

**Claremont Colleges Digital Library
Dublin Core Metadata Elements
Best Practices
Version 2
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CCDL Metadata Task Force
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1. Introduction

1.1 Purpose of the Metadata Best Practices

The Claremont Colleges Digital Library's (CCDL) Metadata Best Practices provides fundamental guidelines for creating metadata records for digital resources destined for dissemination in the CCDL. Developing these metadata best practices according to standards described in this document will:

- 1) Ensure quality control for metadata records.
- 2) Improve discovery of resources.
- 3) Increase interoperability across all collections created by the Claremont Colleges.
- 4) Increase interoperability with other digital libraries participating in the Open Archives Initiative.
- 5) Inform users on the digital object structure and when necessary viewers such as Adobe Acrobat Reader or Real Player are needed to view the digital resource.
- 6) Assist with management and long-term preservation of digital files.

The best practices address the needs of a diverse audience from the seven Claremont Colleges. This document will accommodate different knowledge backgrounds and metadata skill levels of those charged with creating metadata records, including librarians, faculty, administrative assistants, Web page developers, or volunteers. We have attempted to provide clear and concise guidelines and in most cases have followed up with examples.

1.2 Metadata Defined

There are many definitions for the term metadata. The most widely accepted and commonly used is "descriptive information about digital resources." The term metadata came about with the advent of the World Wide Web and is the contemporary term for the bibliographic information that libraries traditionally entered into their catalogs or the registration information that museums enter into their asset management systems.

Metadata creation is a necessary part of digital collections disseminated via the World Wide Web and must be incorporated into the project's workflow. Metadata is associated with the digital resource to support the discovery, use, management, and preservation of the digital resource. There are three commonly accepted metadata types with some overlap between the three.

- **Discovery/Descriptive metadata:** information used for the indexing, discovery and identification of a digital resource. Examples are resource title, creator of the resource, and subject of the resource to name a few. This data is the information that is commonly displayed to the public online through the CCDL. Most descriptive metadata fields are searchable through the CCDL's interface as well as popular search engines such as Google, enabling patrons to find the resource.
- **Structural metadata:** information used to display and navigate digital resources; information on the internal organization of the digital resource; information on viewer or reader plug-in needed to open the digital resource.

- **Administrative metadata:** information needed to manage the resource over time, including technical information such as the resolution of the image, file size, file format, hardware and software used to produce the digital resource, etc.

1.3 What is Dublin Core?

Dublin Core is an internationally recognized metadata standard comprised of fifteen elements used to describe a resource. The semantics of these elements have been established through consensus by an international, cross-disciplinary group of professionals from the library, museum, publishing, computer science and text encoding communities and other related fields of scholarship. The Dublin Core Metadata Initiative (DCMI) Element Set has been approved by the American National Standards Institute (ANSI) and assigned the number Z39.85.

The CCDL has adopted the Dublin Core Metadata Element Set and Qualifiers as its metadata schema and uses the element set as defined by the Dublin Core Metadata Initiative.

Characteristics of the Dublin Core element set are:

- Simplicity of creation and maintenance allowing a non-specialist to easily and efficiently create descriptive records for digital resources.
- Commonly understood terminology and semantics that are universally understood and supported.
- International in scope ensures that the standard will address the multicultural and multilingual nature of networked resources.
- Extensibility by allowing additional elements to be added that make sense within a specific discipline. Additional elements can be mapped to Dublin Core to meet the need for extensibility to aid in additional resource discovery and granularity needed for access.

2. Using Dublin Core Metadata Elements

2.1. Discovery Metadata

Although each element is optional and repeatable in its standard form, the CCDL has made specific recommendations for each element.

Dublin Core Metadata Initiative issued a list of recommended Dublin Core Qualifiers in July of 2000 and is listed on page 20. These qualifiers are used with the 15 elements and are broken into two broad classes:

Element Refinement. These qualifiers make the meaning of an element narrower or more specific. A refined element shares the meaning of the unqualified element, but with a more restricted scope.

Encoding Scheme. These qualifiers identify schemes that aid in the interpretation of an element value. These schemes include controlled vocabularies and formal notations or parsing rules. The definitive description of an encoding scheme for qualifiers must be clearly identified and available for public use.

To clarify the appropriate use of each element, each section is broken down by the element name, followed by the categories: label, definition, comment, repeatable, mandatory, and CCDL Recommendation.

