding="w3cdtf">2000-12-19</recordChangeDate>
  <recordIdentifier source="DLC">00694010</recordIdentifier>
  <recordOrigin>Sources used: Copyright catalog, motion pictures,
    1912-1939; Library of Congress video collection, v. 3, Origins of
    American animation, 1900-1921; McIntire, J. Silent animated films
    at the Library of Congress, 1995; M/B/RS shelflist. Summary from
    J. McIntire, Silent animated films at the Library of Congress,
    1995.</recordOrigin>
  <languageOfCataloging>
    <languageTerm authority="iso639-2b">eng</languageTerm>
  </languageOfCataloging>
</recordInfo>
</mods>

```

Example 3: Record for a map (Library of Congress)

```

<mods xmlns="http://www.loc.gov/mods/v3"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://www.loc.gov/mods/v3
  http://www.loc.gov/standards/mods/v3/mods-3-2.xsd">
  <titleInfo>
    <title>Dallas, Texas. With the projected river and navigation
      improvements viewed from above the sister city of Oak
      Cliff</title>
  </titleInfo>
  <name type="personal" authority="naf">
    <namePart type="family">Giroud</namePart>

```

```
<namePart type="given">Paul</namePart>
<role>
  <roleTerm authority="marcrelator"
    type="text">cartographer</roleTerm>
  <roleTerm authority="marcrelator"
    type="code">ctg</roleTerm>
</role>
</name>
<typeOfResource>cartographic</typeOfResource>
<genre authority="lctgm">panoramic views</genre>
<originInfo>
  <place>
    <placeTerm type="text">Dallas?</placeTerm>
  </place>
  <publisher>Dallas Lith. Co.</publisher>
  <dateIssued encoding="w3cdtf"
    keyDate="yes">1892</dateIssued>
</originInfo>
<language>
  <languageTerm type="text">English</languageTerm>
  <languageTerm type="code" authority="iso639-
    2b">eng</languageTerm>
</language>
<physicalDescription>
  <extent>col. map 26 x 53 cm. on sheet 53 x 75 cm.</extent>
  <internetMediaType>image/tiff</internetMediaType>
  <digitalOrigin>reformatted digital</digitalOrigin>
</physicalDescription>
<note>Perspective map not drawn to scale.</note>
<note>Bird's-eye-view.</note>
<note>Includes illus. and advertisements.</note>
<subject authority="lcsch">
  <geographic>Dallas (Tex.)</geographic>
  <genre>Aerial views</genre>
</subject>
<subject authority="tgn">
  <hierarchicalGeographic>
    <country>United States</country>
    <state>Texas</state>
    <city>Dallas</city>
  </hierarchicalGeographic>
</subject>
<identifier type="hdl">
http://hdl.loc.gov/loc.gmd/g4034d.pm009070 </identifier>
<location>
  <url usage="primary display" access="object in
    context">http://hdl.loc.gov/loc.gmd/g4034d.pm009070</url>
</location>
<location>
  <physicalLocation> Library of Congress Geography and Map
    Division Washington, D.C. 20540-4650 USA </physicalLocation>
</location>
<accessCondition type="useAndReproduction">Most maps in the Map
  Collections materials were either published prior to 1922,
  produced by the United States government, or both (see catalogue
  records that accompany each map for information regarding date of
  publication and source). A few have permission from the copyright
```

holders as noted in the descriptive record. The Library of Congress is providing access to these materials for educational and research purposes and is not aware of any U.S. copyright protection (see Title 17 of the United States Code) or any other restrictions in the Map Collection materials. Note that the written permission of the copyright owners and/or other rights holders (such as publicity and/or privacy rights) is required for distribution, reproduction, or other use of protected items beyond that allowed by fair use or other statutory exemptions. Responsibility for making an independent legal assessment of an item and securing any necessary permissions ultimately rests with persons desiring to use the item.</accessCondition>

```
<recordInfo>
  <recordContentSource
    authority="marcorg">Mdbj</recordContentSource>
  <recordCreationDate encoding="w3cdtf">2005-10-
    28</recordCreationDate>
  <recordOrigin>Base MODS record derived from Library of
    Congress American Memory Project record, then edited to
    conform to the DLF Implementation Guidelines for Shareable
    MODS Records.</recordOrigin>
  <languageOfCataloging>
    <languageTerm authority="iso639-2b">eng</languageTerm>
  </languageOfCataloging>
</recordInfo>
</mods>
```

Example 4: Record for a photograph (Library of Congress)