- **Element Name:** the name of the element according to Dublin Core
- **Label:** the name of the element as used by the CCDL, which is often the same as the “Element Name”
- **Definition:** the definition of the element according to Dublin Core
- **Comment:** expansion or clarification of the Definition as defined by Dublin Core
- **Repeatable:** if the element may be repeated more than once it will be followed by “yes.” Examples of this are with multiple creators of a resource or multiple subject headings. “No” indicates that the field may not be repeated. All of the elements listed in this document are repeatable.
- **Mandatory:** if the element is mandatory, i.e. must not be left blank, then it will be followed by “yes.” If it is not mandatory then it will be followed by “no” or “if available.”
- **CCDL Recommendation:** further explanation of how the element should be used specifically for the CCDL

We recommend the ordering of the metadata elements as follows:

2.1.1. Element Name: Title

Label:	Title
Definition:	A name given to the resource.
Comment:	Typically, Title will be a name by which the resource is formally known.
Repeatable:	Yes
Mandatory:	Yes
Qualifier:	Alternative Title

CCDL Recommendation: All digital objects must have a title. Use “Untitled” only when the image is specifically named “Untitled.” If the cataloger assigns a title, use a title that best describes the image. If available, use information provided on or with the image. The title should describe the image in basic terms, but should not attempt to provide an exhaustive description. Only the first word of the title is capitalized unless the title includes proper noun(s). Omit quotation marks, parenthesis, and brackets when constructing a title. Omit initial articles from the title unless the article is an essential part of the title or supplies by the creator in the original title.

TITLE examples:

TITLE	Original object
Margaret Atwood talks to Harriet Gilbert about the novel, Cat's Eye	Audio interview
Bridging cultures in the classroom: from research to practice	Symposium lecture video
Ruins of the Mission San Antonio de Padua	Pencil drawing
Benezet Psychology Building, Claremont Graduate University	Photograph

2.1.2. Element Name: Creator

Label:	Creator
Definition:	An entity primarily responsible for making the content of the resource.
Comment:	Examples of Creator include a person, an organization, or a service. Typically, the name of a Creator should be used to indicate the entity.
Repeatable:	Yes
Mandatory:	If available

CCDL Recommendation: If no creator can be determined leave blank. Data entry of the creator name follows the AACr2 format, generally, last name, first name. Creator entries should follow an authority file Library of Congress Name Authority (<http://authorities.loc.gov/>). If an item has more than one creator, enter name(s) in the same creator field separated by a semi-colon.

CREATOR examples:

Title	CREATOR
Honnold Library Record, Volume 15, Number 2, Fall 1974	Honnold Library Society
Bringing Technology into the ODE Classroom: How and Why	Claus-McGahan, Elly
Performance Practice Review Vol. 10, no. 2, Fall 1997	Claremont Graduate University. Music Dept.
Acceptance Speech, Nihon University, June 21, 1962	Drucker, Peter F. (Peter Ferdinand), 1909-2005
CODEE Newsletter Winter-Spring 1997	Coleman, Courtney S., 1930-; Cooper, Kevin; Gordon, Sheldon P.; Rand, R. H. (Richard H.)

2.1.3. Element Name: Contributor

Label:	Contributor
Definition:	An entity responsible for making contributions to the content of the resource.
Comment:	Examples of Contributor include a person, an organization, or a service. Typically, the name of a Contributor should be used to indicate the entity.
Repeatable:	Yes
Mandatory:	No

CCDL Recommendations: Examples of a contributor include editor, transcriber, illustrator, etc. The role of the contributor may be included after the name in parentheses. Follow the same guidelines as the CREATOR field.

CONTRIBUTOR examples:

Title	CONTRIBUTOR
Oral history interview of Bob Buford, 1999-12-22	Linkletter, Karen (interviewer)
CODEE Newsletter Summer-Fall 1997	Burrell, Neil (editor); West, Beverly Henderson, 1939- (executive editor)
Becoming Paul M. Churchland: NeuroPhilosopher	Rosenkranz, Adam (introduction)

2.1.4. Element Name: Subject

Label:	Subject and Keywords
Definition:	A topic of the content of the resource.
Comment:	Typically, Subject will be expressed as keywords, key phrases or classification codes that describe a topic of the resource. Recommended best practice is to select a value from a controlled vocabulary or formal classification scheme.
Repeatable:	Yes
Mandatory:	Yes
Qualifier:	AAT LCSH MeSH TGM TGN

CCDL Recommendations: An appropriate thesaurus will be determined at the commencement of a collection. For a list of recognized controlled vocabulary thesauri, see Section 8, page 28-29. Use subject terms from an established thesaurus determined during collection preparation. Terms specific to the collection and not found in the chosen thesaurus should be entered in another element labeled Subject – Local. Multiple subject terms in an element must be separated by a semicolon and a space.