```
<mods xmlns="http://www.loc.gov/mods/v3"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://www.loc.gov/mods/v3
  http://www.loc.gov/standards/mods/v3/mods-3-2.xsd">
  <titleInfo>
    <title>General view of Balaklava, the hospital on the
      right</title>
  </titleInfo>
  <name type="personal" authority="naf">
    <namePart>Fenton, Roger</namePart>
    <namePart type="date">1819-1869</namePart>
    <role>
      <roleTerm authority="marcrelator"
        type="text">creator</roleTerm>
    </role>
    <role>
      <roleTerm authority="marcrelator"
        type="text">photographer</roleTerm>
    </role>
  </name>
  <typeOfResource>still image</typeOfResource>
  <genre authority="gmGPC">Salted paper prints-1850-1860.</genre>
  <originInfo>
    <place>
      <placeTerm type="code" authority="marccountry">enk</placeTerm>
      <placeTerm type="text">England</placeTerm>
    </place>
```

```
<dateIssued encoding="w3cdtf" keyDate="yes"
qualifier="inferred">1855</dateIssued>
</originInfo>
<physicalDescription>
  <extent>1 photographic print : salted paper ; 30 x 36
  cm.</extent>
  <note>The entire content of the original has been
  digitized.</note>
  <internetMediaType>image/jpeg</internetMediaType>
  <internetMediaType>image/tiff</internetMediaType>
  <digitalOrigin>reformatted digital</digitalOrigin>
</physicalDescription>
<abstract>Includes buildings in the foreground, a view of the
harbor, and military tents scattered on the hills to the left in the
background.</abstract>
<note>Title transcribed from verso.</note>
<note>Roger Fenton, photographer of the Crimean War: His photographs
and his letters from the Crimea, with an essay on his life and work
/ Helmut and Alison Gernsheim. London : Secker and Warburg, 1954,
no. 21.</note>
<subject authority="lcsch">
  <geographic>Ukraine</geographic>
  <geographicCode authority="marcgac">e-un---</geographicCode>
</subject>
<subject authority="lcsch">
  <topic>Crimean War, 1853-1856</topic>
</subject>
<subject authority="lctgm">
  <topic>Cities and towns</topic>
  <geographic>Ukraine</geographic>
  <geographic>Balaklava</geographic>
  <temporal>1850-1860</temporal>
</subject>
<subject>
  <geographic>Balaklava (Ukraine)</geographic>
  <temporal>1850-1860</temporal>
</subject>
<classification authority="lcc">PH - Fenton (R.), no.
81</classification>
<relatedItem type="host">
  <titleInfo>
    <title>Roger Fenton Crimean War photograph collection</title>
  </titleInfo>
  <name>
    <namePart>Fenton, Roger, 1819-1869.</namePart>
  </name>
  <identifier type="lccn">2001696100</identifier>
  <note>Purchase; Frances M. Fenton; 1944.</note>
  <accessCondition type="restrictionOnAccess">Restricted access:
  Materials extremely fragile; Served by appointment
  only.</accessCondition>
</relatedItem>
<identifier type="lccn">2001698800</identifier>
<identifier type="stock number">LC-USZC4-9198 DLC</identifier>
<identifier type="stock number">LC-USZ62-2370 DLC</identifier>
<identifier type="hdl" displayLabel="color film copy
transparency">hdl:loc.pnp/cph.3g09198</identifier>
```

```
<identifier type="hdl" displayLabel="b and w film copy
neg.">hdl:loc.pnp/cph.3a06070</identifier>
<location>
  <url usage="primary display" access="object in
context">http://hdl.loc.gov/loc.pnp/cph.3g09198</url>
</location>
<location>
  <physicalLocation>Library of Congress Prints and Photographs
Division Washington, D.C. 20540 USA</physicalLocation>
</location>
<accessCondition type="useAndReproduction">No known restrictions on
publication.</accessCondition>
<recordInfo>
  <recordContentSource
authority="marcorg">DLC</recordContentSource>
  <recordCreationDate encoding="w3cdtf">2001-07-
25</recordCreationDate>
  <recordChangeDate encoding="w3cdtf">2002-11-11</recordChangeDate>
  <recordIdentifier source="DLC">2001698800</recordIdentifier>
  <recordOrigin>Derived from a MARC record using the Library of
Congress stylesheet then edited to conform to the DLF
Implementation Guidelines for Shareable MODS
Records.</recordOrigin>
  <languageOfCataloging>
    <languageTerm authority="iso639-2b">eng</languageTerm>
  </languageOfCataloging>
</recordInfo>
</mods>
```

Example 5: Record for a print (Library of Congress)

```
<mods xmlns="http://www.loc.gov/mods/v3"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.loc.gov/mods/v3
http://www.loc.gov/standards/mods/v3/mods-3-2.xsd">
  <titleInfo>
    <title>Freedom of expression, of religion, from want, from fear
everywhere in the world</title>
  </titleInfo>
  <name type="corporate" authority="naf">
    <namePart>Federal Art Project</namePart>
    <role>
      <roleTerm authority="marcrelator"
type="text">sponsor</roleTerm>
      <roleTerm authority="marcrelator" type="code">spn</roleTerm>
    </role>
  </name>
  <typeOfResource>still image</typeOfResource>
  <genre authority="lctgm">Posters</genre>
  <genre authority="lcsh">Posters--20th century</genre>
  <genre authority="lctgm">Screen prints--Color--1930-1950</genre>
  <originInfo>
    <place>
      <placeTerm type="text">Penn[sylvania]</placeTerm>
    </place>
    <publisher>Penna Art WPA</publisher>
```

```
<dateIssued>[between 1936 and 1941]</dateIssued>
<dateIssued encoding="w3cdtf" point="start" keyDate="yes"
qualifier="approximate">1936</dateIssued>
<dateIssued encoding="w3cdtf" point="end">1941</dateIssued>
</originInfo>
<language>
  <languageTerm type="text">English</languageTerm>
  <languageTerm type="code" authority="iso639-
2b">eng</languageTerm>
</language>
<physicalDescription>
  <internetMediaType>image/tiff</internetMediaType>
  <digitalOrigin>reformatted digital</digitalOrigin>
  <extent>1 print on board (poster) : silkscreen, color.</extent>
</physicalDescription>
<abstract>Poster promoting President Franklin Delano Roosevelt's
four freedoms, showing a globe, two books, and the hand and torch
from the Statue of Liberty.</abstract>
<note>Exhibited in: American Responses to Nazi Book Burning, U.S.
Holocaust Memorial Museum, Washington, D.C., 2003.</note>
<subject authority="lcsch">
  <name type="personal" authority="naf">
    <namePart>Roosevelt, Franklin D. (Franklin Delano), 1882-
1945</namePart>
  </name>
</subject>
<subject authority="lctgm">
  <topic>Liberty</topic>
  <temporal>1930-1950</temporal>
</subject>
<subject authority="lctgm">
  <topic>Freedom of speech</topic>
  <geographic>United States</geographic>
  <temporal>1930-1950</temporal>
</subject>
<subject authority="lctgm">
  <topic>Freedom of religion</topic>
  <geographic>United States</geographic>
  <temporal>1930-1950</temporal>
</subject>
<identifier type="local">POS - WPA - PA .01 .F7439, no.
1</identifier>
<relatedItem type="host" displayLabel="Part of">
  <titleInfo>
    <title>Work Projects Administration Poster Collection (Library
of Congress)</title>
  </titleInfo>
</relatedItem>
<identifier type="local">cph 3f05436
http://hdl.loc.gov/loc.pnp/cph.3f05436</identifier>
<location>
  <url usage="primary display" access="object in
context">http://hdl.loc.gov/loc.pnp/cph.3f05436</url>
</location>
<location>
  <physicalLocation>Library of Congress Prints and Photographs
Division Washington, D.C. 20540 USA </physicalLocation>
```



```

</location>
<accessCondition type="useAndReproduction"> There are no known
restrictions on posters made by the Work Projects
Administration.</accessCondition>
<recordInfo>
  <recordContentSource
  authority="marcorg">MdBj</recordContentSource>
  <recordCreationDate encoding="w3cdtf">2005-10-
  28</recordCreationDate>
  <recordChangeDate encoding="w3cdtf">2006-10-17</recordChangeDate>
  <recordOrigin>Base MODS record derived from Library of Congress
  American Memory Project record, then edited to conform to the DLF
  Implementation Guidelines for Shareable MODS
  Records.</recordOrigin>
  <languageOfCataloging>
    <languageTerm authority="iso639-2b">eng</languageTerm>
  </languageOfCataloging>
</recordInfo>
</mods>

```

Example 6: Record for sheet music (Indiana University Bloomington)