SUBJECT examples:

Element label	SUBJECT
Subject - LCSH	Mural painting and decoration; Derry (Northern Ireland); Ireland--History--Easter Rising, 1916
Subject - AAT	woodcuts; women; temples; kimonos
Subject - Local	IRA Volunteers
Subject - LCSH	Correspondence; Publishers and publishing; Hospitality; Sears, Roebuck and Company
Subject - LCSH	Portrait photography; College students
Subject - LCSH	Daguerreotype; African American cowboys; Cowboy boots; Horses; Western saddles

2.1.5. Element Name: Coverage

Label:	Coverage
Definition:	The extent or scope of the content of the resource.
Comment:	Typically, Coverage will include spatial location (a place name or geographic coordinates), temporal period (a period label, date, or date range) or jurisdiction (such as a named administrative entity). Recommended best practice is to select a value from a controlled vocabulary (for example, the Thesaurus of Geographic Names [TGN]) and to use, where appropriate, named places or time periods in preference to numeric identifiers such as sets of coordinates or date ranges.
Repeatable:	Yes

Mandatory: No
 Qualifier: Temporal
 Spatial

CCDL Recommendation: Best practice is to select a value from a controlled vocabulary such as Library of Congress Subject Headings (LCSH) or Thesaurus of Geographic Names (TGN) or USGS Geographic Names Information System (GNIS) and, where appropriate, named places or time periods be used in preference to numeric identifiers such as sets of coordinates or date ranges.

Where appropriate, named Spatial or Temporal should be used in preference to numeric identifiers, such as sets of coordinates or date ranges. Choose one or both qualifiers as the collection warrants. Use the Temporal qualifier to describe eras, time periods, which cover the content of the digital object. Where appropriate, use a controlled vocabulary such as Art & Architecture Thesaurus (AAT).

COVERAGE - TEMPORAL examples:

Qualified element label	COVERAGE – TEMPORAL	Authority	Comment
Coverage - Temporal	Meiji	AAT	Describes a Japanese Woodblock print
Coverage - Temporal	Early Victorian	AAT	Describes a photograph
Coverage - Temporal	1961-1989	[date span for the Berlin Wall from LCSH]	Describes a thesis about the Berlin Wall art. The date of the thesis is 2007, but the coverage is when the Berlin Wall was in existence from 1961-1989.

Use the Spatial qualifier to describe places or geographic coordinates covered by the content of the digital object. Use Library of Congress Subject Headings (LCSH) for geographic names. If a location is not listed in LCSH, construct one following the LCSH format. Use USGS Geographic Names Information System (GNIS) for coordinates.

COVERAGE – SPATIAL examples:

Qualified element label	COVERAGE – SPATIAL	Authority
Coverage - Spatial	North America	LCSH
Coverage - Spatial	Mount San Antonio (Calif.); Lat: 341720N, Long: 1173848W	GNIS
Coverage – Spatial	Claremont (Calif.)	LCSH

2.1.6. Element Name: Description

Label:	Description
Definition:	An account of the content of the resource.
Comment:	Examples of Description include, but are not limited to: an abstract, annotations, captions, table of contents, reference to a graphical representation of content or a free-text account of the content.
Repeatable:	Yes
Mandatory:	Yes, if applicable
Qualifier:	Table of Contents Abstract

CCDL Recommendations: Enter here a general description of the image. Transcribe anything handwritten, stamped, or printed on the image, mat, or case. Include any descriptive information provided by the holding institution and/or any pertinent information not represented in other fields. Description field may include contextual information about the object.

DESCRIPTION examples:

Title	Source	DESCRIPTION
Baby Grace Helen Adams	Photograph	A baby in a baby carriage with a large lacy white umbrella rests outside of a house in Los Angeles. Grace Helen was the daughter of Mr. and Mrs. C. Milton Adams, members of the Temple Baptist Church.
Correspondence from Peter Drucker to James Worthy, November 9, 1957	Letter	Drucker argues the possible setbacks the Republican Party could face in the Congressional elections of 1954 and makes suggestions as to how a victory could be achieved.
Alfred Robinson's description of the bay of San Francisco	Document	Hand-written notes copied verbatim by Vischer from Alfred Robinson's description of the Bay of San Francisco (1846). The note paper was folded in half and hand-sewn with string. Notes include descriptions of the San Francisco Bay, the Mission Dolores, Santa Clara, and San Jose.
Baiting the line	Artwork	Modern American Impressionist-style oil painting of a sailboat with two fishermen in it, out on the water.
Interview with Steadman Upham	Video	The President of Claremont Graduate University from 1998-2004, Upham worked with Peter Drucker when he was a "very illustrious" faculty member. Upham believes Drucker to be as much a social philosopher as a professor of management, and contends that Drucker continues to be influential to social and economic policy.