```

<mods xmlns="http://www.loc.gov/mods/v3"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.loc.gov/mods/v3
http://www.loc.gov/standards/mods/v3/mods-3-2.xsd">
  <titleInfo>
    <title>Spring and fall</title>
    <subTitle>a tone poem</subTitle>
  </titleInfo>
  <titleInfo type="alternative" displayLabel="First line">
    <title>Spring was here</title>
    <nonSort>The </nonSort>
  </titleInfo>
  <name type="personal" authority="naf">
    <namePart>Berlin, Irving</namePart>
    <namePart type="date">1888-</namePart>
    <role>
      <roleTerm authority="marcrelator"
      type="text">Composer</roleTerm>
      <roleTerm authority="marcrelator" type="code">cmp</roleTerm>
    </role>
  </name>
  <name type="personal" authority="naf">
    <namePart>Buck, Gene</namePart>
    <role>
      <roleTerm authority="marcrelator"
      type="text">Illustrator</roleTerm>
      <roleTerm authority="marcrelator" type="code">ill</roleTerm>
    </role>
  </name>
  <typeOfResource>notated music</typeOfResource>
  <genre authority="lcsh">Love songs</genre>
  <genre authority="lcsh">Songs with piano</genre>
  <originInfo>
    <place>

```

```
<placeTerm type="code" authority="marccountry">nyu</placeTerm>
  <placeTerm type="text">New York</placeTerm>
</place>
<publisher>Ted Snyder Co.</publisher>
<copyrightDate encoding="w3cdtf"
  keyDate="yes">1912</copyrightDate>
</originInfo>
<language>
  <languageTerm type="text">English</languageTerm>
  <languageTerm type="code" authority="iso639-
    2b">eng</languageTerm>
</language>
<physicalDescription>
  <form authority="marcform">print</form>
  <internetMediaType>image/jpeg</internetMediaType>
  <extent>1 score (5 p.) : ill. ; 35 cm.</extent>
  <digitalOrigin>reformatted digital</digitalOrigin>
</physicalDescription>
<note>For voice and piano.</note>
<note>Publisher's advertising includes musical incipits.</note>
<subject authority="lcsch">
  <topic>Seasons</topic>
</subject>
<subject authority="lcsch">
  <topic>Spring</topic>
</subject>
<subject authority="lcsch">
  <topic>Autumn</topic>
</subject>
<identifier
  type="uri">http://purl.dlib.indiana.edu/iudl/lilly/starr/LL-SSM-
  ALD3729 </identifier>
<location>
  <physicalLocation>Lilly Library, Indiana University
  Bloomington</physicalLocation>
  <url usage="primary display" access="object in
  context">http://purl.dlib.indiana.edu/iudl/lilly/starr/LL-SSM-
  ALD3729 </url>
</location>
<accessCondition type="useAndReproduction">Use of this public-domain
  resource is unrestricted.</accessCondition>
<recordInfo>
  <recordContentSource
  authority="marcorg">IUL</recordContentSource>
  <recordCreationDate encoding="w3cdtf">1999-03-
  29</recordCreationDate>
  <recordChangeDate encoding="w3cdtf">2006-10-14</recordChangeDate>
  <recordIdentifier source="InU-Li">LL-SSM-
  ALD3729</recordIdentifier>
  <recordOrigin>Base MODS record derived from MARC21 record, then
  edited to conform to the DLF/Aquifer Implementation Guidelines
  for Shareable MODS Records.</recordOrigin>
  <languageOfCataloging>
    <languageTerm authority="iso639-2b">eng</languageTerm>
  </languageOfCataloging>
</recordInfo>
</mods>
```

Example 7: Record for a physical artifact (University of Illinois at Urbana-Champaign)

```

<mods xmlns="http://www.loc.gov/mods/v3"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.loc.gov/mods/v3
http://www.loc.gov/standards/mods/v3/mods-3-2.xsd">
  <titleInfo>
    <title> Life Mask of Stephen A. Douglas</title>
  </titleInfo>
  <name type="personal" authority="naf">
    <namePart>Volk, Leonard Wells</namePart>
    <namePart type="date">1828-1895</namePart>
    <role>
      <roleTerm authority="marcrelator"
type="text">Sculptor</roleTerm>
      <roleTerm authority="marcrelator" type="code">scl</roleTerm>
    </role>
  </name>
  <typeOfResource>three dimensional object</typeOfResource>
  <genre authority="aat">life masks</genre>
  <genre authority="aat">casts (sculpture)</genre>
  <originInfo>
    <dateCreated encoding="w3cdtf" keyDate="yes"
qualifier="approximate">1857</dateCreated>
  </originInfo>
  <physicalDescription>
    <form authority="gmd">art original</form>
    <internetMediaType>image/jpeg</internetMediaType>
    <digitalOrigin>reformatted digital</digitalOrigin>
  </physicalDescription>
  <abstract>This is a life mask of Stephen A. Douglas created by
Leonard Volk in 1857. Douglas, who was related to Volk by marriage,
sent him to Rome in 1856 to perfect his craft. Upon Volk's return in
1857, he made a life mask of Douglas.</abstract>
  <subject authority="lcsch">
    <name type="personal" authority="naf">
      <namePart>Douglas, Stephen Arnold</namePart>
      <namePart type="date">1813-1861</namePart>
    </name>
  </subject>
  <location>
    <physicalLocation>University of Illinois at Urbana-Champaign.
Library. Rare Book Room</physicalLocation>
    <url usage="primary display" access="object in
context">http://images.library.uiuc.edu:8081/u/?tdc,252</url>
  </location>
  <accessCondition type="useAndReproduction">Use of this public-domain
resource is unrestricted.</accessCondition>
  <recordInfo>
    <recordContentSource authority="marcorg">IU</recordContentSource>
    <recordOrigin>Mapped from a Qualified Dublin core record to
MODS.</recordOrigin>
    <languageOfCataloging>
      <languageTerm authority="iso639-2b">eng</languageTerm>
    </languageOfCataloging>
  </recordInfo>
</mods>

```

```
</recordInfo>
</mods>
```

Example 8: Record for a born digital item (Emory University)

```
<mods xmlns="http://www.loc.gov/mods/v3"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.loc.gov/mods/v3
http://www.loc.gov/standards/mods/v3/mods-3-2.xsd">
  <titleInfo>
    <title>Roadside architecture</title>
  </titleInfo>
  <name type="personal" authority="naf">
    <namePart>Wharton, David</namePart>
    <namePart type="date">1947-</namePart>
    <role>
      <roleTerm type="text"
        authority="marcrelator">Creator</roleTerm>
    </role>
    <role>
      <roleTerm type="text"
        authority="marcrelator">Author</roleTerm>
    </role>
    <role>
      <roleTerm type="text"
        authority="marcrelator">Photographer</roleTerm>
    </role>
  </name>
  <typeOfResource>still image</typeOfResource>
  <typeOfResource>text</typeOfResource>
  <genre authority="marcgt">picture</genre>
  <originInfo>
    <place>
      <placeTerm type="text">Atlanta, Ga.</placeTerm>
      <placeTerm type="code" authority="marccountry">gau</placeTerm>
    </place>
    <publisher>Metascholar Initiative at Emory University</publisher>
    <dateIssued encoding="w3cdtf" keyDate="yes">2005-02-
    01</dateIssued>
  </originInfo>
  <language>
    <languageTerm type="text">English</languageTerm>
    <languageTerm type="code" authority="iso639-
    2b">eng</languageTerm>
  </language>
  <physicalDescription>
    <internetMediaType>image/jpeg</internetMediaType>
    <internetMediaType>text/html</internetMediaType>
    <extent>1 electronic text, 19 photographs, 1 map</extent>
    <digitalOrigin>born digital</digitalOrigin>
  </physicalDescription>
  <abstract displayLabel="summary">Since coming to Mississippi in
  1999, David Wharton has been photographing the social and cultural
  landscape of the mid-South with an emphasis on rural and small-town
  life. This photo essay on buildings in rural and small-town settings
  in Mississippi and other parts of the Deep South features eighteen
```

of Wharton's photographs taken between 1999 and 2004. Included with the exhibit is Wharton's introductory narrative and a map displaying the locations of his photographs.</abstract>
<tableOfContents>Abstract -- Photo essay sections: Introduction -- Photo Essay -- Map and recommended resources</tableOfContents>
<subject authority="lcsh">
 <topic>Roadside architecture</topic>
 <geographic>Southern States</geographic>
 <genre>Pictorial works</genre>
</subject>
<subject authority="lcsh">
 <topic>Roadside architecture</topic>
 <geographic>Mississippi</geographic>
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