2.1.7. Element Name: Publisher

Label:	Publisher
Definition:	An entity responsible for making the digital resource available
Comment:	Examples of Publisher include a person, an organization, or a service. Typically, the name of a Publisher should be used to indicate the entity.
Repeatable:	Yes
Mandatory:	Yes

CCDL Recommendations: If an object existed in another form before being digitized, the publisher of this earlier form may be entered in another Publisher element, making a distinction between “Publisher – digital” and “Publisher - original.” This enables information exported from art institutions to transfer cleanly. Omit initial articles in publisher names. Enter group or organization names according to AACr2 format in full, direct form. In the case of a hierarchy, list the parts from the largest to smallest, separated by periods. (e.g., Harvey Mudd College. Mathematics Dept.). If the publisher is the same as the creator, enter the name or entity in both the Publisher and Creator elements. Information in this field should conform to either Library of Congress Name Authorities (LCNAF) or local name authorities for the institutions.

PUBLISHER Examples:

Element label	PUBLISHER
Publisher	Drucker Institute
Publisher	Pitzer College. Office of Public Relations
Qualified element label	Publisher
Publisher - original	Tetsujiro, Kobayashi
Publisher - digital	Ruth Chandler Williamson Gallery

2.1.8. Element Name: Date

Label:	Date
Definition:	A date of an event in the lifecycle of the resource.
Comment:	Typically, Date will be associated with the creation or availability of the resource. Recommended best practice for encoding the date value is defined in a profile of ISO 8601 [W3CDTF] and includes (among others) dates of the form YYYY-MM-DD.
Repeatable:	Yes
Mandatory:	Yes

CCDL Recommendations: Use the date of the original resource in one of the following formats. Record the date of the original resource in YYYY-MM-DD, YYYY-MM, or YYYY format. If unable to determine the exact date, use one of the following formats listed in the examples below. If no date or circa date can be determined, leave blank.

Options for unknown exact date:

Date type	DATE example
Known year-month-day	2001-10-19
Known year-month	2001-10
Known year	2001

One year or another	1892 or 1893
Circa year	circa 1843
Decade certain	1970s
Before a time period	before 1867
After a time period	after 1867

DATE examples:

Title	DATE
Baxter Medical Center	1958
Preparing for a Surprising and Rewarding Career Applying the Science of Psychology	2004-01-24
Alfred Robinson's Description of the Bay of San Francisco	circa 1846-1873
Aerial view of Harvey Mudd Campus	before 1968
Bell Pool with sunbathers	after 1968

If a collection contains items with an indefinable single date such as date ranges or circa dates, enter the date information into two fields, **Date** and **System Date**.

Settings for using two date elements:

Element label	Dublin core map	Data type map	Set to	Set to
DATE	date	text	visible	searchable
SYSTEM DATE	none	date	hidden	searchable

Date examples using two date elements:

	Element label	
	DATE	SYSTEM DATE
Example 1	circa 1961	1961
Example 2	1970-1975	1970/1975 [which the system translates to read: 1970; 1971; 1972; 1973; 1975]

2.1.9. Element Name: Language

Label:	Language
Definition:	A language of the intellectual content of the resource.
Comment:	Recommended best practice is to use RFC 3066 [RFC3066] which, in conjunction with ISO639 [ISO639]), defines two- and three-letter primary language tags with optional subtags. Examples include "en" or "eng" for English, "akk" for Akkadian", and "en-GB" for English used in the United Kingdom.
Repeatable:	Yes
Mandatory:	No

CCDL Recommendation: For items that contain language text or audio, use the ISO 639-2 Standard 3-letter code (see section 7, page 22). For digital objects where multiple languages are used, separate codes with a semicolon and space.

LANGUAGE examples:

Title	LANGUAGE
Divine Prince Ugayafuki Aezu	jpn; eng
Digital production lab proposal for the CCDL	eng
Correspondence from Dr. jur. Karl Strupp to Peter Drucker, 1933	ger

2.1.10. Element Name: Type

Label: Digital Type

Definition: The nature or genre of the content of the resource.

Comment: Type includes terms describing general categories, functions, genres, or aggregation levels for content. Recommended best practice is to select a value from a controlled vocabulary (for example, the DCMI Type Vocabulary [DCT1]). To describe the physical or digital manifestation of the resource, use the FORMAT element.

Repeatable: Yes

Mandatory: Yes

CCDL Recommendations: Enter a Dublin Core Suggested Type:

- Collection
- Dataset
- Event
- Image
- Interactive Resource
- Service
- Software
- Sound
- Text

TYPE examples:

Title	TYPE	Format	Analog form
Boynton family Christmas photograph	Image	image/jp2	photograph
The Emergence and Future of Applied Psychology	Moving Image; Event	video/H264; video/quicktime	videotaped conference lecture
Honnold Library Record, Volume 15, Number 1, Spring 1974	Text	application/pdf	journal
National Library Week	Moving Image; Event	video/mp4	videotaped event

2.1.11. Element Name: Format

Label:	Format
Definition:	The physical or digital manifestation of the resource.
Comment:	Typically, Format may include the media-type or dimensions of the resource. Format may be used to identify the software, hardware, or other equipment needed to display or operate the resource. Examples of dimensions include size and duration. Recommended best practice is to select a value from a controlled vocabulary (for example, the list of Internet Media Types [MIME] defining computer media formats).
Repeatable:	Yes
Mandatory:	Yes

CCDL Recommendations: Typically, Format may include the media-type or dimensions of the resource. The CCDL describes only the digital manifestation of the resource in this element. Format may be used to identify the software, hardware, or other equipment needed to display or operate the resource. Examples of dimensions include size and duration. Recommended best practice is to select a value from a controlled vocabulary defining non proprietary media types computer formats.

- video/H264
- text/html
- image/jpeg
- image/jp2
- video/mpeg
- video/mp4
- application/pdf
- video/quicktime
- image/tiff

FORMAT for images and texts examples:

Collection name	Element label	FORMAT
Honnold Library Record, Volume 15, Number 1, Spring 1974	Format	application/pdf
Murals of Northern Ireland	Format	image/jp2
Guide to the Hartley Burr Alexander Projects Collection	Format	text/html
Biographical information on Peter Drucker	Format	image/jpeg

Different material types, such serving streaming video at four different speeds, may necessitate repeating the Format element (see example for video below).

FORMAT for videos examples:

Digital video (same video, repeated fields)	Element label	FORMAT
What was postmodernism?	Running time	01:15:20
What was postmodernism?	Video Format - 40 Kbps	video/mp4
What was postmodernism?	Video Format - 300 Kbps	video/H264; video/quicktime
What was postmodernism?	Video Format - 800 Kbs	video/H264; video/quicktime
What was postmodernism?	Video Format - LAN	video/H264; video/quicktime

2.1.12. Element Name: Identifier

Label:	Resource Identifier
Definition:	An unambiguous reference to the resource within a given context.
Comment:	Recommended best practice is to identify the resource by means of a string or number conforming to a formal identification system. Formal identification systems include but are not limited to the Uniform Resource Identifier (URI) (including the Uniform Resource Locator (URL)), the Digital Object Identifier (DOI) and the International Standard Book Number (ISBN).
Repeatable:	Yes
Mandatory:	Yes

CCDL Recommendations: For system use only.

2.1.13. Element Name: Source

Label:	Source
Definition:	A Reference to a resource from which the present resource is derived.
Comment:	The present resource may be derived from the Source resource in whole or in part. Recommended best practice is to identify the referenced resource by means of a string or number conforming to a formal identification system.
Repeatable:	Yes
Mandatory:	No

CCDL Recommendations: Use the source element to cite or describe any other resource from which the digital resource was derived, which may include free text combined with a formal identification system (such as an ISBN to describe a book). This can also include the dimensions of the original object; physical attributes of the item, such as; dimensions, quantity, or number of pages; medium, such as letter, oil on canvas, or color photograph; collection name, collection or accession number, and/or box/folder number; and where the original material is housed, if location is known.

SOURCE examples:

SOURCE	Comments
Handwritten letter: Letter from Bela Gold to Peter Drucker; Drucker Archives; Box 2 Correspondence: Incoming A-Ter; Folder 31 Incoming Correspondence, Gold, Bela; 1 page.	Digitized original handwritten letter
Born digital: Microsoft Word reformatted to pdf.	Thesis created in Microsoft Word then converted to pdf
Photocopied document: Drucker Archives; Box 35 - Speeches, Lists, Notes, Reports, Other Manuscripts; Folder 26 - Agenda, CARE Corporate Council Champions' Meeting; 4 pages.	Digitized photocopied letter
Glass plate negative: 3.25 x 4.25 inches; The Boynton Collection of Glass Negatives; paper sleeve title, "Kid Graves."	Digitized glass plate negative

Wood-block print: Ink on Paper; 14 5/8 in. x 9 7/16 in. (37.15 cm x 23.97 cm); accession number 2004.1.27	Digitized slide of Japanese woodblock prints
Videotape: Excerpt from 30 minute VHS Tape; Tape 15: Peter F. Drucker Biography 11/20/2001	Encoded video tape excerpt

2.1.14. Element Name: Relation

Label:	Relation
Definition:	A reference to a related resource.
Comment:	Recommended best practice is to identify the referenced resource by means of a string or number conforming to a formal identification system.
Repeatable:	Yes
Mandatory:	Yes

CCDL Recommendation: Include sufficient information in the Relation element to enable users to identify, cite, and either locate or link to the related resource. Record the URL to the collection home page. When applicable, use one of the recommended Dublin Core qualifiers as follows:

- a. Is Version Of
- b. Has Version
- c. Is Replaced By
- d. Replaces
- e. Is Required By
- f. Requires
- g. Is Part Of
- h. Has Part
- i. Is Referenced By
- j. References
- k. Is Format Of
- l. Has Format
- m. Conforms To

RELATION examples:

Element label	RELATION
Relation	Drucker Archives, http://ccdlibraries.claremont.edu/col/dac/
Relation - is version of	CCDL Metadata Best Practices v.1 2006-11-01; http://ccdlibraries.claremont.edu/u?adl_29
Relation – is format of	Consortium of ODE Experiments (C*ODE*E), http://www.math.hmc.edu/codee/
Relation – is part of	Pomona College Archives, Special Collections at the Libraries of The Claremont Colleges

2.1.15. Element Name: Rights

Label: Rights Management

Definition: Information about rights held in and over the resource.

Comment: Typically, Rights will contain a rights management statement for the resource, or reference a service providing such information. Rights information often encompasses Intellectual Property Rights (IPR), Copyright, and various Property Rights. If the Rights element is absent, no assumptions may be made about any rights held in or over the resource.

Repeatable: Yes

Mandatory: Yes

CCDL Recommendations: Each collection can have its own rights management statement. If one is not created, then the following generic statement can be used:

RIGHTS examples:

Collection title	RIGHTS
Edward Vischer Drawings, Photographs and Other Material	For more information on copyright or permissions for this image, please contact Honnold/Mudd Library Special Collections at http://libraries.claremont.edu/sc .
Interface journal	Interface: An interdisciplinary journal of student research at Harvey Mudd College has non-exclusive publication rights to the articles contained in each issue. Permission is granted to quote from the journal with the customary acknowledgment of the source. Copyright for each article is retained by the author. Republication in any form requires permission from the author of the article.
[generic]	Physical rights are retained by the institution. Copyright is retained in accordance with U. S. Copyright laws

2.2. Dublin Core Elements Qualifiers

DCMES Element	Qualifier Element Refinement(s)	Qualifier Element Encoding Scheme(s)
<u>Title</u>	<u>Alternative</u>	-
<u>Creator</u>	-	-
		<u>LCSH</u>
		<u>MeSH</u>
<u>Subject</u>	-	<u>DDC</u>
		<u>LCC</u>
		<u>UDC</u>
<u>Description</u>	<u>Table Of Contents</u>	-
	<u>Abstract</u>	-
<u>Publisher</u>	-	-
<u>Contributor</u>	-	-
	<u>Created</u>	
	<u>Valid</u>	
	<u>Available</u>	
<u>Date</u>	<u>Issued</u>	<u>DCMI Period</u>
	<u>Modified</u>	<u>W3C-DTF</u>
	<u>Date Accepted Date Copyrighted</u>	
	<u>Date Submitted</u>	
<u>Type</u>	-	<u>DCMI Type Vocabulary</u>
	-	<u>IMT</u>
<u>Format</u>	<u>Extent</u>	-
	<u>Medium</u>	-
<u>Identifier</u>	-	<u>URI</u>
	<u>Bibliographic Citation</u>	-
<u>Source</u>	-	<u>URI</u>
<u>Language</u>	-	<u>ISO 639-2RFC 3066</u>
	<u>Is Version Of</u>	
	<u>Has Version</u>	
	<u>Is Replaced By</u>	
	<u>Replaces</u>	
	<u>Is Required By</u>	
<u>Relation</u>	<u>Requires</u>	<u>URI</u>
	<u>Is Part Of</u>	
	<u>Has Part</u>	
	<u>Is Referenced By</u>	
	<u>References</u>	
	<u>Is Format Of</u>	

	<u>Has Format</u>	
	<u>Conforms To</u>	
		<u>DCMI Point</u>
		<u>ISO 3166</u>
<u>Coverage</u>	<u>Spatial</u>	<u>DCMI Box</u>
		<u>TGN</u>
		<u>DCMI Period</u>
	<u>Temporal</u>	<u>W3C-DTF</u>
<u>Rights</u>	<u>Access Rights</u>	-
	<u>License</u>	<u>URI</u>
<u>Audience</u>	<u>Mediator</u>	-
	<u>Education Level</u>	-
<u>Provenance</u>	-	-
<u>Rights Holder</u>	-	-
<u>Instructional</u>	-	-
<u>Method</u>	-	-
<u>Accrual Method</u>	-	-
<u>Accrual Periodicity</u>	-	-
<u>Accrual Policy</u>	-	-

3. Recommended Non Dublin Core Elements

3.1. Notes

This is a general entry field for information the cataloger feels should be included in the record, but does not fit in any other field. Examples include but are not limited to:

- Relating objects within and across collections in the digital library.
- Citations of sources used for researching the object.

3.2. Cataloged By

Cataloger's initials are entered in lowercase. If metadata is updated or edited, new cataloger adds their lowercase initials after a semi-colon and a space.

3.3. Catalog Date

Used to enter the date the digital item was cataloged. Enter the date the record is cataloged in YYYY-MM-DD format. Example: Catalog Date: 2001-10-12

3.4. Object File Name

Used to enter the eight-character file name for single page images or the thirteen character file name for multiple page images. Use the collection's three letter alias followed by a five digit sequential number for a single page item, or a wrapper object. Add an underscore followed by a four digit sequential number for multiple page items. For an object that is part of a compound object nested in a larger compound object, add another underscore followed by a four digit sequence.

Example of a single object: dac000001

Example of item in a compound object: dac000001_0001

Example of an item in a compound object in a larger compound object: dac000001_0001_0001

OBJECT FILE NAME examples:

Original object	Object File Name
Photograph or single paged letter	dac000001
Page within a journal or several paged letter	dac000001_0001
Page within a pamphlet glued to a scrapbook page	dac000001_0001_0001

4. Structural Metadata

4.1. Element Name: Viewer Information

Label: Viewer Information

Definition: Special viewers needed to see and/or hear this material and a link for downloading the special viewer.

Comments: The majority of the CCDL collections can be seen and read without special viewers. However, in some collections you may provide sound

recordings, films, additional high-resolution images, and text with enhanced navigation. Just as you would need special equipment to play videotapes, cassettes, CDs, and DVDs at home, patrons will need special viewers to see and hear these materials.

5. Digital Records for Preservation

Creating digital resources is both labor intensive and costly, so we are challenged to ensure long-term access to digital resources. Effective preservation of digital resources requires (a) attention early in the life cycle, at the moment of creation, and (b) ongoing management (with attendant costs) to ensure continued usability. The preservation process is made more efficient when attention is paid to issues of consistency, format, standardization and metadata description. To aid in preservation and management, each digital resource must have accompanying structural and administrative metadata.

5.1. *Administrative Metadata*

Administrative metadata is technical information regarding how the files were created, the format in which they are stored, their size in kilobytes (KB) and use characteristics. Until an administrative metadata schema has been determined a standard, the CCDL will capture the following information:

5.1.1. **Element Name: Image Resolution**

Label: Image Resolution

Definition: Dots-per-inch.

Example: 300dpi, 600dpi

5.1.2. **Element Name: Image Bit-Depth**

Label: Image Bit-Depth

Definition: Number of different colors or shades of gray that can be stored in each pixel of an image.

Examples: 8-bit, 24-bit

5.1.3. **Element Name: Color Mode**

Label: Color Mode

Definition: Color (no shades of gray) or Grayscale (no color tones) or Black/White

5.1.4. **Element Name: Extent**

Label: Extent

Definition: Indicates the range over which a digital object reaches as expressed in space or time. Digital object extent types include pixel dimensions for scanned image (WWW:HHH) and duration for playing time of an audio recording or motion picture (HHH:MM:SS:SS).

Example: 1:1, 3600 x 6000.

5.1.5. **Element Name: Image Manipulation**

Label: Image Manipulation

Definition: Image enhancements such as applying sharpen mask, and adjusting histograms.

5.1.6. Element Name: File Size

Label: File Size

Definition: The number of Kilobytes (KB) comprising the digital image.

5.1.7. Element Name: Hardware

Label: Hardware

Definition: Brand name of hardware used in creating the digital image.

Example: Epson Expression 1640XL Scanner

5.1.8. Element Name: Software

Label: Software

Definition: Brand name and version of software used in creating the digital image.

Example: Adobe Photoshop 7.0

5.1.9. Element Name: Digitized By

Label: Digitized By

Definition: Lowercase initials of person who digitized the item.

5.1.10. Element Name: Digitized Date

Label: Digitized Date

Definition: The date item was digitized. Enter the date the record was digitized in YYYY-MM-DD format.

6. Crosswalks

6.1. VRA/Dublin Core Metadata Crosswalk

<i>VRA</i>	<i>Dublin Core</i>
Title	Title
Creator	Creator
Subject	Subject
Style/Period	
Description	Description
	Publisher
Creator	Contributor
Location	
Date	Date
Type	Type
Record Type	
Measurements	Format
Material	
Format	
ID Number	Identifier
Source	Source
	Language
Relation	Relation
Date	Coverage
Location	
Style/Period	

Culture	
Rights	Rights

6.2. MARC to Dublin Core Crosswalk (Qualified)

DC Element	DC Qualifier(s)	MARC Fields	Implementation notes
Title		245	
Title	Alternative	130, 210, 240, 242, 246, 730, 740	
Creator		100, 110, 111, 700, 710, 711 720	See Appendix 1 below.
Subject	LCSH	600, 610, 611, 630, 650	Second indicator=0
Subject	MeSH	600, 610, 611, 630, 650	Second indicator=2
Subject	LCC	050	
Subject	DDC	082	
Subject	UDC	080	
Description		500-599, except 505, 506, 520, 530, 540, 546	
Description	TableofContents	505	
Description	Abstract	520	First indicator=3
Contributor			See Appendix 1 below; Contributor element not used.
Publisher		260\$a\$b	
Date	Created	260\$c\$g 533\$d	
Date	Issued	260\$c 008/07-10	
Type	DCMI Type Vocabulary	Leader06, Leader07 655	See Appendix 2 for Leader-Type rules Subfield \$2=dct
Format	IMT	856\$q	

	Extent	300\$a	
		533\$e	
	Medium	340\$a	
Identifier	URI	856\$u	
Source	URI	786\$o	
Language	ISO 639-2	008/35-37	
		041	Multiple codes need to be parsed by threes.
	RFC1766	546	
Relation	IsVersionOf	775,786\$n\$t	
Relation	IsVersionOf URI	775,786\$o	
Relation	HasVersion	775\$n\$t	
Relation	HasVersion URI	775\$o	
Relation	IsReplacedBy	785\$n\$t	
Relation	IsReplacedBy URI	785\$o	
Relation	Replaces	780\$n\$t	
Relation	Replaces URI	780\$o	
Relation	Requires	538	
Relation	IsPartOf	760,773\$n\$t	
		440, 490,800,810,811,830	
Relation	IsPartOf URI	760,773\$o	
Relation	HasPart	774\$n\$t	
Relation	HasPart URI	774\$o	
Relation	IsReferencedBy	510	
Relation	IsFormatOf	776\$n\$t	
Relation	IsFormatOf	530	

Relation	IsFormatOf URI	776\$o	
		530\$u	
Relation	HasFormat	776\$n\$t	
		530	
Relation	HasFormat URI	776\$o	
		530\$u	
Coverage	Spatial	522, 651	
		255	Some 255 information equivalent to DC encoding scheme but different syntax
		650\$z	
		752	
Coverage	Spatial ISO 3166	043\$c,044\$c	Defined in MARC in January 2001.
	Spatial TGN	651	Subfield \$2=tgn
Coverage	Temporal	513\$b	
		033\$a	
Rights		506, 540	No qualifiers defined.

7. Useful Websites for Metadata

Dublin Core Element Set. <http://dublincore.org/documents/dcmi-terms/#H2>

Dublin Core/MARC/GILS Crosswalk. <http://lcweb.loc.gov/marc/dccross.html>

ISO 639-2 Standard 3-letter code for languages. <http://www.loc.gov/standards/iso639-2/langhome.html>

ISO 8601 time/date standard. A pdf can be purchased through the ISO website <http://www.iso.org/iso/en/prods-services/ISOstore/store.html> or information about the standard from the W3C website <http://www.w3.org/TR/NOTE-datetime>

Library of Congress Home Page. <http://lcweb.loc.gov/>

MARC Home Page. <http://www.loc.gov/marc/marc.html>

MIME Media Types. <http://www.iana.org/assignments/media-types/>

8. Thesauri for Controlled Vocabulary

Geographic Names Information System (GNIS) for GIS coordinates.
<http://geonames.usgs.gov/pls/gnispublic/f?p=151:1:9971188465970574362>

Getty Art and Architecture Thesaurus (AAT) for images created of works of art or that document architectural works.
http://www.getty.edu/research/conducting_research/vocabularies/aat/

Getty Thesaurus of Geographic Names (TGN) for geographic names not found in the Library of Congress Authorities or deemed more appropriate.
http://www.getty.edu/research/conducting_research/vocabularies/tgn/

Getty Union List of Artists Names Online (ULAN) for artist's names not found in Library of Congress Authorities or deemed more appropriate.
http://www.getty.edu/research/conducting_research/vocabularies/ulan/

Library of Congress Name Authority File (LCNAF) for names of people, groups, institutions, or organizations.
<http://authorities.loc.gov/>

Library of Congress Subject Headings (LCSH) authority for textual documents, such as correspondence, transcripts, or books.

<http://authorities.loc.gov/>

Library of Congress Thesaurus for Graphic Material I (TGM I - Subject Terms) provides subject access terms for images created as works of art, for example, snapshots, documentary photographs, amateur photography, etc.

<http://www.loc.gov/rr/print/tgm1>

Library of Congress Thesaurus for Graphic Material II (TGM II - Genre and Physical Characteristic Terms) provides genre and physical characteristic terms for images created as works of art, for example, snapshots, documentary photographs, amateur photography, etc.

<http://www.loc.gov/rr/print/tgm2/>

Medical Subject Headings (MeSH) from the U.S. National Library of Medicine for biomedical and life sciences terms not found in Library of Congress Authorities or deemed more appropriate.

<http://www.nlm.nih.gov/mesh/2K/MBrowser.html>

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